Oct. 1, 1957 K. T. BUTTERY 2,808,177

COLLAPSIBLE MULTIPLE COMPARTMENT CARTON

Filed Sept. 30, 1955 3 Sheets-Sheet 1

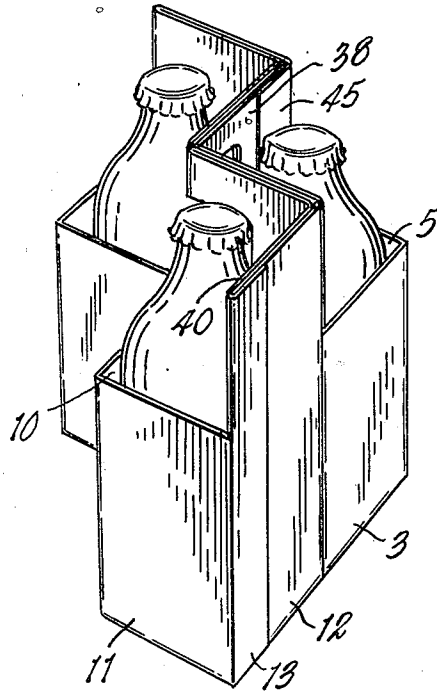


FIG. 1.

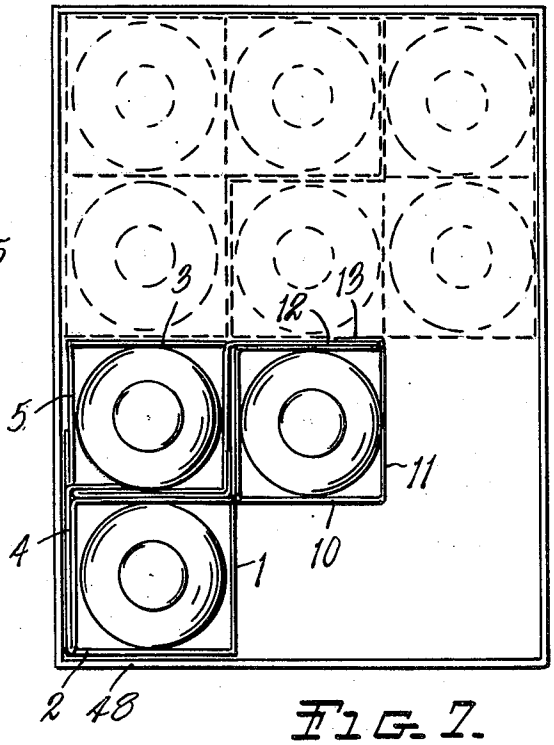


FIG. 7.

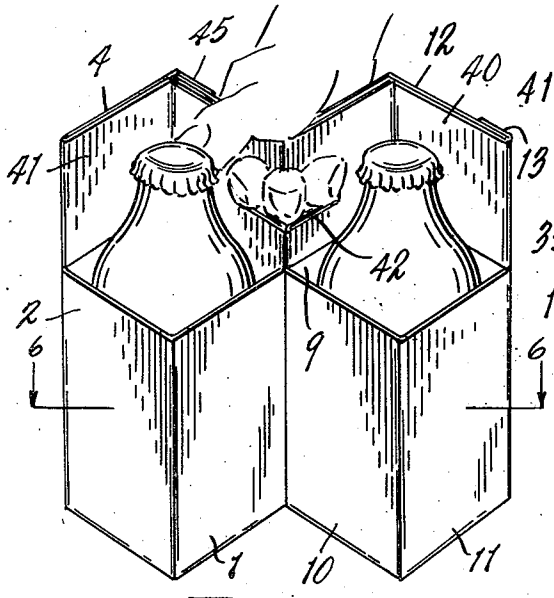


FIG. 2.

