Oct. 4, 1955 K. T. BUTTERY ET AL 2,719,650

COLLAPSIBLE PARTITIONED CARTON

Filed Sept. 21, 1951 3 Sheets-Sheet 1

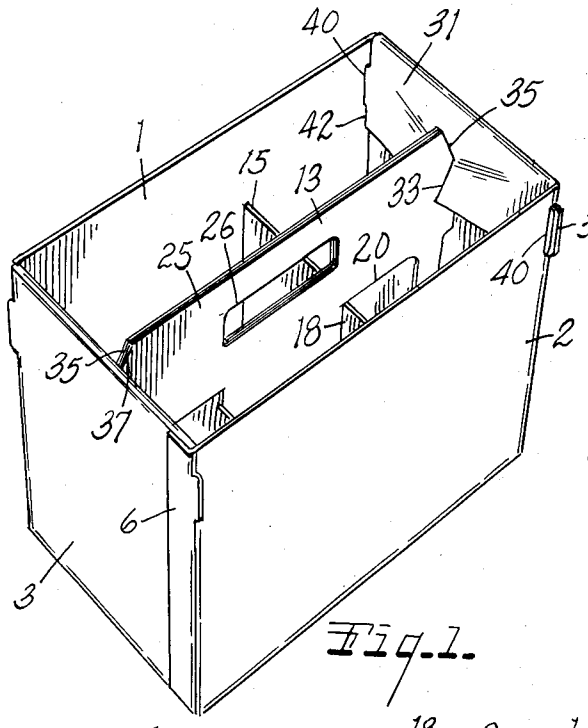


Fig. 1.

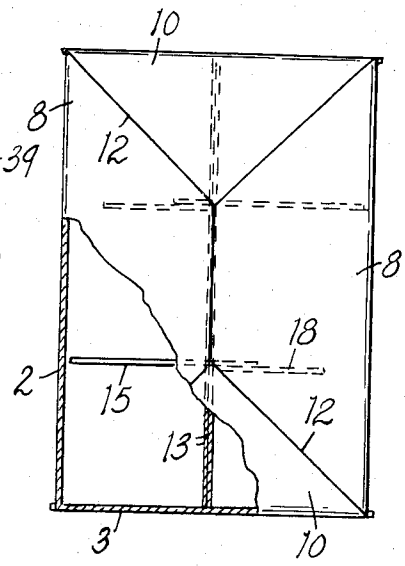


Fig. 3.

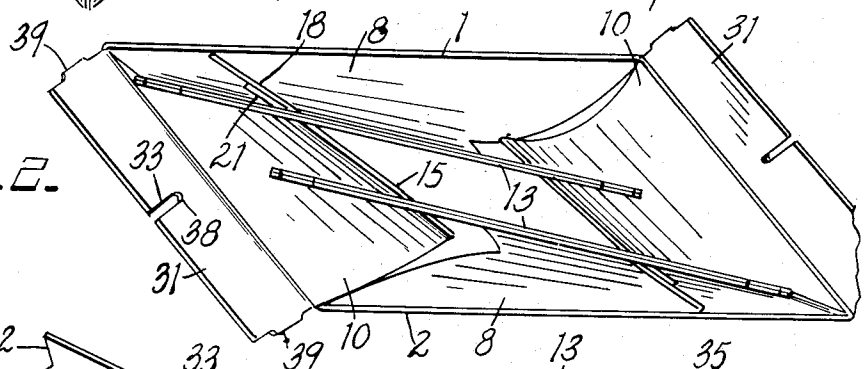


Fig. 2.

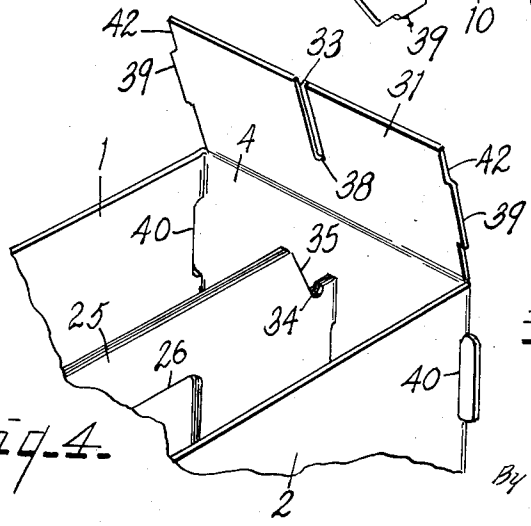


Fig. 4.

