July 2, 1957 R. GUYER ET AL 2,797,845

BOTTLE CARRIER

Filed July 9, 1951 3 Sheets-Sheet 1

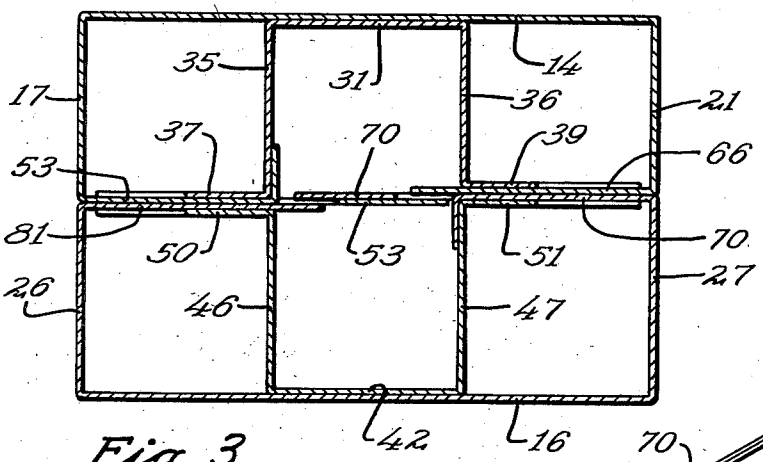


Fig. 3

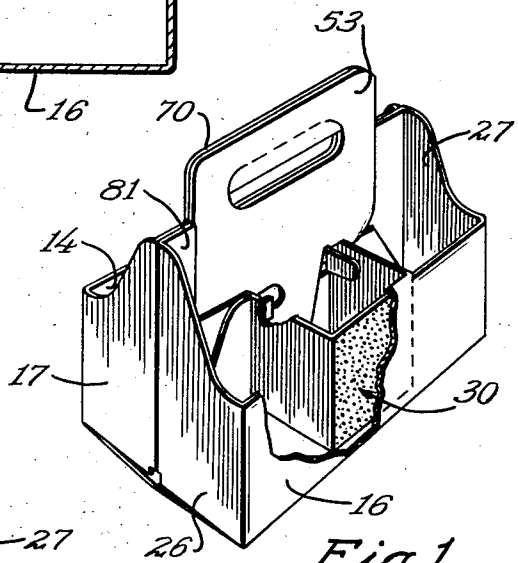


Fig. 1

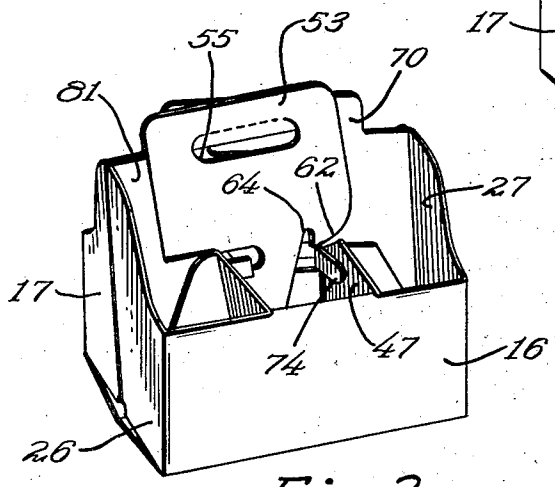


Fig. 2

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BOTTLE CARRIER