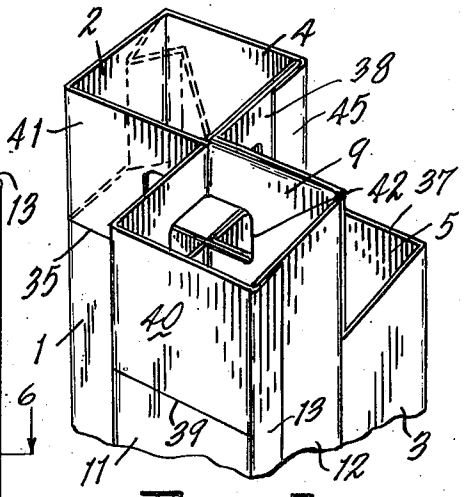


FIG. 3.

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COLLAPSIBLE MULTIPLE COMPARTMENT CARTON

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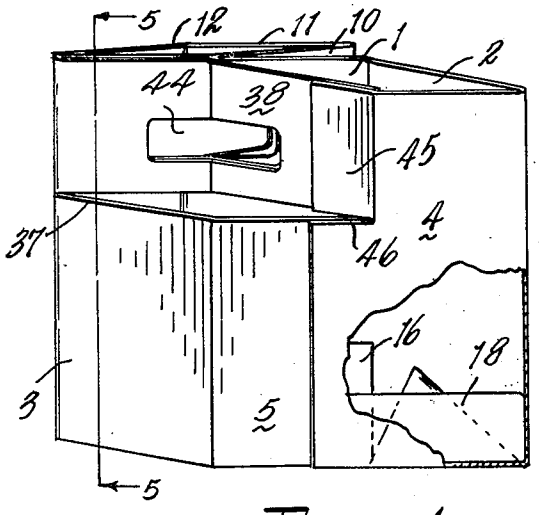


FIG. 4.

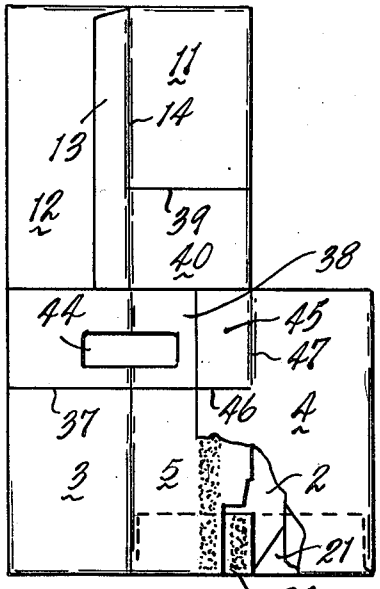


FIG. 11.

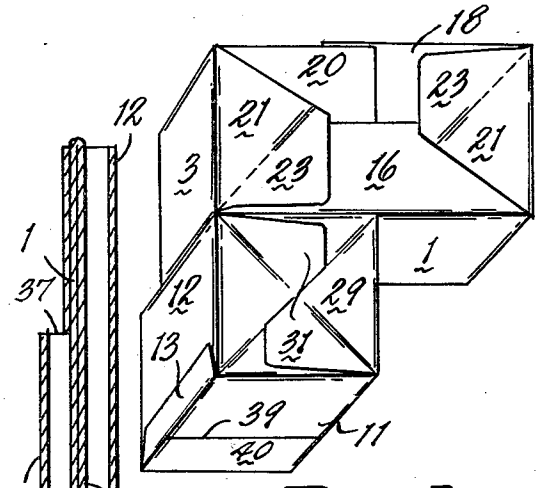


FIG. 8.

FIG. 5.

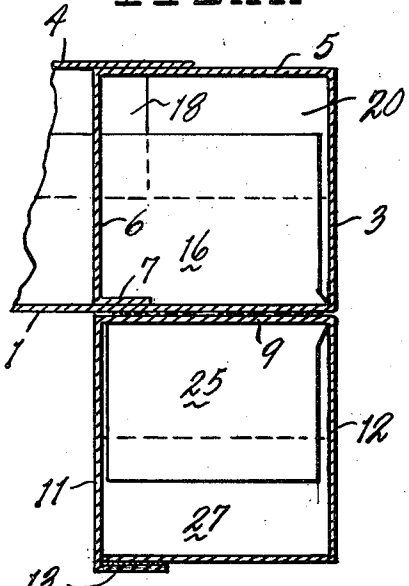


FIG. 6.

