Feb. 1, 1955 T. VANDER LUGT, JR 2,701,076

COLLAPSIBLE PARTITIONED CARTON

Filed Oct. 29, 1951 2 Sheets-Sheet 1

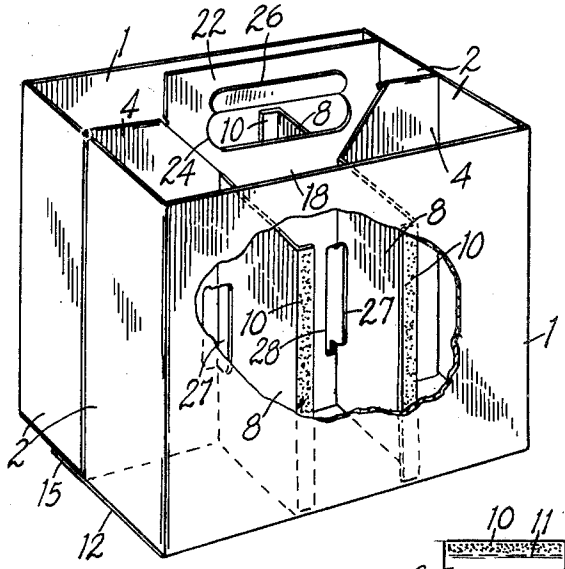


Fig. 1.

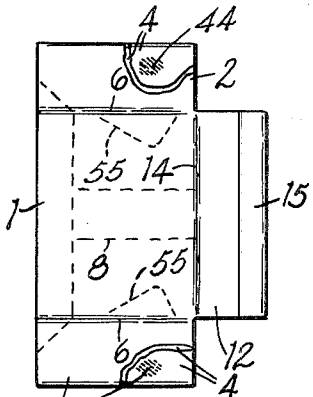


Fig. 4.

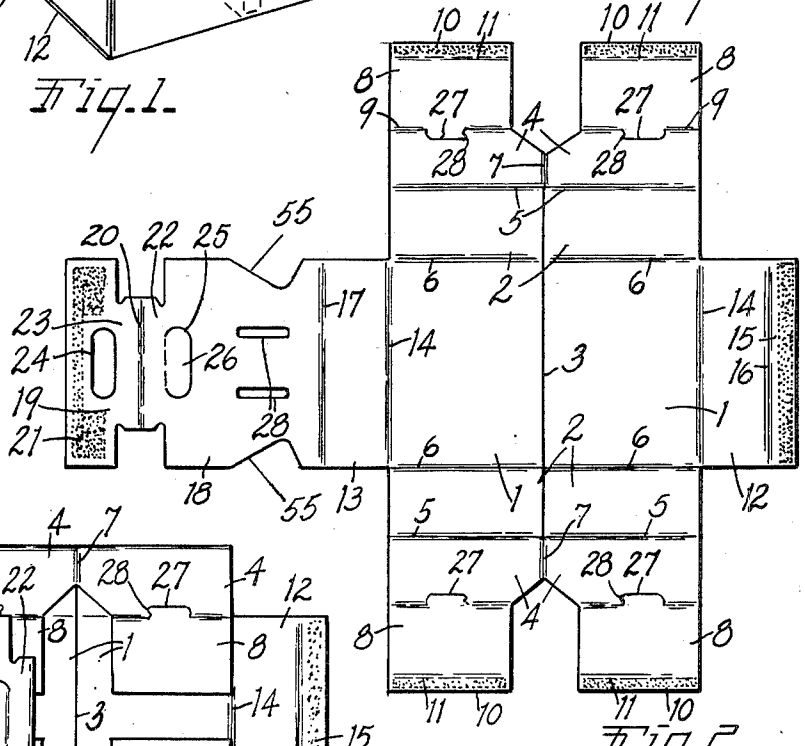


Fig. 2.

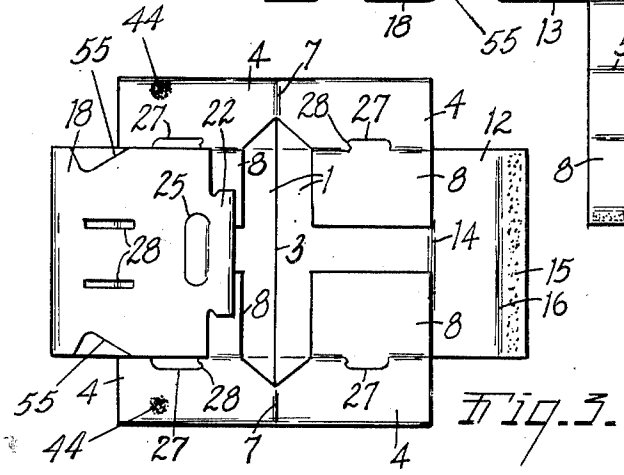


Fig. 3.