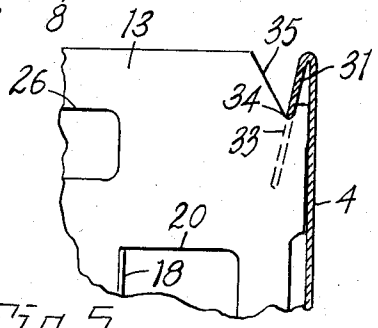


Fig. 5.

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COLLAPSIBLE PARTITIONED CARTON

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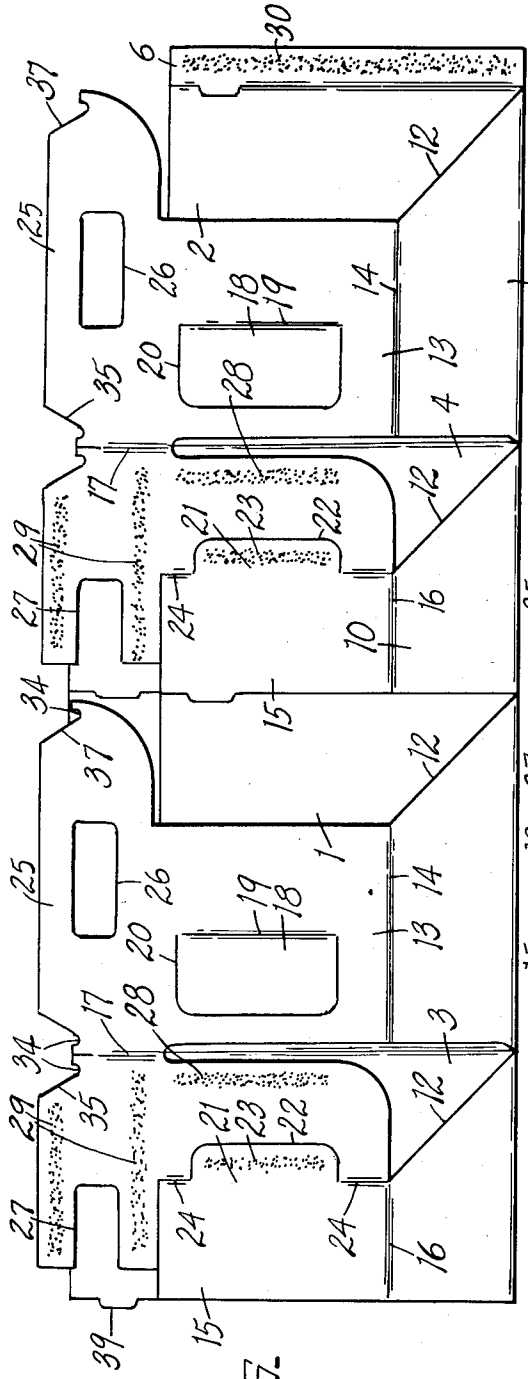


FIG. 6.

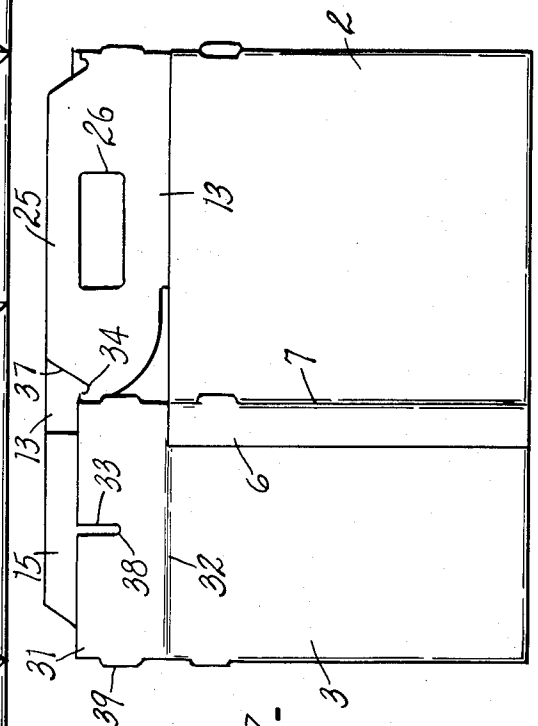


FIG. 7.