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COLLAPSIBLE MULTIPLE COMPARTMENT CARTON

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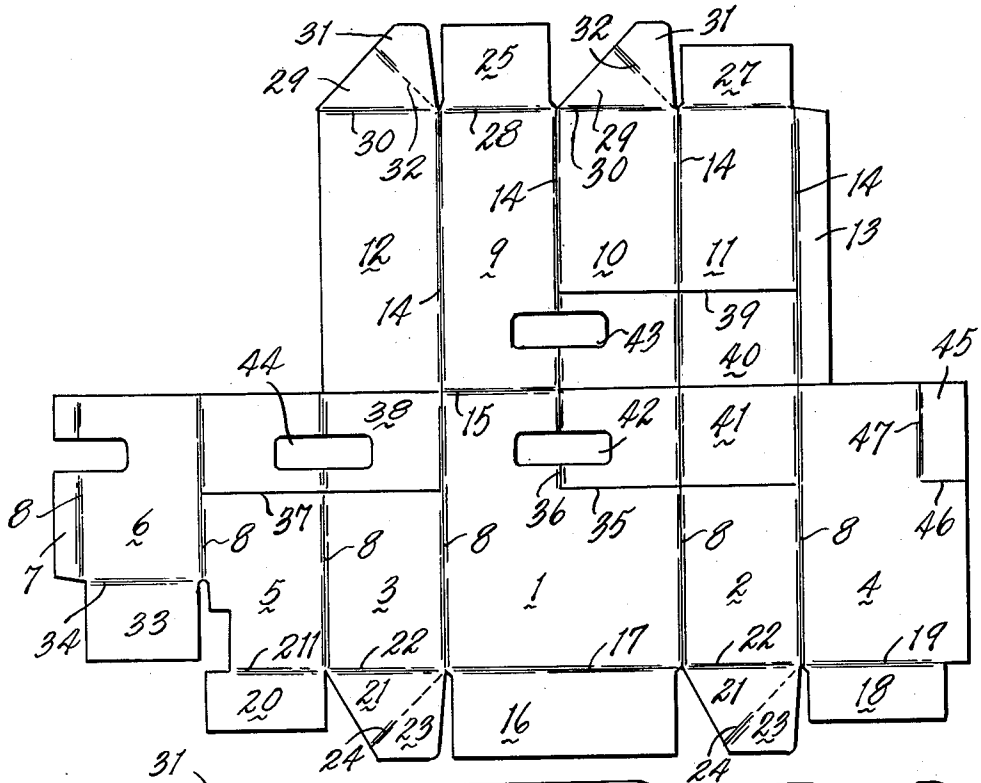


FIG. 9.

