June 28, 1955 K. T. BUTTERY ET AL 2,711,844

COLLAPSIBLE PARTITIONED CARTON

Filed Nov. 13, 1951 3 Sheets-Sheet 1

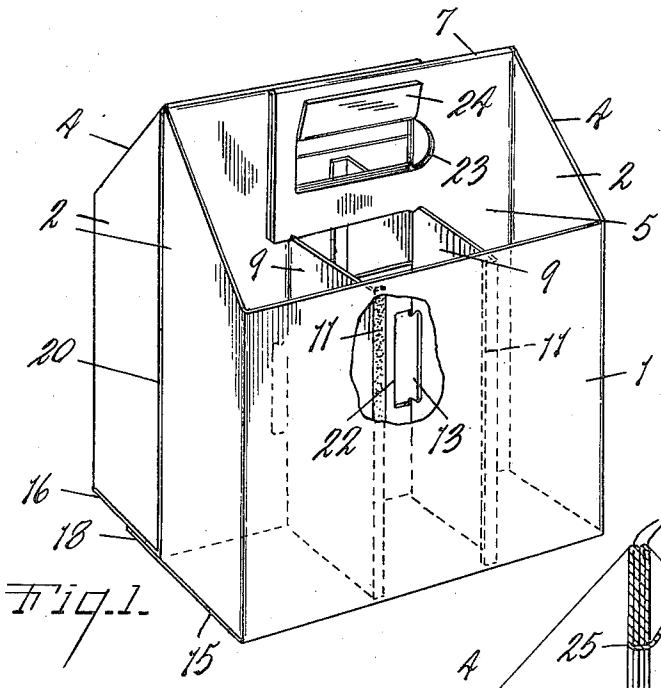


Fig. 1.

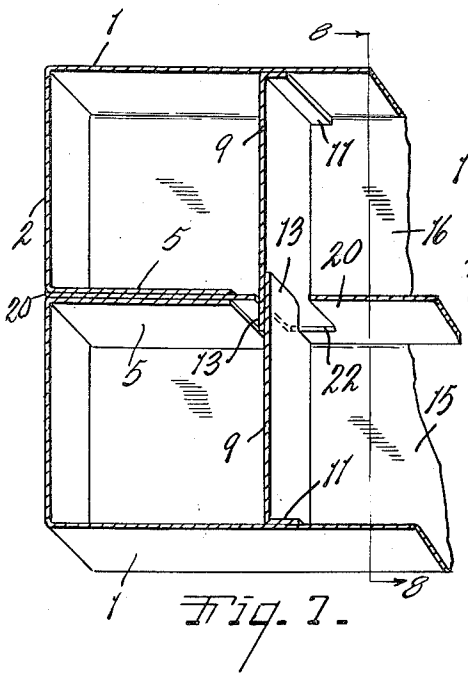


Fig. 7.

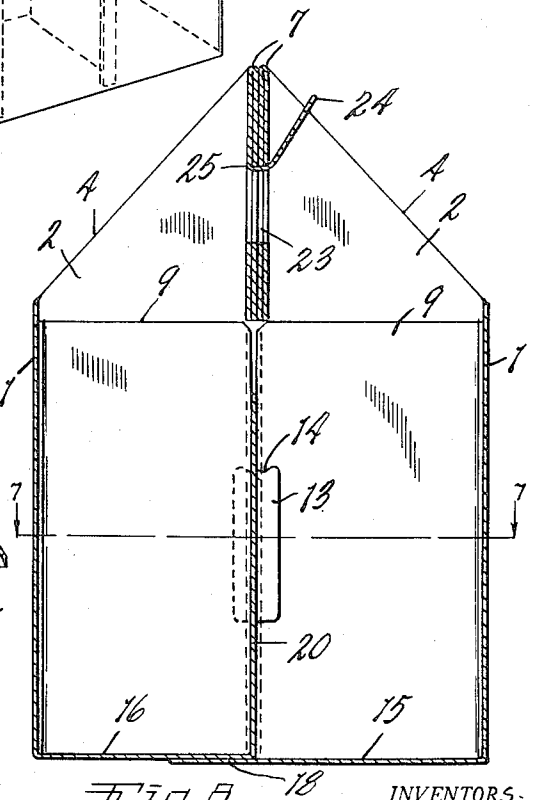


Fig. 8.