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Feb. 1, 1955 T. VANDER LUGT, JR 2,701,076

COLLAPSIBLE PARTITIONED CARTON

Filed Oct. 29, 1951 2 Sheets-Sheet 2

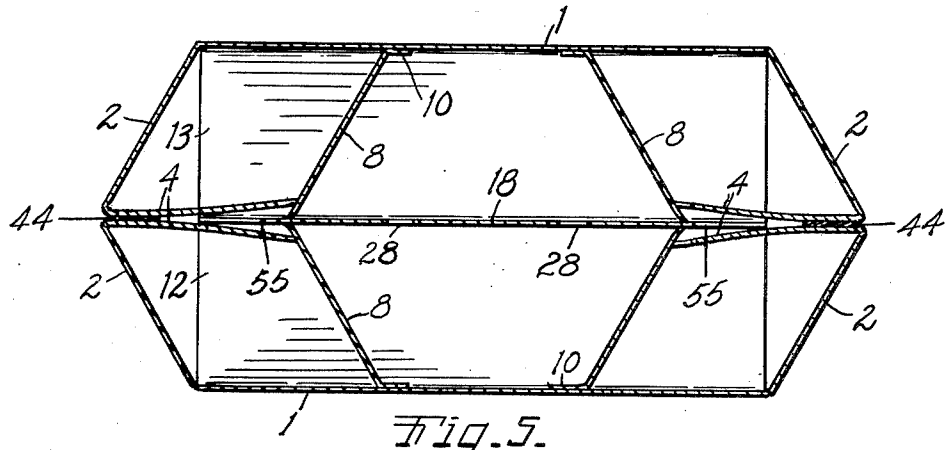


Fig. 5.

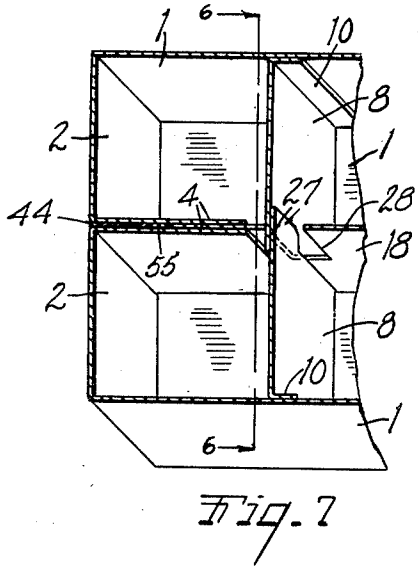


Fig. 7

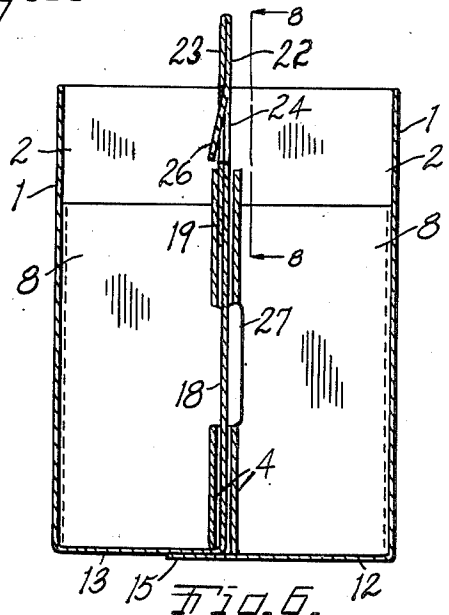


Fig. 6.

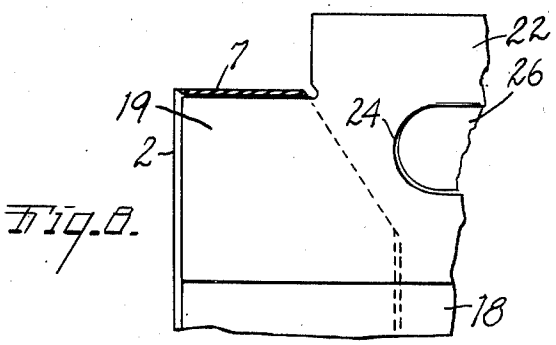


Fig. 8.