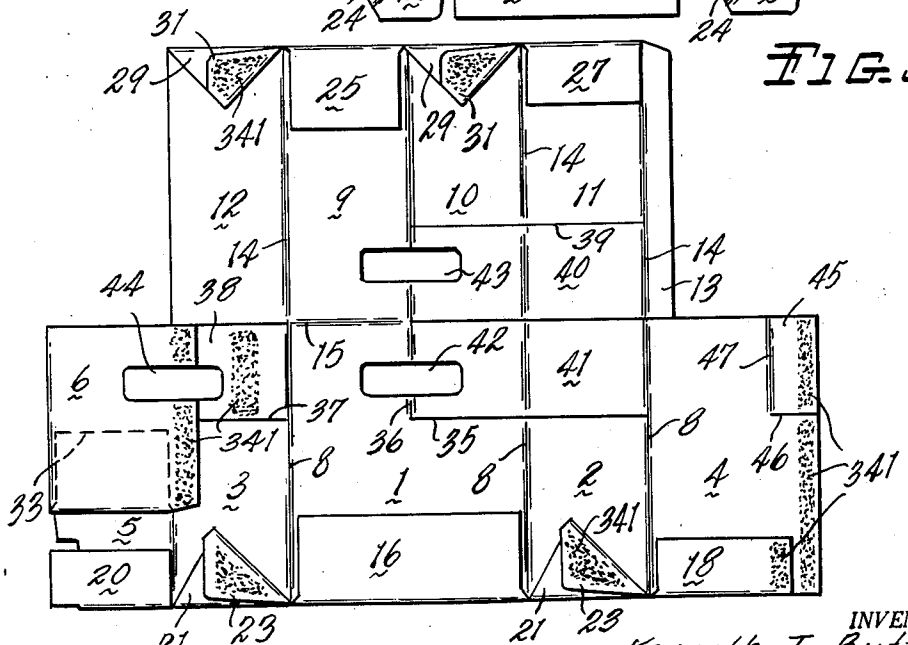


FIG. 10.

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2,808,177

COLLAPSIBLE MULTIPLE COMPARTMENT CARTON

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Application September 30, 1955, Serial No. 537,621

5 Claims. (Cl. 220—113)

This invention relates to a collapsible multiple compartment carrier carton.

The main objects of this invention are:

First, to provide a collapsible multiple compartment carrier carton which may desirably be formed of a single cut and scored paperboard blank and in which the gluing and folding operations may be formed by machinery.

Second, to provide a three compartment carton, the compartments of which when erected may be adjusted to an angular relation to facilitate loading and may be adjusted to a zigzag nested relation for convenience in carrying.

Third, to provide a three compartment carton having bottoms which are automatically positioned when the walls of the carton are erected.

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 filled carrier carton embodying my invention adjusted to carrying position.

Fig. 2 is a perspective view looking from the left of Fig. 1.

Fig. 3 is a perspective view illustrating certain of the steps in erecting the carton and adjusting the carton to the position shown in Figs. 1 and 2.

Fig. 4 is a fragmentary perspective view showing further details of the structure.

Fig. 5 is an enlarged fragmentary view on a line corresponding to line 5—5 of Fig. 4.

Fig. 6 is a fragmentary horizontal section with the compartments adjusted to angular relation.

Fig. 7 is a top plan view showing a plurality of the cartons and compartments arranged in angular relation and disposed in nested relation within a frame to facilitate loading; some of the containers being indicated by full lines and some by dotted lines, one carton being omitted from the frame to more clearly illustrate the nesting for filling.

Fig. 8 is a bottom perspective view showing the parts in erected position with the compartments in angular relation.

Fig. 9 is a plan view of the blank extended or in the flat.

Fig. 10 is a plan view of the blank partially folded to illustrate one partially folded position adapted to receive adhesive.

Fig. 11 is a view of a forming step following that shown in Fig. 10.

I have illustrated a three compartment embodiment of my invention. It is desired to point out, however, that certain features are desirable for embodiment in a two compartment carton.

In the embodiment illustrated the blank comprises a two compartment series of panels arranged in alignment and a one compartment series of panels disposed in parallel relation to the two compartment series as viewed in the blank. The two series of panels are hingedly connected to facilitate the folding of the blank to provide a collapsed three compartment structure which may be easily erected.

The two compartment series of panels comprises the outer wall panels **1**, **2**, **3**, **4** and **5** and the partition panel **6** all arranged in alignment and hingedly connected by the vertical hinging scores **8**. The partition panel **6** has a glue flap **7** hingedly connected thereto by a vertical hinging score **8**.

The one compartment series of panels comprise the panels **9**, **10**, **11** and **12**, the panel **11** having a sealing flap **13**. These panels and the sealing flap are hingedly connected by the vertical scores **14**. The panel **9** is connected to the panel **1** by the hinging score **15** which permits the panels **1** and **9** being folded into side by side relation and adhesively or otherwise fixedly secured to each other in side by side relation.