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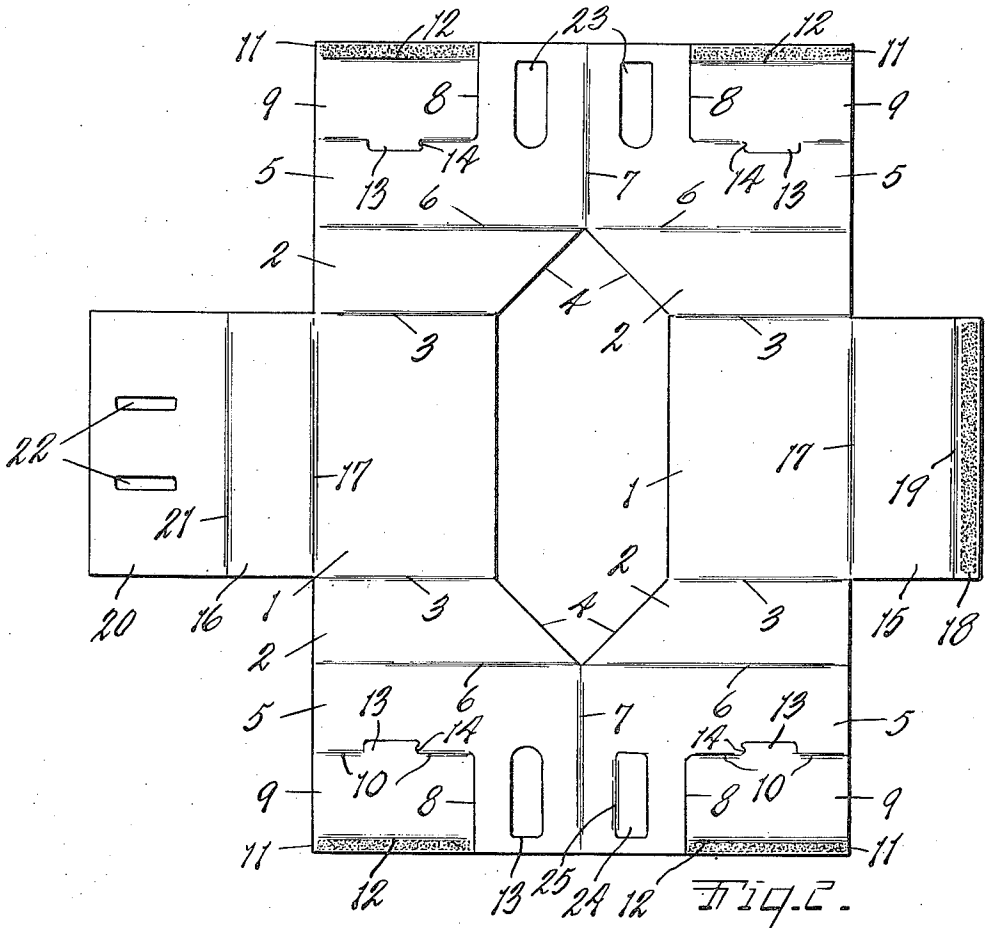


Fig. 4.

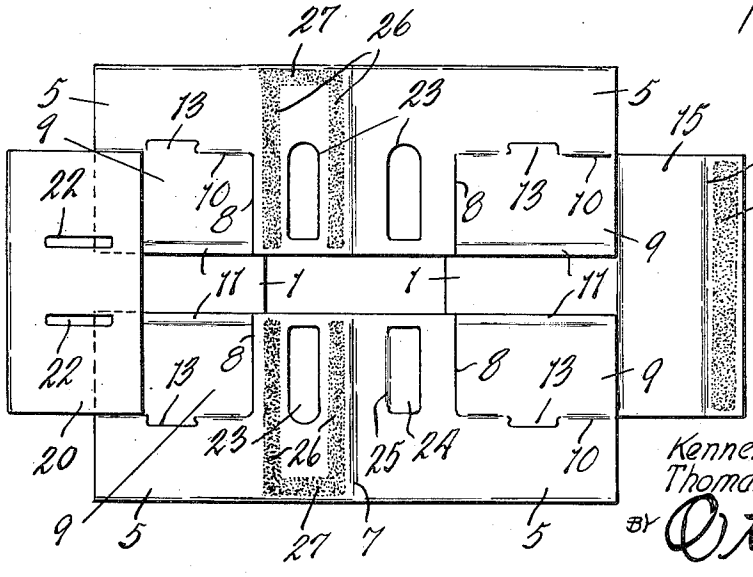


Fig. 5.

