

Jan. 16, 1962

H. W. FORRER

3,017,054

ARTICLE CARRIER

Filed Feb. 10, 1960

4 Sheets-Sheet 1

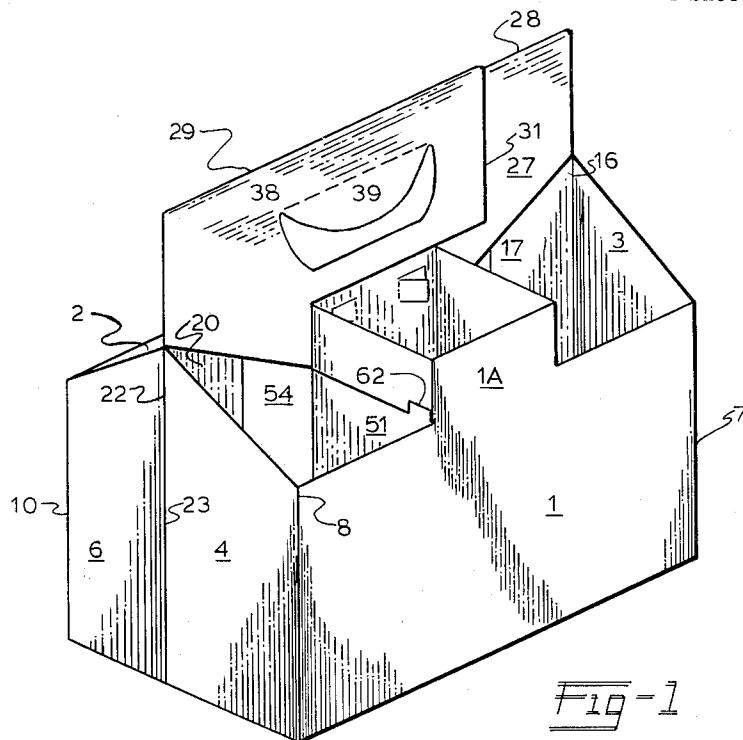


Fig-1

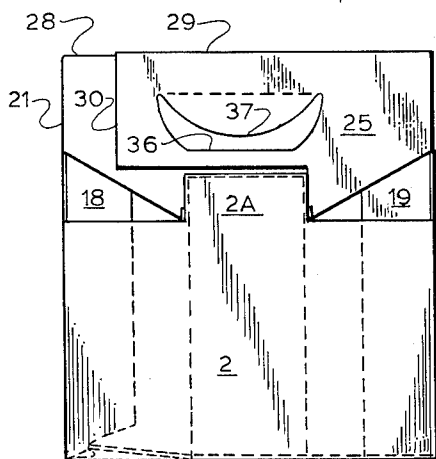


Fig-2

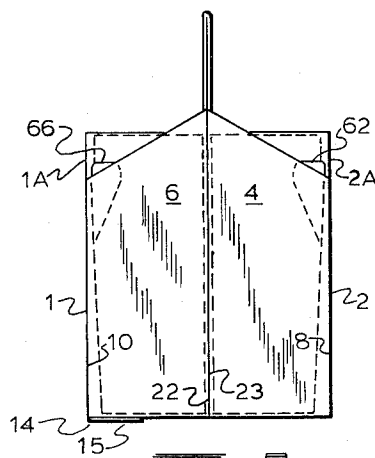


Fig-3

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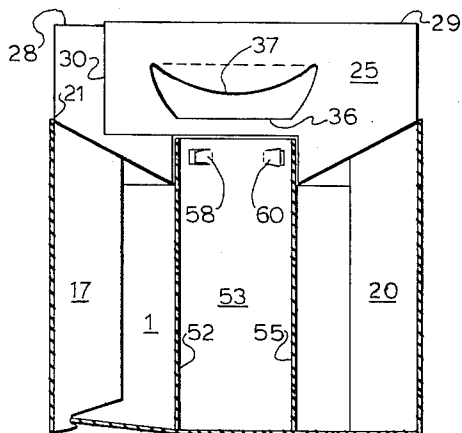