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COLLAPSIBLE PARTITIONED CARTON

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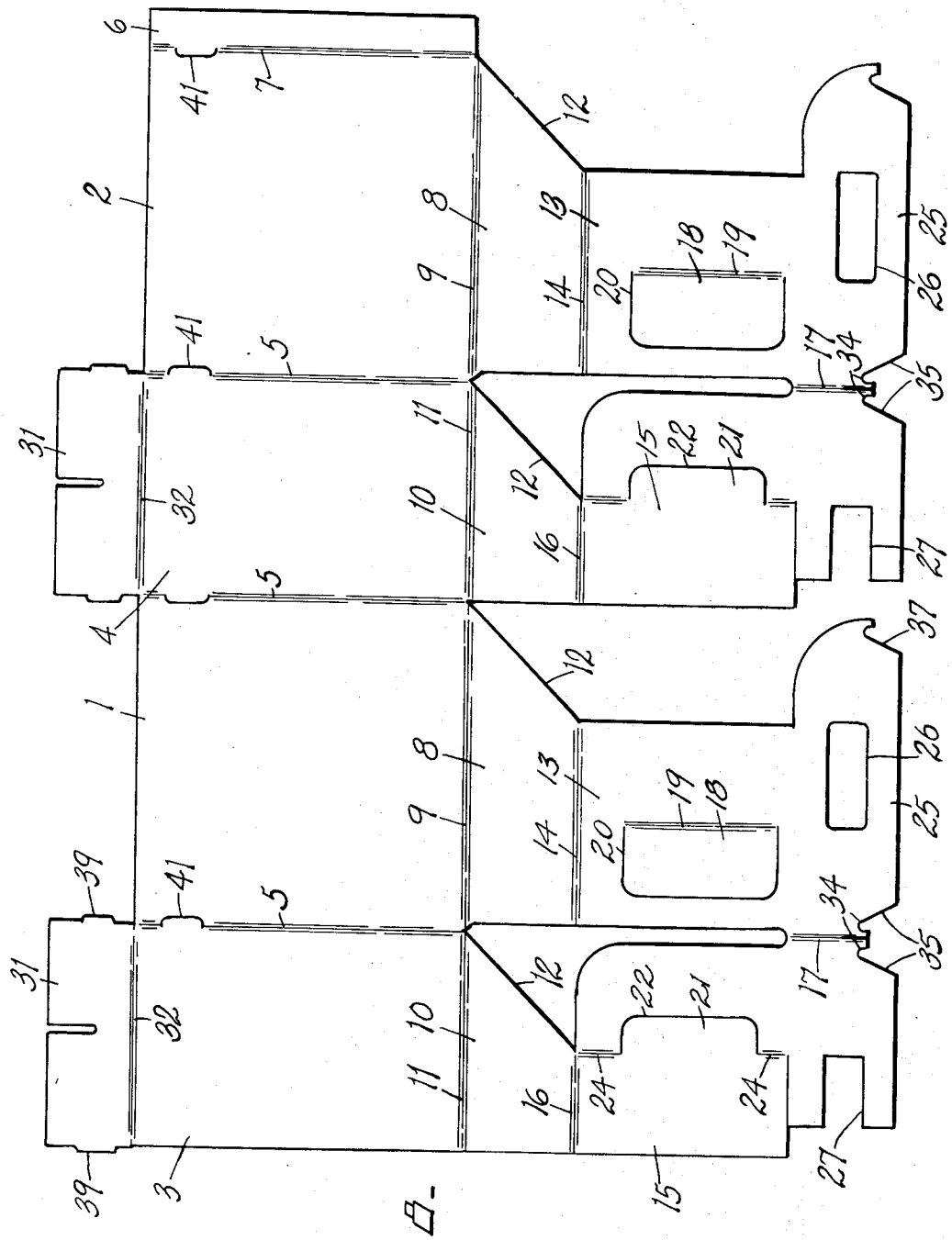


FIG. 8.

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2,719,650

COLLAPSIBLE PARTITIONED CARTON

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Application September 21, 1951, Serial No. 247,639

7 Claims. (Cl. 220—113)

This invention relates to improvements in a collapsible partitioned carton.