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COLLAPSIBLE PARTITIONED CARTON

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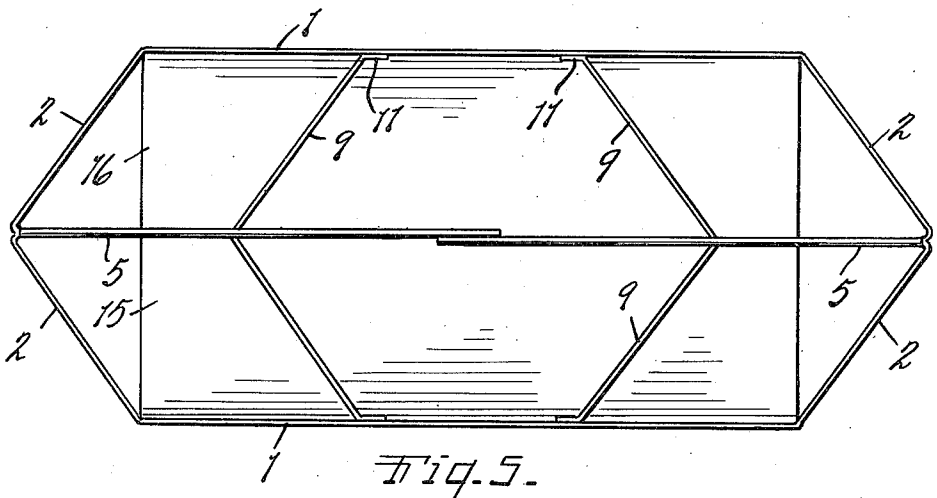


Fig. 5.

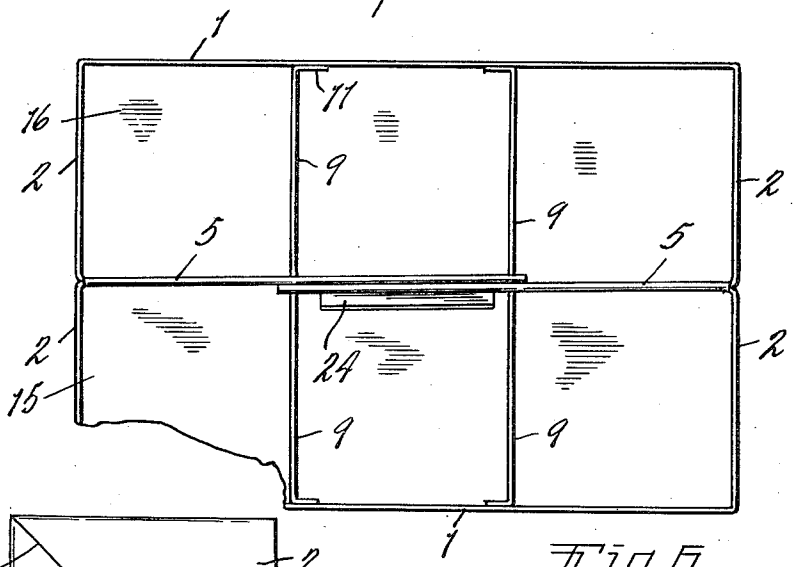


Fig. 6.

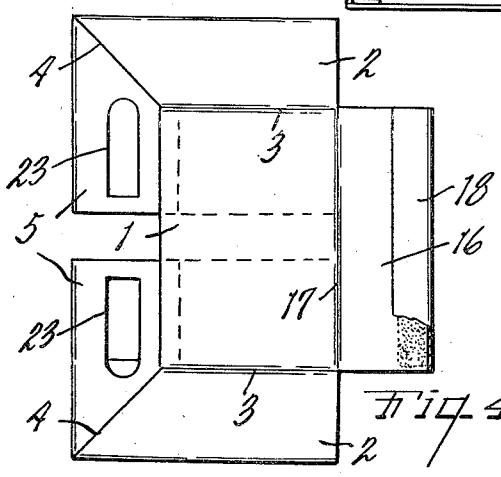


Fig. 4.