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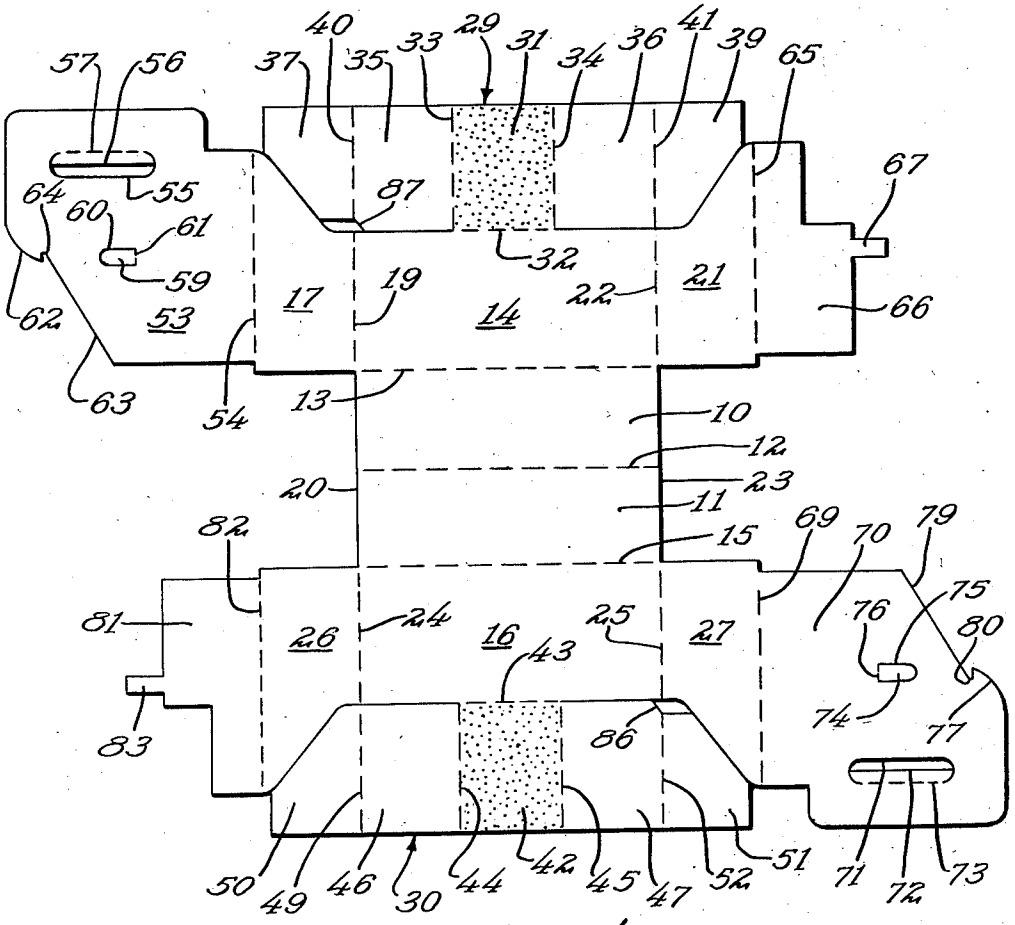


Fig. 4

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BOTTLE CARRIER

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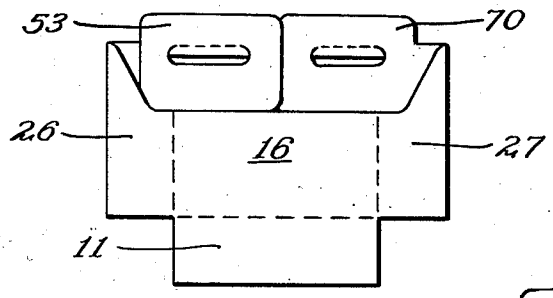