Our present invention is an adaptation of and an improvement upon the invention of our application for Letters Patent Serial No. 227,204, filed May 19, 1951.

The main objects of this invention are:

First, to provide a collapsible partitioned carton formed of an integral blank, which may be shipped and stored in collapsed condition and quickly erected and the parts securely locked or retained in erected position, requiring manual manipulation to release them to permit the carton being collapsed.

Second, to provide a partitioned carton which is well adapted for a carrying carton and is strong and rigid when erected.

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 the carton in fully erected position.

Fig. 2 is a top perspective view illustrating steps in the erection of the carton, one of the locking flaps being partially broken away.

Fig. 3 is a bottom view of the erected carton, parts being broken away to show structural details.

Fig. 4 is a fragmentary perspective view with the walls and partition in erected position prior to the engagement of the locking flap.

Fig. 5 is a fragmentary vertical longitudinal section of the erected carton illustrating certain details thereof.

Fig. 6 is a plan view of the blank partially folded and with adhesive indicated on certain areas thereof.

Fig. 7 is a side view of the collapsed carton.

Fig. 8 is a plan view of the blank.

In this specification and in certain of the claims the terms "side" and "end walls" are used for convenience in describing the parts. It will be understood that the carton may be square instead of elongated in horizontal section as in the embodiment shown.

The carton is formed of a single blank and comprises side walls **1** and **2** and end walls **3** and **4**, these walls being in alignment in the blank and hingedly connected by hinging scores as indicated at **5**. The side wall **2** is provided with a sealing flap **6** hingedly connected thereto at **7**. This sealing or glue flap **6** is lapped upon and secured to the wall **3** which results in a tubular collapsible body.

The side walls **1** and **2** are provided with bottom members **8** hingedly secured thereto at **9**. The walls **3** and **4** have bottom members **10** hingedly secured thereto at **11**. All of the bottom members preferably have inclined end edges **12** which facilitate the swinging of the walls to erected complementary position as shown in Fig. 3. The side bottom members have longitudinal partition members **13** hingedly secured at **14** to their swinging edges. The end bottom members **10** have partition members **15** hingedly secured to their swinging edges at **16**.

The adjacent pairs of longitudinal and transverse partition members **13** and **15** are foldably connected by the scores **17**. The longitudinal partition members have hinged or swingable transverse partition elements **18** hingedly connected thereto at **19**, these elements **18** being defined by laterally facing U-shaped cuts **20**. These cuts or slits **20** are spaced from the side and end edges of the longitudinal partition members. The transverse partition members **15** have glue tabs **21** defined by the U-shaped slits **22** which are spaced from the top, bottom and side edges of the transverse partition members and positioned so as to lap upon the transverse partition elements **18** when the pairs of transverse and longitudinal partition members are folded upon each other. The tabs **21** are connected to the transverse partition members **18** by adhesive as indicated at **23** in Fig. 6. The transverse partition members have hinging scores **24** extending from the ends of the tabs **21**.

The longitudinal partition members have handle portions **25** provided with openings **26**. The transverse partition members have slots **27** in upper handle portions thereof which align with the openings **26** when the pairs of transverse and longitudinal partition members are folded on their folding scores **17**. When the carton blank is completely folded to the collapsed position shown in Fig. 7 the pairs of longitudinal and transverse partition members are adhesively secured together. The adhesive is desirably positioned as indicated at **28** and **29** in Fig. 6. The adhesive on the glue flap **6** is indicated at **30** in Fig. 6. The bottom members and partition members are folded upwardly on the inner sides of the walls as indicated in Fig. 6 and the blank is folded to bring the pairs of transverse partition members into superimposed relation and the glue flap **6** secured to the outer side of the wall **3**. This positions the parts as shown in Fig. 7.

The end walls **3** are provided with locking flaps **31** hingedly secured to their upper edges as by the scores **32**. These locking flaps have slots **33** in their swinging edges adapted to receive the upper edges of the longitudinal partition members when the carton is erected as shown in Fig. 1. The longitudinal and transverse partition members have upwardly facing notches **34** opening at their folding edges or ends, the outer edges **35** of these notches being inclined upwardly. The longitudinal partition members have similar upwardly facing notches **37** in their opposite ends which notches align with the notches **34** when the carton is completely erected. The locking flaps **31** are on the walls which are transverse to the longitudinal partition members.