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United States Patent Office 2,701,076
Patented Feb. 1, 1955

2,701,076

COLLAPSIBLE PARTITIONED CARTON

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Application October 29, 1951, Serial No. 253,577

14 Claims. (Cl. 220—111)

This invention relates to improvements in collapsible partitioned cartons.

The main objects of this invention are:

First, to provide a collapsible partitioned carton which may be quickly erected and the parts securely locked or retained in erected position merely by pressing on opposed end edges of the collapsed carton.

Second, to provide a partitioned collapsible carton which is well adapted as a carrying carton and is strong and rigid when erected, the load on the bottom being effectively distributed to parts of the carton and well adapted to sustain the same.

Third, to provide a carton having these advantages which is formed of an integral blank, the folding and securing of parts in the knockdown being easily effected by simple glueing and folding steps.

Objects relating to details and economies of the invention will appear from the description to follow. The invention is defined and pointed out in the claims.

A preferred embodiment of the invention is illustrated in the accompanying drawing, in which:

Fig. 1 is a perspective view of a carton embodying my invention in erected position with a portion of the one wall being broken away to disclose details of the structure.

Fig. 2 is a plan view of the blank from which the carton is formed, adhesive being indicated on the parts which are adhered to other parts.

Fig. 3 is a plan view of the partially folded blank showing certain steps in the folding thereof.

Fig. 4 is a plan view of the collapsed carton with parts broken away to show details.

Fig. 5 is a horizontal section showing relation of the parts at one stage of the erection of the carton and also illustrating that the carton may be erected by pressing on the opposed ends of the collapsed carton.

Fig. 6 is a transverse section on a line corresponding to line 6—6 of Fig. 7.

Fig. 7 is a fragmentary longitudinal section of the erected carton.

Fig. 8 is a fragmentary view in section on a line corresponding to line 8—8 of Fig. 6.

It should be understood that in the specification and claims the terms side walls and end walls or end wall members are used for convenience in designating the parts and not as limitations. The carton may be of any desired shape and dimension.

The carton of the invention illustrated is formed of an integral blank shown as extended or flat in Fig. 2 and comprises side walls 1, 1 and complementary end wall members 2, 2 hingedly connected thereto.

The side walls and the end wall members are in side by side relation in the blank and are separated by a slit 3 but are connected by the end longitudinal partition members 4, 4 which are hingedly connected to the end wall members at 5. The several hinged connections are in the form of scores. The end wall members are hingedly connected to the side walls by scores 6, 6.

The end longitudinal partition members 4, 4 are hingedly connected at their upper edges by scores 7. The members 4, 4 are secured to each other adjacent their outer edges by spots or limited areas of adhesive 44, see Figs. 3, 5 and 7. The end longitudinal partition members have transverse partitions 8 hingedly connected thereto at 9. The transverse partitions are provided with sealing flaps 10 hingedly connected thereto at 11. The side walls, end wall members, longitudinal partition end members and the transverse partition members and their sealing flaps are disposed in alignment in the blank.

The bottom members 12 and 13 are hingedly secured to the bottom edges of the side walls at 14. The bottom member 12 has a sealing flap 15 hingedly secured thereto at 16. When the blank is folded the sealing flap 15 is lapped upon the outer side of the bottom member 13 and adhered thereto so that the hinged connection 16 for sealing flap 15 is in alignment with the hinged connection 17 of the intermediate longitudinal member 18 to the bottom member 13.

The longitudinal partition member 18 in the preferred embodiment is provided with a reinforcing extension 19 at its outer edge which is folded inwardly on the score line 20 and adhesively secured to the side of the member 18, the adhesive being indicated at 21. The member 18 has an extending central portion 22 and the extension 22 has correspondingly shaped portions 23, these parts together with the registering hand holes 24 and 25 constitutes a handle. The slit for the hand hole 25 is formed to leave a flap 26 which may be inserted in the openings and serves to provide a relatively smooth grip and also as a reinforce member.

The transverse partition members 8 are provided with tongues 27 on their hinged edges which project through the slots 28 in the intermediate longitudinal partition member when the carton is fully erected as is shown in Figs. 1, 6 and 7. These tongues are formed with upwardly projecting lugs 28 which engage the upper edges of the slots thereby acting to prevent disengagement. However, when the parts are in fully erected position there is little tendency, even when the carton is only partially filled, for it to collapse.