Fig. 7

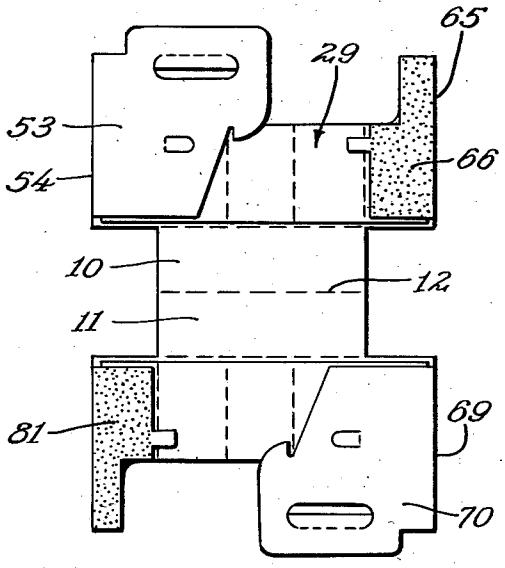


Fig. 6

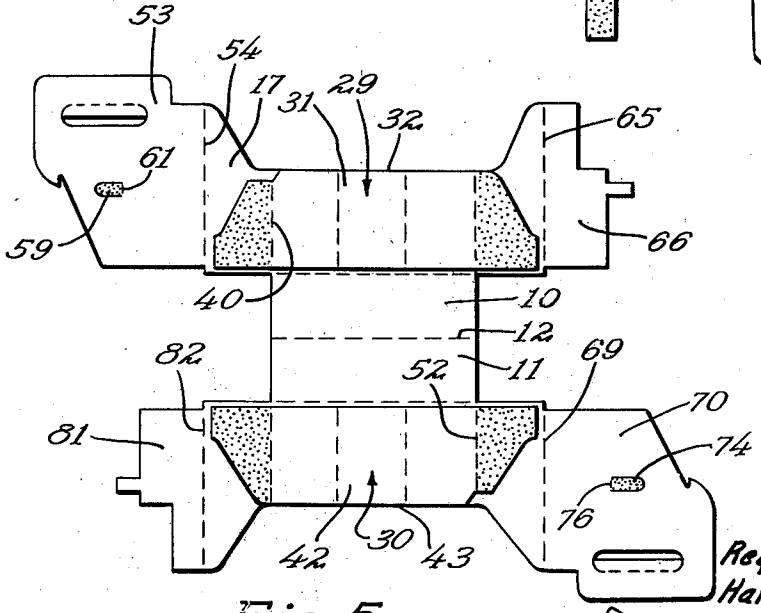


Fig. 5

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United States Patent Office

2,797,845

Patented July 2, 1957

2,797,845

BOTTLE CARRIER

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Application July 9, 1951, Serial No. 235,834

2 Claims. (Cl. 220—111)

This invention relates to an improvement in bottle carrier and deals particularly with a cellular carrier formed of paperboard, or similar material.

In recent years, it has become commonplace for producers to supply paperboard carriers designed to accommodate several bottles of a beverage or the like to encourage the purchase of this number of bottles simultaneously. Many such carriers are provided with partition forming elements designed to space the bottles contained. However, in most instances, these partitions do not extend the full depth of the carton and accordingly do not prevent the bottles from contacting one another. Many bottles used for containing beverages are decorative bottles, specially designed for the product and bottles of this type lose their transparency when struck together repeatedly. This difficulty is particularly disadvantageous when the bottles are used to contain a liquid which is relatively dark.

An object of the present invention lies in the provision of a simple bottle carrier which is provided with partitions extending the full length of the cells so that the bottles can not strike together. While the cells are usually not the full depth of the bottles they are sufficiently deep to prevent the various bottles from contacting one another.

An important feature of the present invention lies in the manner in which the carton is erected into open form. It is common practice for the manufacturer to glue the cartons in flat form and to ship them to the bottler in this condition. It is important that the bottler be able to erect the cartons into assembled open form with a minimum of time and effort. The present construction may be easily and quickly erected from flat form to open form.

A feature of the present invention lies in the provision of a bottle carrier having two central panel portions which are arranged in overlapping relation in flat condition and which slide relative to one another until these panels move into registry in open form of the carrier. By engaging opposite edges of the carton in flat form and pressing these edges together, the center panels forming the carton handles may be moved into registry to form a supporting portion of several thicknesses of paper stock.

A further feature of the present invention lies in the provision of a simple and effective means of locking the center panels of the carton in overlapped condition and in registry with one another. Hook means are provided on the central panels and these hook means engage over cooperable portions of the partition structure in erected condition of the carrier to hold the carton in open condition.