The carton is erected by pressing on the edges of the collapsed carton as illustrated in Fig. 7. This automatically swings the bottom and the partition members to erected position as shown in Fig. 4, an intermediate stage in erection being shown in Fig. 2. With the carton in the position shown in Fig. 4 the locking flaps are swung downwardly within the end walls as shown in Figs. 1 and 5 to engage them with the longitudinal partition members as shown in Figs. 1 and 5. The edges of the slots **33** engage the sides of the longitudinal partition member and the bottom edges **38** of the slots engage the bottoms of the notches **34**. This supports the longitudinal partition laterally and also prevents upward movement relative to the walls, that is, the flaps **31** serve as abutments to sustain the load on the partitions when the carton is carried by grasping the handle portions thereof. The carton is prevented from collapsing as in order to collapse the carton the bottom members must swing upwardly and that movement is prevented by the flaps **31**.

The flaps or locking members **31** have lugs **39** on the end edges thereof which engage in slots **40** formed in the side walls, these slots being desirably formed by U-shaped

slits 41 which extend to the hinging scores 5 and 7. The end edges 42 of the locking members 31 abut the inner sides of the side walls and constitute bracing members. These locking and bracing members not only prevent collapsing of the carton but add very substantially to the strength thereof and effectively support the partition members in the position to receive the contents such, for example, as bottles.

The structure illustrated has six compartments or cells. The load on the bottom members is supported by the partition members which are provided with a handle and as stated, the members 31 constitute abutments sustaining upward thrust of a load on the handle which is through the abutments or locking members partially transferred to the walls.

We have illustrated and described one very practical commercial embodiment of the invention. We have not attempted to illustrate or describe other embodiments or adaptations as we believe that this disclosure 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 a tubular body member having collapsible hingedly connected walls having bottom members hingedly connected to the bottom edges thereof, a partition member hingedly connected to the swinging edge of each of said bottom members, diagonally opposite pairs of the partition members being connected to each other and swingable to erected position when the walls of the body member are swung from collapsed to erected position, and locking flaps on the upper edges of opposed side walls swingable inwardly into engagement with the partition member disposed transversely thereto when the carton is erected, said locking flaps intermediate the ends thereof being inclined inwardly away from the opposed side walls to which they are connected, said partition member having notches in the upper edge thereof in spaced relation from the ends thereof for receiving the lower edges of the locking flaps for retaining the locking flaps in such inclined position, said locking flaps constituting abutments sustaining upward thrust of the partition member and supporting it laterally, said locking flaps having lugs on their end edges retainingly engageable with the walls disposed angularly to their ends and constituting bracing means for the erected walls.

2. A collapsible partitioned carton comprising a tubular body member having hingedly connected side and end walls, side and end bottom members hingedly connected to the bottom edges of the side and end walls, a partition member hingedly connected to the swinging edge of each of said bottom members, diagonally opposite pairs of the partition members being connected to each other side by side to constitute a unit, the partition members connected to the side bottom members constituting longitudinal partition members and having integral transverse partition elements hingedly connected thereto, the partition members connected to the end bottom members having longitudinal partition elements hingedly connected to their inner edges, which elements are hingedly connected to the longitudinal partition members, the end bottom partition members also having tabs projecting from their inner edges whereby when the walls are erected the partition members are automatically swung to erected position with the longitudinal partition members in side by side relation, the longitudinal partition members having upper portions of a length corresponding to the length of the side walls and abutting the end walls and having upwardly facing notches at their ends, and locking flaps on the upper edges of the end walls swingable inwardly and downwardly into engagement with said notches and in load sustaining engagement with said longitudinal partition members, said locking flaps being slotted to receive and laterally support longitudinal partition members with the locking flaps disposed in an inwardly inclined relation with their ends in abutting relation to the side walls, said locking flaps being provided with tongues on their ends, and said side walls having slots therein with which said tongues engage when the locking flaps are in erected position.