It will be noted during the erecting movement the ends of the intermediate longitudinal partition member are between the end longitudinal partition members (see Fig. 5). The intermediate longitudinal partition member is notched at 55 to receive the parts of the end members 4—4 which are secured by the adhesive 44. While this feature of securing the parts 4—4 together at 44 is a very desirable feature, the structure is practical when it is omitted. The result is that the completely collapsed carton as shown in Fig. 4 may be erected merely by the thrust on end edges thereof. The bottom and the longitudinal partition members carried thereby are swung upwardly to fully erected position in which position the top edge of the intermediate longitudinal partition member engages below the hinge connections for the end longitudinal partition members so that the load on the bottom is effectively translated to the walls.

The tongues 27 automatically spring into the slots 28 which prevents collapsing of the carton until these tongues are manually disengaged. The partition members are fixedly held in their erected position so that bottles or other objects can be easily inserted therein.

The securing of the end longitudinal partition members 4—4 together prevents any displacement thereof as the parts move to erected position.

The structure is formed of integral blank as shown in Fig. 2 which is suitably cut and scored as illustrated. Adhesive is applied as indicated and described. The blank is folded on the score lines 5 and the transverse partition sealing flaps adhered to inner sides of the side walls. The extension 23 is folded upon and adhered to intermediate longitudinal partition member which is then folded on the score 17 as is shown in Fig. 3. These folded parts are then folded on the fold lines or hinges 7 which secure the members 44 to each other. The bottom member 12 is folded upon and adhesively secured to the outer side of the bottom member 13 which brings the parts to position as shown in Fig. 4.

I have illustrated and described my invention in a highly practical embodiment thereof. I have not attempted to illustrate or describe certain embodiments of adaptations which I contemplate and which are possible as it is believed that this disclosure will enable those skilled in the art to embody or adapt my invention as may be desired.

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

1. A collapsible partitioned carton formed of integral

blank comprising side walls, complementary end wall members hingedly connected to the ends of the side walls, the said side walls and end wall members being in side by side relation in the blank and separated by a slit, pairs of end longitudinal partition members disposed side by side and hingedly connected to the inner edges of said end wall members and hingedly connected to each other at their upper edges, transverse partition members hingedly connected to inner edges of said end longitudinal partition members and provided with hinged flaps at their outer edges adhesively secured in spaced relation to the inner sides of the side walls, complementary bottom members hingedly connected to the bottom edges of said side walls, an intermediate longitudinal partition member hingedly connected to the inner edge of one of said bottom members and disposed with its ends between said pairs of end longitudinal partition members, said intermediate longitudinal partition member being of a width and length corresponding approximately to the side walls, the other bottom member having a hinged sealing flap on its inner edge adhesively secured to the bottom member to which said intermediate partition member is hingedly connected, a reinforcing extension hingedly connected to the upper edge of said intermediate longitudinal partition member and folded downwardly upon and secured thereto, said intermediate longitudinal partition member and its said extension having registering hand holes providing a handle for the carton, said transverse partition members having tongues on their inner edges, the said intermediate longitudinal partition member having spaced slots positioned to receive said tongues when the carton is erected, the reinforced upper edge of the intermediate longitudinal partition member being in supported engagement with the connected upper ends of said pairs of end longitudinal partition members when the carton is erected.

2. A collapsible partitioned carton formed of integral blank comprising side walls, complementary end wall members hingedly connected to the ends of the side walls, the said side walls and end wall members being in side by side relation in the blank and separated by a slit, pairs of end longitudinal partition members disposed side by side and hingedly connected to the inner edges of said end wall members and hingedly connected to each other at their upper edges, transverse partition members hingedly connected to inner edges of said end longitudinal partition members and provided with hinged flaps at their outer edges adhesively secured in spaced relation to the inner sides of the side walls, complementary bottom members hingedly connected to the bottom edges of said side walls, an intermediate longitudinal partition member hingedly connected to the inner edge of one of said bottom members and disposed with its ends between said pairs of end longitudinal partition members, the other bottom member having a hinged sealing flap on its inner edge adhesively secured to the bottom member to which said intermediate partition member is hingedly connected, said transverse partition members having tongues on their inner edges, the said intermediate longitudinal partition member having spaced slots positioned to receive said tongues when the carton is erected, the upper edge of the intermediate longitudinal partition member being in supported engagement with the connected upper ends of said pairs of end longitudinal partition members when the carton is erected.