The panel **1** is of a width of two compartments, the panels **4** and **5** are complementary panels forming, when secured together, a wall opposed to the wall **1** and of a width corresponding thereto. The panels **2** and **3** constitute end walls. A two compartment bottom member **16** is hingedly secured to the bottom edge of the wall panel **1** at **17**. A bottom section **18** is hingedly secured to the lower edge of the wall panel **4** at **19**, and a complementary bottom section **20** is hingedly secured to the lower edge of the wall panel **5** at **211**. The bottom sections **18** and **20** are complementary and constitute, when secured together, a two compartment bottom member opposed to the bottom member **16** and overlapping therewith when the carton is erected.

The wall panels **2** and **3** which as stated constitute the outer end walls of the two compartments have triangular bottom members **21** hingedly secured thereto at **22**. These bottom members **21** have attaching flaps **23** hingedly connected thereto on the diagonal hinging lines **24**. One of these flaps **23** is secured to the underside of the two compartment bottom member **16**, the other is secured to the underside of the opposed two compartment bottom member constituted by the bottom sections **18** and **20**, see Fig. 8.

The one compartment series of panels also have an automatically erecting bottom comprising the bottom member **25** hingedly secured to the wall panel **9** at **28**. The wall panels **10** and **12** have triangular bottom members **29** hingedly secured thereto at **30**, these bottom members **29** having attaching flaps **31** hingedly secured thereto on the diagonal line **32**. One of these attaching flaps is secured to the bottom member **25** and the other to the bottom member **27**.

With this arrangement the bottoms are automatically erected when the walls of the compartments are erected. This type of automatically erecting bottom structure is, so far as the automatic erecting feature is concerned, substantially that of my Patent No. 2,677,495, issued May 4, 1954, and therefore is not further described.

In the folding of the blank the flap **7** of the partition member **6** is adhesively secured in a central position to the inner side of the two compartment wall panel **1**, it being connected by the hinging score **8** to the opposed two compartment wall panel constituted by the opposed panels **4** and **5**. In the embodiment illustrated, the partition panel **6** is provided with a bottom flap **33** hingedly connected thereto at **34**. This flap constitutes an extension for the partition member and may be folded down with its lower edge in engagement with the erected bottom which adds to the rigidity of the erected structure.

In folding the blanks, referring to Fig. 10, the bottom flaps are all folded inwardly upon their respective panels and the sealing flaps or attaching flaps **21** and **31** are folded upon their respective bottom members and the

partition panel 6 is folded upon the panel 5. Adhesive is then applied, and this may be done as a single operation, with the blank thus folded passing it through a gluing apparatus. The adhesive, indicated at 341, is applied to the several parts as shown in Fig. 10. The parts are then folded in proper sequence on the hinging score 8 connecting the panels 3 and 5 of the two compartment series of panels and on the hinging scores connecting the panels 1 and 2. At the same time the panel 12 of the one compartment series is folded on the score 14 connecting the panel 9 and the panel 11 is folded upon the panel 10 which brings the sealing flap 13 into lapping relation to the panel 12. This folding results in bringing the flap 7 of the partition panel into lapping relation to the wall panel 1, the bottom attaching flaps are lapped upon their bottom members. The wall panels 1 and 9 are then secured together preferably by adhesive.

To provide combined locking and handle members the panels 1 and 2 have a horizontal slit 35 extending from the hinging score connecting the panel 2 to the panel 4 to a hinging score 36 formed centrally of the panel 1 and extending from the slit 35 to the top of the panel. This provides a locking and handle member 41. The panels 3 and 5 have a horizontal slit 37 extending from the hinging connection of the panel 3 to the panel 1 to the hinging connection of the panel 5 to the partition panel 6. This provides a combined handle locking member 38.

The panels 10 and 11 of the one compartment series have a horizontal slit 39 extending from the hinging connection for the panel 10 to the panel 9 and for the panel 11 to the attaching flap 13, this providing a combined handle and locking member 40.

When the carton walls are erected the combined handle and locking members 38, 40 and 41, are all in the planes of the panels from which they are cut but they may be snapped or sprung into locking position as shown in Figs. 1 and 2 in which position they are collapsed and in effect serve as braces, it being necessary to spring them somewhat in adjusting from one position to the other as is indicated by dotted lines in Fig. 3.