3. A collapsible partitioned carton comprising a tubular body member having hingedly connected side and end walls, side and end bottom members hingedly connected to the bottom edges of the side and end walls, a partition member hingedly connected to the swinging edge of each of said bottom members, diagonally opposite pairs of the partition members being connected to each other side by side to constitute a unit, the partition members connected to the side bottom members constituting longitudinal partition members and having integral transverse partition elements hingedly connected thereto, the partition members connected to the end bottom members having longitudinal partition elements hingedly connected to their inner edges, which elements are hingedly connected to the longitudinal partition members, the end bottom partition members also having tabs projecting from their inner edges whereby when the walls are erected the partition members are automatically swung to erected position with the longitudinal partition members in side by side relation, the longitudinal partition members having upwardly facing notches at their outer ends, and locking flaps on the upper edges of the end walls swingable inwardly and downwardly into engagement with said notches and in load sustaining engagement with said longitudinal partition members, said locking flaps being provided with tongues on their ends, and said side walls having slots therein with which said tongues engage when the locking flaps are in erected position.

4. A collapsible partitioned carton comprising a tubular body member having hingedly connected side and end walls, side and end bottom members hingedly connected to the bottom edges of the side and end walls, a partition member hingedly connected to the swinging edge of each of said bottom members, diagonally opposite pairs of the partition members being connected to each other side by side to constitute a unit, the partition members connected to the side bottom members constituting longitudinal partition members and having integral transverse partition elements hingedly connected thereto, the partition members connected to the end bottom members having longitudinal partition elements hingedly connected to their inner edges, which elements are hingedly connected to the longitudinal partition members, the end bottom partition members also having tabs projecting from their inner edges whereby when the walls are erected the partition members are automatically swung to erected position with the longitudinal partition members in side by side relation, the longitudinal partition members having upwardly facing notches at their outer ends, and locking flaps on the upper edges of the end walls swingable inwardly and downwardly into engagement with said notches and in load sustaining engagement with said longitudinal partition members.

5. A collapsible partitioned carton comprising a tubular body member having hingedly connected side and end walls, side and end bottom members hingedly connected to the bottom edges of the side and end walls, a partition member hingedly connected to the swinging edge of each of said bottom members, diagonally opposite pairs of the partition members being foldably connected to each other, the partition members connected to the side bottom members constituting longitudinal partition members and having integral transverse partition elements hingedly connected thereto, the partition members connected to the end bottom members having longitudinal partition elements hingedly connected to their inner edges, which elements are hingedly connected to the longitudinal partition members, the end bottom partition members also having tabs projecting from their

inner edges, the longitudinal partition members of the pairs being connected adjacent their upper ends for simultaneous actuation whereby when the walls are erected the partition members are automatically swung to erected position with the longitudinal partition members in side by side relation, and locking flaps on the upper edges of the end walls swingable inwardly and downwardly into load sustaining engagement with said longitudinal partition members, said locking flaps being slotted to receive and laterally support longitudinal partition members in side by side relation.

6. A collapsible partitioned carton comprising a tubular body member having hingedly connected side and end walls, side and end bottom members hingedly connected to the bottom edges of the side and end walls, a partition member hingedly connected to the swinging edge of each of said bottom members, diagonally opposite pairs of the partition members being foldably connected to each other, the partition members connected to the side bottom members constituting longitudinal partition members and having integral transverse partition elements hingedly connected thereto, the partition members connected to the end bottom members having longitudinal partition elements hingedly connected to their inner edges, which elements are hingedly connected to the longitudinal partition members, the end bottom partition members also having tabs projecting from their inner edges, the longitudinal partition members of the pairs being connected adjacent their upper ends for simultaneous actuation whereby when the walls are erected the partition members are automatically swung to erected position with the longitudinal partition members in side by side relation, and locking flaps on the upper edges of the end walls swingable inwardly and downwardly into load sustaining engagement with said longitudinal partition members.

7. A collapsible partitioned carton comprising a tubular body member having hingedly connected side and end walls, side and end bottom members hingedly connected to the bottom edges of the side and end walls, a partition member hingedly connected to the swinging edge of each of said bottom members, diagonally opposite pairs of the partition members being foldably connected to each other, the partition members connected to the side bottom members constituting longitudinal partition members and having integral transverse partition elements hingedly connected thereto, the partition members connected to the end bottom members having longitudinal partition elements hingedly connected to their inner edges, which elements are hingedly connected to the longitudinal partition members, the end bottom partition members also having tabs projecting from their inner edges, the longitudinal partition members of the pairs being connected adjacent their upper ends for simultaneous actuation whereby when the walls are erected the partition members are automatically swung to erected position with the longitudinal partition members in side by side relation with the transverse partition members in erected position.

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