3. A collapsible partitioned carton formed of integral blank comprising side walls, complementary end wall members hingedly connected to the ends of the side walls, the said side walls and end wall members being in side by side relation in the blank and separated by a slit, pairs of end longitudinal partition members disposed side by side and hingedly connected to the inner edges of said end wall members and hingedly connected to each other at their upper edges, transverse partition members hingedly connected to inner edges of said end longitudinal partition members and provided with hinged flaps at their outer edges adhesively secured in spaced relation to the inner sides of the side walls, complementary bottom members hingedly connected to the bottom edges of said side walls, an intermediate longitudinal partition member hingedly connected to the inner edge of one of said bottom members and disposed with its ends between said pairs of end longitudinal partition members, said intermediate longitudinal partition member being of a width and length corresponding approximately to the side walls, the other bottom member having a hinged sealing flap on its inner edge adhesively secured to the bottom member to which said intermediate partition member is hingedly connected, a reinforcing extension hingedly connected to the upper edge of said intermediate longitudinal partition member and folded downwardly upon and secured thereto, said intermediate longitudinal partition member and its said extension having registering hand holes providing a handle for the carton, the reinforced upper edge of the intermediate longitudinal partition member being in supported engagement with the connected upper ends of said pairs of end longitudinal partition members when the carton is erected.

4. A collapsible partitioned carton formed of integral blank comprising side walls, complementary end wall members hingedly connected to the ends of the side walls, the said side walls and end wall members being in side by side relation in the blank and separated by a slit, pairs of end longitudinal partition members disposed side by side and hingedly connected to the inner edges of said end wall members and hingedly connected to each other at their upper edges, transverse partition members hingedly connected to inner edges of said end longitudinal partition members and provided with hinged flaps at their outer edges adhesively secured in spaced relation to the inner sides of the side walls, complementary bottom members hingedly connected to the bottom edges of said side walls, an intermediate longitudinal partition member hingedly connected to the inner edge of one of said bottom members and disposed with its ends between said pairs of end longitudinal partition members, said intermediate longitudinal partition member being of a width and length corresponding approximately to the side walls, the other bottom member having a hinged sealing flap on its inner edge adhesively secured to the bottom member to which said intermediate partition member is hingedly connected, a reinforcing extension hingedly connected to the upper edge of said intermediate longitudinal partition member and folded downwardly upon and secured thereto, said intermediate longitudinal partition member and its said extension having registering hand holes providing a handle for the carton, the reinforced upper edge of the intermediate longitudinal partition member being in supported engagement with the connected upper ends of said pairs of end longitudinal partition members when the carton is erected.

5. A collapsible partitioned carton comprising side walls, complementary end wall members hingedly connected to the ends of the side walls, pairs of end longitudinal partition members disposed side by side and hingedly connected to the inner edges of said end wall members and hingedly connected to each other at their upper edges, transverse partition members hingedly connected to said end longitudinal partition members and hingedly connected at their outer edges to the side walls, complementary bottom members hingedly connected to the bottom edges of said side walls and to each other, an intermediate longitudinal partition member hingedly connected to the inner edge of one of said bottom members and disposed with its ends between said pairs of end longitudinal partition members, said intermediate longitudinal partition member being of a width and length corresponding approximately to the side walls, a reinforcing element on the upper end of said intermediate longitudinal partition member, said intermediate longitudinal partition member and its said reinforce thereof having registering hand holes providing a handle for the carton, said transverse partition members having tongues on their inner edges, the said intermediate longitudinal partition member having spaced slots positioned to receive said tongues when the carton is erected, the reinforced upper edge of the intermediate longitudinal partition member being in supported engagement with the connected upper ends of said pairs of end longitudinal partition members when the carton is erected.

6. A collapsible partitioned carton comprising side walls, complementary end wall members hingedly connected to the ends of the side walls, pairs of end longitudinal partition members disposed side by side and hingedly connected to the inner edges of said end wall members and hingedly connected to each other at their upper edges, transverse partition members hingedly connected to said end longitudinal partition members and hingedly connected at their outer edges to the side walls, complementary bottom members hingedly con-

nected to the bottom edges of said side walls, and to each other, an intermediate longitudinal partition member hingedly connected to the inner edge of one of said bottom members and disposed with its ends between said pairs of end longitudinal partition members, said transverse partition members having tongues on their inner edges, the said intermediate longitudinal partition member having spaced slots positioned to receive said tongues when the carton is erected, the upper edge of the intermediate longitudinal partition member being in supported engagement with the connected upper ends of said pairs of end longitudinal partition members when the carton is erected.