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2,711,844

COLLAPSIBLE PARTITIONED CARTON

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Application November 13, 1951, Serial No. 256,046

8 Claims. (Cl. 220—111)

This invention relates to improvements in a collapsible partitioned carton.

The main objects of this invention are:

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

Second, to provide a carton of this character which is strong and rigid when erected and well adapted as a bottle carrier or carrier for a plurality of relatively heavy articles.

Third, to provide a carton having these advantages which may be formed of an integral blank cut and scored and then folded to collapsed position by simple steps.

Fourth, to provide a structure having a handle portion well adapted to sustain the loads and which when grasped acts or serves to counteract stresses tending to collapse the carton.

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

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

Fig. 1 is a perspective view of a carton embodying the invention in erected position, a portion being broken away to disclose structural details.

Fig. 2 is a plan view of the blank in fully extended form, adhesive being conventionally illustrated as applied to certain of the areas.

Fig. 3 is a view of a partially folded blank, adhesive being conventionally illustrated as applied to certain of the areas.

Fig. 4 is a view of the completely folded blank or the carton in the knockdown, a part being broken away to show structural details.

Fig. 5 is a top view of the carton in partially erected position.

Fig. 6 is a fragmentary top view of the carton in fully erected position.

Fig. 7 is a fragmentary horizontal section somewhat in perspective on a line corresponding to line 7—7 of Fig. 8.

Fig. 8 is a vertical section on a line corresponding to line 8—8 of Fig. 7.

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 as the cartons may be of any desired shape and dimensions.

The carton of the invention as illustrated is formed of an integral blank shown or extended in the flat in Fig. 2 with adhesive applied to certain areas. The carton comprises side walls 1—1 and complementary end wall members 2—2 hingedly connected to the ends of the side walls at 3, the hinging being desirably in the form of scores. The carton illustrated is provided with side walls which, in the embodiment illustrated, are of less height than the longitudinal partition to better display the contents of the carton and to provide for convenient grasping of the handle portion of the longitudinal partition. To that end

the blank has a longitudinally extending cutout or opening between the side walls, the edges of the opening extending between the end walls and converging to provide the outwardly inclined edges 4 for the end wall members.

Pairs of longitudinal partition members 5 are hingedly connected to the swinging inner edges of the end walls at 6. The upper edges of the end longitudinal partition members are hingedly connected to each other at 7. The longitudinal partition members 5 have longitudinally extending slits 8 therein vertically spaced relative to their bottom edges and providing transverse partition members 9 which are hinged at 10 and provided with sealing flaps 11 hinged at 12. The transverse partition members are provided with tongues 13 extending from their inner edges beyond the hinges 10 thereof, the tongues having notches 14 in their upper edges.

Complementary bottom members 15 and 16 are hingedly secured to the bottom edges of the side walls at 17. The bottom member 15 is provided with a sealing flap 18 hinged at 19. This sealing flap is lapped upon and secured to the outer side of the bottom member 16. The bottom member 16 is provided with an intermediate longitudinal partition member 20 which is hinged thereto at 21. The hinge 21 is in alignment with the hinge 19 when the bottom members are connected. The longitudinal partition member 20 is disposed between the pairs of end longitudinal partition members 5 and has vertical slots 22 therein through which the tongues 13 project in overlapping relation, as shown in Fig. 7, when the carton is erected. The sealing flaps of the transverse partition are adhered in properly spaced relation to the inner sides of the side walls.

The longitudinal partition members are of such length that they overlap when in erected position. The overlapping portions have handholes 23 adapted to register when the carton is in fully erected position. One of the handholes is provided with a flap 24 hingedly connected to its upper edge at 25 and adapted to be disposed through the registering handholes as shown in Fig. 1. These coacting parts provide a handle which may be conveniently grasped and one which is very strong. The flap 24 serves the purpose of preventing any substantial collapsing racking movement of the carton and displacement of the partitions in their erected properly spaced relation. This facilitates the insertion of the bottles or other objects in the compartments. The flap also serves as a grip, that is, it provides a relatively smooth surface as compared to cut edges of the hand openings as best shown in Fig. 8 and reinforces the handle.