These and other objects and novel features of the present invention will be more clearly and fully set forth in the following specification and claims.

In the drawings forming a part of the specification:

Figure 1 is a perspective view of the carrier in open position, a portion of one wall thereof being broken away to disclose the interior construction.

Figure 2 is a perspective view of the carton in partially erected condition showing the manner in which the locks of the structure engage.

Figure 3 is a horizontal sectional view through the carton showing the relation of the various parts thereof when the carton is open.

Figure 4 is a diagrammatic view of the paperboard blank of which the carton is made.

Figure 5 is a diagrammatic view of the carton blank after the first folding operation is completed.

Figure 6 is a diagrammatic view of the blank after the second folding operation is completed.

Figure 7 is a diagrammatic view of the blank at the completion of the final folding operation, this view showing the completed carton in flat form.

The construction of the carton is best illustrated in Figure 4 of the drawings. In this view is illustrated a pair of bottom panels **10** and **11** which are centrally connected by a fold line **12**. The bottom panel **10** is connected along a fold line **13** to a wall panel **14**. The other bottom panel **11** is connected along a fold line **15** to the wall panel **16**. The wall panels **14** and **16** are substantially parallel in open condition of the carrier.

An end wall section **17** is connected to the wall panel **14** along a fold line **19**. This fold line being substantially aligned with one end **20** of the bottom panels **10** and **11**. A second end wall section **21** is connected to the panel **14** along a fold line **22**, this fold line **22** being substantially a continuation of the other end **23** of the bottom panels **10** and **11**. The end wall sections **17** and **21** are substantially equal in width to the bottom panels **10** and **11** so that each end wall section extends substantially half the distance between the parallel walls **14** and **16** when the carton is open.

The wall **16** is connected along parallel fold lines **24** and **25** to end wall section **26** and **27** respectively. As indicated in the drawings the end wall sections **17** and **27** are substantially identical while the diagonally opposed end wall sections **21** and **26** are also similar in form and shape.

A partition forming member **29** is foldably connected to the side wall **14**, while a similar partition forming element **30** is connected to the opposite side wall **16**. The partition forming section **29** includes a generally rectangular center portion **31** which is foldably connected along a fold line **32** to the center portion of the upper edge of the side wall **14**. Parallel fold lines **33** and **34** connect the center section **31** to partition walls **35** and **36** which are designed to connect the side wall **14** with the center partition elements which will be later described. Gluing tabs or flaps **37** and **39** are connected to the partition walls **35** and **36** respectively along parallel fold lines **40** and **41**.

The partition forming section **30** is generally similar to the section **29**. The section **30** includes a central portion **42** foldably connected along a fold line **43** to the upper edge of the side wall **16**. The center section **42** is connected along parallel fold lines **44** and **45** to partition walls **46** and **47** respectively. The partition wall **46** is foldably connected along the fold line **49** to a glue tab or flap **50**. A similar glue flap **51** is connected to the partition wall **47** along a fold line **52**.

The central partition forming elements are foldably connected to the end wall sections previously described. A partition panel **53** is foldably connected along the fold line **54** to the end wall section **17**. This panel **53** is provided with a hand hole **55** therein, this hole being shown having a flap **56** connected along one edge **57** to the panel. The panel **53** also includes a tab or tongue

59 defined by a U-shaped cut line 60 and a vertical fold line 61. The purpose of this tab will be later described.

The panel 53 is provided with a rounded hook shaped projection 62 between its upper and lower extremities, this projection 62 being spaced from the inclined edge line 63 by an upwardly projecting notch 64. This notch is designed to assist in locking the carton together in a manner which will be later described.

The end section 21 is connected along a fold line 65 to a partition forming member 66 which is cut relatively short in order to conserve on paper stock and also to prevent undue thickness of the carrier at the center partition panel. This member 66 is provided with a projecting tongue 67, the purpose of which will be later described. The end section 27 is connected along a fold line 69 to a center partition panel 70 which is identical with the panel 53. This panel 70 is provided with a hand hole 71 having a flap 72 hingedly connected by a fold line 73 to the partition panel. The hand holes 71 and 55 are designed to register in open position of the carton as will be later noted.