7. A collapsible partitioned carton comprising side walls, complementary end wall members hingedly connected to the ends of the side walls, pairs of end longitudinal partition members disposed side by side and hingedly connected to the inner edges of said end wall members and hingedly connected to each other at their upper edges, transverse partition members hingedly connected to said end longitudinal partition members and hingedly connected at their outer edges to the side walls, complementary bottom members hingedly connected to the bottom edges of said side walls and to each other, an intermediate longitudinal partition member hingedly connected to the inner edge of one of said bottom members and disposed with its ends between said pairs of end longitudinal partition members, said intermediate longitudinal partition member being of a width and length corresponding approximately to the side walls, a reinforcing element on the upper end of said intermediate longitudinal partition member, said intermediate longitudinal partition member and its said reinforcing element thereof having registering hand holes providing a handle for the carton, the reinforced upper edge of the intermediate longitudinal partition member being in supported engagement with the connected upper ends of said pairs of end longitudinal partition members when the carton is erected.

8. A collapsible partitioned carton comprising side walls, complementary end wall members hingedly connected to the ends of the side walls, pairs of end longitudinal partition members disposed side by side and hingedly connected to the inner edges of said end wall members and hingedly connected to each other at their upper edges, transverse partition members hingedly connected to said end longitudinal partition members and hingedly connected at their outer edges to the side walls, complementary bottom members hingedly connected to the bottom edges of said side walls and to each other, an intermediate longitudinal partition member hingedly connected to the inner edge of one of said bottom members and disposed with its ends between said pairs of end longitudinal partition members, said intermediate longitudinal partition member being of a width and length corresponding approximately to the side walls, a reinforcing element on the upper end of said intermediate longitudinal partition member, said intermediate longitudinal partition member and its said reinforcing element thereof having registering hand holes providing a handle for the carton, the reinforced upper edge of the intermediate longitudinal partition member being in supported engagement with the connected upper ends of said pairs of end longitudinal partition members when the carton is erected.

9. A collapsible partitioned carton comprising side walls, complementary end wall members hingedly connected to the ends of the side walls, pairs of end longitudinal partition members disposed side by side and hingedly connected to the inner edges of said end wall members, transverse partition members hingedly connected to said end longitudinal partition members and hingedly connected at their outer edges to the side walls, complementary bottom members hingedly connected to the bottom edges of said side walls and to each other, an intermediate longitudinal partition member hingedly connected to the inner edge of one of said bottom members and disposed with its ends between said pairs of end longitudinal partition members, said intermediate longitudinal partition member being of a width and length corresponding approximately to the side walls, a reinforcing element on the upper end of said intermediate longitudinal partition member, said intermediate longitudinal partition member and its said reinforcing element thereof having registering hand holes providing

a handle for the carton, said transverse partition members having tongues on their inner edges, the said intermediate longitudinal partition member having spaced slots positioned to receive said tongues when the carton is erected.

10. A collapsible partitioned carton comprising side walls, complementary end wall members hingedly connected to the ends of the side walls, pairs of end longitudinal partition members hingedly connected to the inner edges of the end wall member and to each other at the upper edges thereof and adjacent their outer edges and constituting connecting members for said side walls and end wall members, transverse partition members hingedly connected to the inner edges of said end longitudinal partition members and connected to the inner sides of the side walls in longitudinally spaced relation to each other, and complementary bottom members foldably connected to the bottom edges of the side walls and to each other, one of said bottom members having an intermediate longitudinal partition member connected thereto and disposed with its ends between said end longitudinal partition members when the carton is erected with its upper edge in supporting engagement with the connection therefor, said intermediate partition member being notched on its end edges to receive the said connections for the end longitudinal partition member adjacent their outer edges constituting a handle and having longitudinally spacing openings, said transverse partition members having tongues on their inner edges disposed in overlapping engagement with said openings and automatically engageable therewith when the carton is erected, the end wall members and bottom members being collapsible upon each other when the carton is collapsed so that the carton may be erected by thrust upon the outer edges of the collapsed end members.