The hinge connections 7 at the upper edges of the longitudinal partition members provide rounded smooth surfaces for grasping as is shown in Figs. 1 and 8. The upper portions of the longitudinal partition members are preferably adhesively secured to each other by longitudinally extending strips of adhesive 26 above and below the handholes 23 and vertical strips 27. This adds to the rigidity of the erected structure and reinforces the load carrying portions thereof and facilitates the erection.

In erecting, the overlapping ends of the longitudinal partition members 5 automatically swing to overlapping position and as the intermediate longitudinal partition member is between the pairs of members 5, there are no projecting parts likely to engage during the erecting movement. The tongues 13 automatically swing or snap into the slots 22 in the intermediate longitudinal partition member, effectively locking or retaining the parts in erected position. As stated, it is only required that thrust be applied to the end edges of the collapsed carton, as shown in Fig. 4, to swing it to the completely erected position. The grip flap 24 may then be passed through the registering handholes 23 providing an effec-

tive handle and one which is very strong and capable of carrying heavy loads.

The carton of the invention is economical to produce as it may be formed of a single cut and scored blank, the parts of which can be readily folded and connected by simple gluing and folding operations.

We have illustrated and described our invention in a highly practical embodiment thereof. We have not attempted to illustrate or describe other embodiments or adaptations as we believe the disclosure made will enable those skilled in the art to embody or adapt the invention as may be desired.

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

1. A collapsible partitioned carton comprising side walls, complementary end wall members hingedly connected to the ends of the side walls, pairs of longitudinal partition members hingedly connected to the inner edges of said end wall members and hingedly connected to each other at their upper edges, the inner ends of said longitudinal partition members being in overlapping relation when the carton is in fully erected position, their overlapping portions having registering handhold openings therein, one member having a flap hinged to the upper edge of its handhold opening adapted to be disposed through the other registering handhold openings to provide a grip, said longitudinal partition members having longitudinal slits extending from their end edges in spaced relation to their bottom edges defining transverse partition members which are hingedly connected thereto and provided with hinged sealing flaps on their outer edges adhesively secured to the inner sides of the side walls and with tongues on their inner edges, complementary bottom members hingedly connected to the bottom edges of said side walls, one of said bottom members having a sealing flap hingedly connected to its inner edge and adhered to the outer side of the other bottom member, and an intermediate longitudinal partition member hingedly connected to the inner edge of said other bottom member and disposed between said pairs of end longitudinal partition members and having slots therein with which said tongues on said transverse partition members are engaged in overlapping relation when the carton is erected.

2. A collapsible partitioned carton comprising side walls, complementary end wall members hingedly connected to the ends of the side walls, pairs of longitudinal partition members hingedly connected to the inner edges of said end wall members and hingedly connected to each other at their upper edges, the inner ends of said longitudinal partition members being in overlapping relation when the carton is in fully erected position, their overlapping portions constituting a handle, said longitudinal partition members having longitudinal slits extending from their end edges in spaced relation to their bottom edges defining transverse partition members which are hingedly connected thereto and provided with hinged sealing flaps on their outer edges adhesively secured to the inner sides of the side walls and with tongues on their inner edges, complementary bottom members hingedly connected to the bottom edges of said side walls, one of said bottom members having a sealing flap hingedly connected to its inner edge and adhered to the outer side of the other bottom member, and an intermediate longitudinal partition member hingedly connected to the inner edge of said other bottom member and disposed between said pairs of end longitudinal partition members and having slots therein with which said tongues on said transverse partition members are engaged in overlapping relation when the carton is erected.

3. A collapsible partitioned carton comprising side walls, complementary end wall members hingedly connected to the ends of the side walls, pairs of longitudinal partition members hingedly connected to the inner edges of said end wall members and to each other, the inner ends of said longitudinal partition members overlapping when the carton is erected, their overlapping portions having registering handhold openings therein, one member having a flap hinged to the uper edge of its handhold opening adapted to be disposed through the other registering handhold openings, transverse partition members hingedly connected at their inner edges to said longitudinal partition members and provided with hinged flaps on their outer edges secured to the inner sides of the side walls and with tongues on their inner edges, complementary bottom members hingedly connected to the bottom edges of said side walls, one of said bottom members having a flap hingedly connected to its inner edge and secured to the outer side of the other bottom member, and an intermediate longitudinal partition member hingedly connected to the inner edge of said other bottom member and disposed between said pairs of end longitudinal partition members and having slots therein with which said tongues on said transverse partition members are engaged when the carton is erected.