The panel 70 is provided with a tongue 74 defined by a U-shaped cut line 25 and a hinge line 76 connecting the ends of the cut line. The panel 70 is also provided with a hook shaped projection 77 on its free edge between the upper and lower edges of the panel. This projection 77 is spaced from the inclined edge line 79 by a locked notch 80.

An anchoring panel 81 is foldably connected along a fold line 82 to the end panel 76. This anchored panel 81 is provided with a projecting tongue 83 thereupon for a purpose which will be later described in detail.

In order that the construction be better disclosed the steps followed in gluing the carton are shown in Figures 4 through 7. In the first forming operation, adhesive is applied to the panels 31 and 42 and the entire partition forming sections 29 and 30 are then folded to overlie the adjoining portions of the carton as indicated in Fig. 5. In other words, the partition forming structures are folded along the fold lines 32 and 43 so that the center panels 31 and 42 overlie the center portions of the side walls 14 and 16 respectively. This action produces a double thickness center portion in the side walls 14 and 16 as can be noted in Figure 3 of the drawings. In the next forming operation the center partition forming elements are folded to overlie the adjoining portions of the carton structure. The partition panel 53 is folded along the fold line 54 to overlie portions of the end wall section 17, the wall 14 and corresponding portions of the partition forming section 29. The panel 66 is folded along the fold line 65 to overlie the adjoining carton portions. The panel 70 is folded along the fold line 69 to overlie the adjoining carton portions. The anchoring panel 81 is also folded along the fold line 82 to overlie the adjoining carton portions. When thus folded the carton blank is in the condition illustrated in Figure 6 of the drawings.

Adhesive is applied to the anchoring panels 66 and 81 and half of the carton is folded along the center fold line 12 to overlie the opposite portion thereof. In the drawings the bottom half of the carton blank, as viewed in Figure 6, is folded onto the upper half thereof, so that the carton blank assumes the form illustrated in Figure 7 of the drawings. In this condition the panel 11 overlies the bottom panel 10 and the anchoring panels 66 and 81 engage against and adhere to the opposite center partition panels 70 and 53 respectively.

In the second folding operation in which the carton is changed from the condition shown in Figure 5 to the condition shown in Figure 6, adhesive is applied to the tabs 59 and 74. These tabs are properly located so that the hinge lines 61 and 76 connecting these tabs to their respective panels are in registry with fold lines 40 and 52 of the partition forming sections 29 and 30. The purpose of these tabs is to provide a better surface for the hook shaped projections to ride during the forming

operation. However, this purpose will be more clearly apparent when the carton setting up operation is described.

When the carton has been completely glued and assumes the position illustrated in Figure 7 of the drawings, it may be packed or bundled and shipped for storage until it is desired for use. The partition panels 53 and 70 preferably overlap as shown to provide a guide during the carton erecting operation.

When it is desired to erect the carton, inward pressure is applied at opposite ends of the folded blank as it appears in Figure 7. This pressure causes the panels 53 and 70 to overlap to a greater extent. Simultaneously the end wall panels 17 and 26 at one end of the carton and end wall panels 21 and 27 at the opposite end of the carton hinge toward a common plane. This is also true of the bottom of the carton, the panels 10 and 11 hinging toward a common plane along the bottom of the carton.

When the end walls have been pressed inwardly the necessary extent, the hook shaped projection 62 of one partition panel 53 engages against the upper edge of the tab 74 glued to the partition panel 47 and also with the upper edge of the partition panel 47 at its point of juncture with the anchored flap 51 glued to the center panel 70. The tab 74 is not entirely essential to the construction, but is desirable in view of the fact that the projection 62 otherwise has a tendency to extend between the anchor flap 51 and the partition panel 70 to which it is glued. The projection 62 rides over the tab and partition panel 47 until the notch 64 registers with the upper edges of these elements. Thereupon the hook shaped projection drops downwardly behind the partition panel 47 to hold the carton in assembled form.