11. A collapsible partitioned carton comprising side walls, complementary end wall members hingedly connected to the ends of the side walls, pairs of end longitudinal partition members hingedly connected to the inner edges of the end wall members and to each other at the upper edges thereof and constituting connecting members for said side walls and end wall members, transverse partition members hingedly connected to the inner edges of said end longitudinal partition members and connected to the inner sides of the side walls in longitudinally spaced relation to each other, and complementary bottom members foldably connected to the bottom edges of the side walls and to each other, one of said bottom members having an intermediate longitudinal partition member connected thereto and disposed with its ends between said end longitudinal partition members when the carton is erected with its upper edge in supporting engagement with the connection therefor, said intermediate partition member constituting a handle and having longitudinally spaced openings, said transverse partition members having tongues on their inner edges disposed in overlapping engagement with said openings and automatically engageable therewith when the carton is erected, the end wall members and bottom members being collapsible upon each other when the carton is collapsed so that the carton may be erected by thrust upon the outer edges of the collapsed end members.

12. A collapsible partitioned carton comprising side walls, complementary end wall members hingedly connected to the ends of the side walls, pairs of end longitudinal partition members hingedly connected to the inner edges of the end wall members and connected to each other at their upper and outer edges and constituting connecting members for said side walls and end wall members, transverse partition members hingedly connected to the inner edges of said end longitudinal partition members and connected to the inner sides of the side walls in longitudinally spaced relation to each other, and complementary bottom members foldably connected to the bottom edges of the side walls and to each other, one of said bottom members having an intermediate longitudinal partition member connected thereto and said end longitudinal partition members being connected to receive the ends of said intermediate member between them when the carton is erected, said intermediate partition member having longitudinally spaced openings, said transverse partition members having tongues on their inner edges disposed in overlapping engagement with said openings and automatically engageable therewith when the carton is erected, the end wall

members and bottom members being collapsible upon each other when the carton is collapsed so that the carton may be erected by thrust upon the outer edges of the collapsed end members.

13. A collapsible partitioned carton formed of an integral blank comprising side walls, complementary end wall members hingedly connected to the ends of the side walls, said side wall and end members being in side by side relation in the blank and separated by the slit, pairs of end longitudinal partition members hingedly connected to the inner edges of the side walls and hingedly connected to each other and constituting connecting members for said side walls and end wall members, transverse partition members hingedly connected to the inner edges of said end longitudinal partition members and having hinged sealing flaps secured on the inner sides of the side walls in longitudinally spaced relation to each other, corresponding side walls, end wall members, end longitudinal partition members, transverse partition members and their said sealing flaps being aligned longitudinally of the blank, and complementary bottom members foldably connected to the bottom edges of the side walls and to each other, one of said bottom members having an intermediate longitudinal partition member integrally and hingedly connected to its inner edge and disposed with its ends between said end longitudinal partition members when carton is erected with its upper edge in supporting engagement with the connection therefor, said side walls, bottom members and said intermediate longitudinal partition members being aligned transversely of the blank, said intermediate partition member constituting a handle and having longitudinally spaced openings, said transverse partition members having tongues on their inner edges disposed in overlapping engagement with said openings and automatically engageable therewith when the carton is erected, the end wall members and bottom members being collapsible upon each other when the carton is collapsed so that the carton may be erected by thrust upon the outer edges of the collapsed end members.

14. A collapsible partitioned carton formed of an integral blank comprising side walls, complementary end wall members hingedly connected to the ends of the side walls, said side wall and end members being in side by side relation in the blank and separated by a slit, pairs of end longitudinal partition members hingedly connected to the inner edges of the side walls and hingedly connected to each other and constituting connecting members for said side walls and end wall members, transverse partition members hingedly connected to the inner edges of said end longitudinal partition members and having hinged sealing flaps secured on the inner sides of the side walls in longitudinally spaced relation to each other, corresponding side walls, end wall members, end longitudinal partition members, transverse partition members and their said sealing flaps being aligned longitudinally of the blank, and complementary bottom members foldably connected to the bottom edges of the side walls and to each other, one of said bottom members having an intermediate longitudinal partition member integrally and hingedly connected to its inner edge and disposed with its ends between said end longitudinal partition members when the carton is erected with its upper edge in supporting engagement with the connection therefor, said side walls, bottom members and said intermediate longitudinal partition members being aligned transversely of the blank and automatically engageable therewith when the carton is erected, the end wall members and bottom members being collapsible upon each other when the carton is collapsed so that the carton may be erected by thrust upon the outer edges of the collapsed end members.

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