4. A collapsible partitioned carton comprising side walls, complementary end wall members hingedly connected to the ends of the side walls, pairs of longitudinal partition members hingedly connected to the inner edges of said end wall members and to each other, the inner ends of said longitudinal partition members overlapping when the carton is erected, their overlapping portions constituting a handle, transverse partition members hingedly connected at their inner edges to said longitudinal partition members and provided with hinged flaps on their outer edges secured to the inner sides of the side walls and with tongues on their inner edges, complementary bottom members hingedly connected to the bottom edges of said side walls, one of said bottom members having a flap hingedly connected to its inner edge and secured to the outer side of the other bottom member, and an intermediate longitudinal partition member hingedly connected to the inner edge of said other bottom member and disposed between said pairs of end longitudinal partition members and having slots therein with which said tongues on said transverse partition members are engaged 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 longitudinal partition members hingedly connected to the inner edges of said end wall members and to each other, the inner ends of said longitudinal partition members overlapping when the carton is erected, their overlapping portions constituting a handle projecting above the side walls, transverse partition members hingedly connected at their inner edges to said longitudinal partition members and hingedly connected to the inner sides of the side walls and with tongues on their inner edges, complementary bottom members hingedly connected to the bottom edges of said side walls and to each other, and an intermediate longitudinal partition member hingedly connected to said bottom members and disposed between said pairs of end longitudinal partition members and having slots therein with which said tongues on said transverse partition members are engaged 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 longitudinal partition members hingedly connected to the inner edges of said end wall members and to each other, the inner ends of said longitudinal partition members overlapping when the carton is erected, transverse partition members hingedly connected at their inner edges to said longitudinal partition members and hingedly connected to the inner sides of the side walls and with tongues on their inner edges, complementary bottom members hingedly connected to the bottom edges of said side walls and to each other, and an intermediate longitudinal partition member hingedly connected to said bottom members and disposed between said pairs of end longitudinal partition members and having slots therein with which said tongues

on said transverse partition members are engaged 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 longitudinal partition members hingedly connected to the inner edges of said end wall members and hingedly connected to each other at their upper edges, the inner ends of the longitudinal partition members overlapping when the carton is erected, their overlapping portions having registering handhold openings therein, transverse partition members hingedly connected at their inner edges to said longitudinal partition members and provided with hinging flaps on their outer edges secured on the inner sides of the side walls and with tongues on their inner edges, complementary bottom members hingedly connected to the bottom edges of the side walls and to each other, and an intermediate longitudinal partition member hingedly connected to said bottom members at their inner edges and disposed between said pairs of longitudinal partition members and having slots therein with which said tongues on said transverse partition members are engaged when the carton is erected, said pairs of longitudinal partition members being adhesively connected to each other adjacent their outer edges and above and below said hand openings therein.

8. A collapsible partitioned carton comprising complementary end wall members hingedly connected to the ends of the side walls, pairs of longitudinal partition

members hingedly connected to the inner edges of said end wall members and hingedly connected to each other at their upper edges, the inner ends of the longitudinal partition members overlapping when the carton is erected and constituting a handle, transverse partition members hingedly connected at their inner edges to said longitudinal partition members and at their outer edges to the side walls and having tongues on their inner edges, complementary bottom members hingedly connected to the bottom edges of the side walls and to each other, and intermediate longitudinal partition members hingedly connected to said bottom members at their inner edges and disposed between said pairs of longitudinal partition members and having slots therein with which said tongues on said transverse partition members are engaged when the carton is erected, said pairs of longitudinal partition members being connected to each other adjacent their outer edges.

References Cited in the file of this patent

UNITED STATES PATENTS

2,304,683	Finn	Dec. 8, 1942
2,337,197	Holy	Dec. 21, 1943
2,395,711	Arnold	Feb. 26, 1946
2,433,676	Ringler	Dec. 30, 1947
2,532,446	Hall	Dec. 5, 1950
2,537,452	Forrer	Jan. 9, 1951
2,559,374	Ringler	July 3, 1951
2,584,658	Arneson	Feb. 5, 1952