Slot-like handholds 42, 43 and 44 are provided, the slot 44 extending across the hinging score of the member 38. The slots 42 and 43 extend across the hinge connections for the handle members 40 and 41 to the panels 1 and 9 respectively. All of the handhold slots register or substantially register when the carton is adjusted to carrying position, as shown in Figs. 1, 2 and 3. In this position the hand may be positioned as shown in Fig. 2. The handholds of the portions of the handles being gripped by the hand being angled which facilitates grasping. The panel 4 is provided with an attaching flap 45 formed by the slit 46 in the panel 4, the flap being hinged at 47. This flap is attached to the outer side of the handle member 38, see Figs. 1 and 3.

One advantage of the applicant's invention, as stated, is that the compartments may be adjusted to the position shown in Figs. 6 and 7, a plurality of the compartments being nested into a supporting crate 48 in which position the containers, bottles being represented in the drawing, may be simultaneously dropped into the compartments. The crate illustrated is adapted to receive four cartons. The cartons may be readily adjusted for carrying as desired. The resulting handle is very strong and does not project above the higher walls of the carton and at the same time may be readily grasped as is illustrated.

While the embodiment illustrated is a three compartment carton it is desired to point out that the structure is desirable for embodiment in a two compartment carton, that is, a carton made up of the two compartment series of panels. However, I have not illustrated such an adaptation as it is believed that it will be clearly understood from the disclosure. I have not illustrated other embodiments or adaptations which I contemplate as it is believed this disclosure will enable those skilled in the art to embody or adapt my invention as may be desired.

Having thus described the invention, what is claimed to be new and is desired to secure by Letters Patent is:

1. A collapsible carrier formed of an integral cut and scored blank, the carrier comprising three compartments adjustable when erected to a side by side angular relation or to a zigzag nested relation, the blank comprising a two compartment series of panels, and a one compartment series of panels, the adjacent panels of each series hingedly connected on their vertical edges, two panels of the two series being hingedly connected at their upper edges and folded upon each other and secured in side by side relation, the two compartment series of panels comprising five outer wall panels and a partition panel having an attaching flap connected to its outer edge, the central wall panel of the series being of the width of two compartments and being the panel to which the one compartment series is connected as aforesaid, the outer pair of the said five panels being adhesively secured together and constituting side walls of two compartments opposed to the aforesaid two compartment wall panel, the partition wall panel being hingedly connected to both of said two compartment wall panels, one end panel of said single compartment series having a hinged attaching flap secured to the other end panel of the series, aligned pairs of wall panels of the two series having horizontal slits spaced from their upper edges and extending thereacross and to their hinging connection providing adjustable handle and locking members, said members having registering slots which at one end extend into the walls of the two series which are secured together in side by side relation, a second pair of wall panels of the said two compartment series having a slit spaced from their upper edges and extending across their hinging connection to each other to provide an adjustable handle and locking member, said member being slotted to provide a handhold which slot registers with the before mentioned handhold slots when the compartments are arranged in zigzag relation with the said handhold and locking members adjusted to their locking position.

2. A collapsible carrier formed of an integral cut and scored blank, the carrier comprising three compartments adjustable when erected to a side by side angular relation or to a zigzag nested relation, the blank comprising a two compartment series of panels, and a one compartment series of panels, the adjacent panels of each series hingedly connected on their vertical edges, two panels of the two series being hingedly connected at their upper edges and folded upon each other and secured in side by side relation, the two compartment series of panels comprising five outer wall panels and a partition panel having an attaching flap connected to its outer edge, the central wall panel of the series being of the width of two compartments and being the panel to which the one compartment series is connected as aforesaid, the outer pair of the said five panels being adhesively secured together and constituting side walls of two compartments opposed to the aforesaid two compartment wall panel, the partition wall panel being hingedly connected to both of said two compartment wall panels, one end panel of said single compartment series having a hinged attaching flap secured to the other end panel of the series, aligned pairs of wall panels of the two series having horizontal slits spaced from their upper edges and extending thereacross and to their hinging connection providing adjustable locking members, a second pair of wall panels of the said two compartment series having a slit spaced from their upper edges and extending across their hinging connection to each other to provide an adjustable locking member.