It is obvious that at the same time the projection 62 engages over the tab 74 and partition wall 47, the opposite hook shaped projection 77 of the panel 70 engages over the tab 59 and partition panel 35 to which it is secured. In order to insure engagement of the hook shaped projections with the partition panels 47 and 35, respectively, the upper edges of these panels are beveled at their inner ends as indicated at 86 and 87 respectively. Thus when the notches 64 and 80 are in engagement with these partition walls 47 and 35 respectively, the center partition forming panels 53 and 70 are held from separation.

Figure 2 shows the carton in almost open condition and shows the projection 62 of the partition panel 53 riding over the tab 74 and partition wall 47. After the ends of the carton have been forced inwardly a fraction of an inch beyond the position shown in Figure 2, the tab 74 and partition wall 47 are engaged in the notch 64. The projections 62 and 77 extend below the level of the upper edges of the partition walls over which they ride so that the carton is distorted slightly during the erecting process, as can be seen from the relative position of the center partition panels in Figure 2 of the drawings. When the carton is completely erect, it appears as indicated in Figure 1 of the drawings. It will be seen that in this drawing the central partition panels 53 and 70 are in side by side relation and in registry.

In accordance with the patent statutes, we have described the principles of construction and operation of our bottle carrier, and while we have endeavored to set forth the best embodiment thereof, we desired to have it understood that obvious changes may be made within the scope of the following claims without departing from the spirit of our invention.

We claim:

1. A bottle carrier including a pair of side walls, end wall sections foldably connected to said side walls and foldable from a position coplanar with the side wall to which they are attached to a position in angular relation thereto, a partition wall unit foldably connected to each end wall intermediate said side walls, the partition wall units being movable into overlapping relation when

said end wall sections are angularly related to their respective side walls, a partition wall connecting each side wall to each of said partition wall units, an anchoring flap on each partition wall adhered to a partition wall unit, the partition walls connected to each partition wall unit being substantially aligned when said end wall sections are angularly related to their side walls, a hook shaped projection on each partition wall unit engageable over one of the partition walls foldably connected to the other partition wall unit to hold said partition wall units in overlapping relation with the end wall sections angularly related to the respective side walls, and a tab on each partition wall unit adhered in surface contact with the said one partition wall attached thereto and overlying the area engaged by the hook shaped projection of the other partition wall unit, each tab extending across the plane of the adhesive contact between the anchoring flap of the partition wall to which it is adhered and its partition wall unit, whereby said tabs prevent said hook shaped projections from extending between the anchoring flaps and the partition wall units when said hook shaped projections are overlapped.

2. A bottle carrier including side walls, end wall sections foldably connected to opposite ends of said side walls, and partition panels foldably connected to the ends of said end wall sections intermediate said side walls, means adhering the partition panels at opposite ends of the carrier in surface contact, said end wall sections being foldable from a position substantially coplanar with said side walls and in whch the partition panels are between the side walls to a position in which the sections of each end wall are in coplanar relation, partition forming members extending from side wall to a partition panel, anchoring flaps foldably connected to the ends of said partition forming members each adhered to a partition panel, said partition panels overlapping when the sections of each end wall are substantially coplanar, cooperable means on two of said partition panels and two of said partition forming members to hold the partition panels in overlapping relation, and a tab foldably connected to each of said two partition panels and adhered in surface contact to the partition forming members connected thereto, said tabs overlying the area of engagement between these partition forming members and the cooperable means of the cooperable partition panel, said tabs extending across the plane of the adhesive connection between said two partition panels and the anchoring flaps attached to said two partition forming members when said end wall sections are coplanar, said tabs preventing the cooperable means of the cooperable partition panels from extending between the anchoring flaps on said partition forming members and the partition panels to which they are adhered.

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