3. A collapsible carrier formed of an integral cut and scored blank, the carrier comprising three compartments adjustable when erected to a side by side angular relation or to a zigzag nested relation, the blank comprising a two compartment series of panels, and a one compartment series of panels, the adjacent panels of each series hingedly connected on their vertical edges, two panels of the two

series being hingedly connected at their upper edges and folded upon each other and secured in side by side relation, the two compartment series of panels comprising five outer wall panels and a partition panel having an attaching flap connected to its outer edge and a bottom flap hingedly connected to its bottom edge, the central wall panel of the series being of the width of two compartments and being the panel to which the one compartment series is connected as aforesaid, the outer pair of the said five panels being adhesively secured together and constituting side walls of two compartments opposed to the aforesaid two compartment wall panel, the partition wall panel being hingedly connected to both of said two compartment wall panels, one end panel of said single compartment series having a hinged attaching flap secured to the other end panel of the series, aligned pairs of wall panels of the two series having horizontal slits spaced from their upper edges and extending thereacross and to their hinging connection providing adjustable locking members, and a second pair of wall panels of the said two compartment series having a slit spaced from their upper edges and extending across their hinging connection to each other to provide an adjustable locking member.

4. A collapsible carrier including three compartments adjustable when erected to a zigzag nested relation and comprising a two compartment series of hingedly connected panels, and a one compartment series of hingedly connected panels, two panels of the two series being secured together in side by side relation, the two compartment series of panels comprising five outer wall panels and a partition panel having an attaching flap connected to its outer edge, the central wall panel of the series being of the width of two compartments and being the panel to which the one panel of the one compartment series is connected, the outer pair of the said five panels being adhesively secured together and constituting side walls of two compartments opposed to the aforesaid two compartment wall panel, the partition wall panel being foldably connected to both of said two compartment wall panels, one end panel of said single compartment series having a hinged attaching flap secured to the other end panel of the series, aligned pairs of wall panels of the two series having horizontal slits spaced from their upper edges and extending thereacross and to their hinging connection providing adjustable handle and locking members, said members having registering slots which at one end extend into the walls of the two series which are secured together in side by side relation, a second pair of wall

panels of the said two compartment series having a slit spaced from their upper edges and extending across their hinging connection to each other to provide an adjustable handle and locking member, said member being slotted to provide a handhold which slot registers with the before mentioned handhold slots when the compartments are arranged in zigzag relation with the said handhold and locking members adjusted to their locking position.

5. A collapsible carrier including three compartments adjustable when erected to a zigzag nested relation and comprising a two compartment series of hingedly connected panels, and a one compartment series of hingedly connected panels, two panels of the two series being secured together in side by side relation, the two compartment series of panels comprising five outer wall panels and a partition panel having an attaching flap connected to its outer edge, the central wall panel of the series being of the width of two compartments and being the panel to which the one panel of the one compartment series is connected, the outer pair of the said five panels being adhesively secured together and constituting side walls of two compartments opposed to the aforesaid two compartment wall panel, the partition wall panel being foldably connected to both of said two compartment wall panels, one end panel of said single compartment series having a hinged attaching flap secured to the other end panel of the series, aligned pairs of wall panels of the two series having horizontal slits spaced from their upper edges and extending thereacross and to their hinging connection providing adjustable locking members, and a second pair of wall panels of the said two compartment series having a slit spaced from their upper edges and extending across their hinging connection to each other to provide an adjustable handle and locking member.

References Cited in the file of this patent

UNITED STATES PATENTS

1,151,821	Raynaud	Aug. 31, 1915
1,898,231	Weiss	Feb. 21, 1933
2,354,369	Gilbert	July 25, 1944
2,630,264	Holy	Mar. 3, 1953
2,693,297	Bolding	Nov. 2, 1954
2,706,037	Feigelman	Apr. 12, 1955
2,741,399	Arneson	Apr. 10, 1956
2,745,588	Dunning	May 15, 1956