Fig. 5

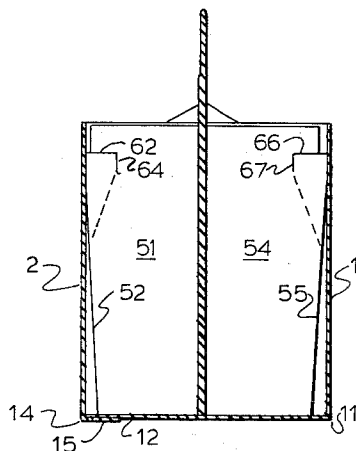


Fig. 6

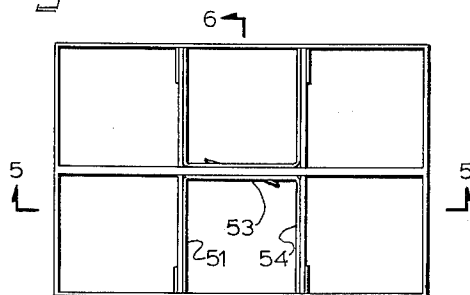


Fig. 4

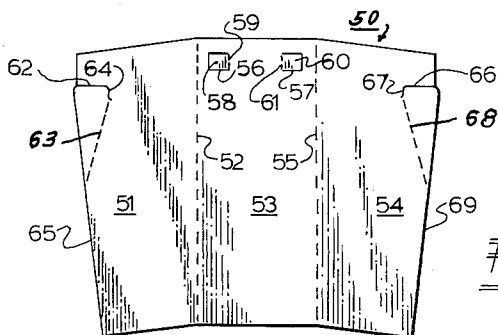


Fig. 7

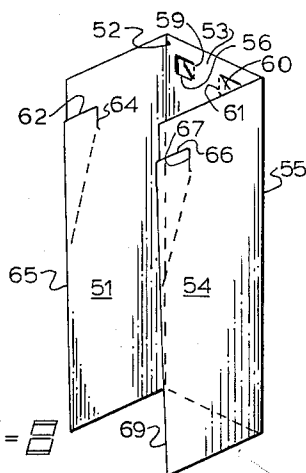


Fig. 8

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4 Sheets-Sheet 3

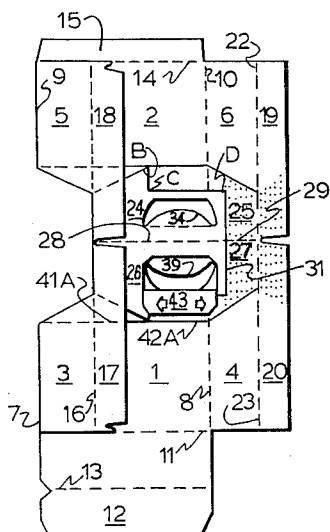
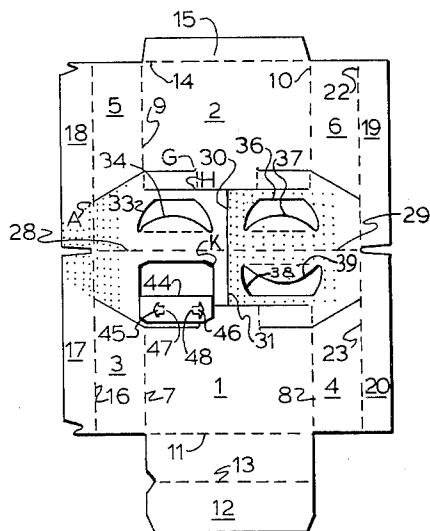
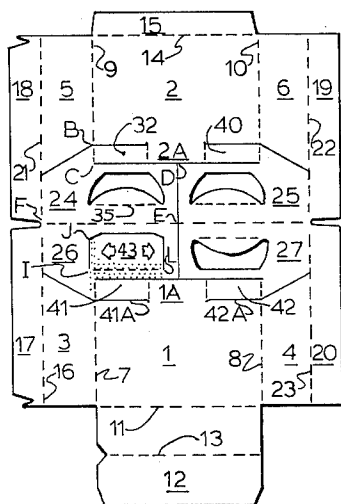


Fig - 11

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4 Sheets-Sheet 4

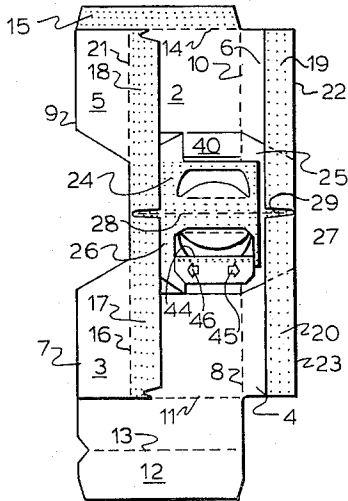


Fig-12

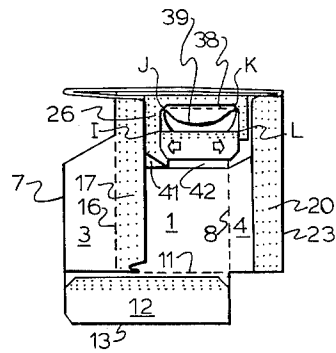


Fig-13

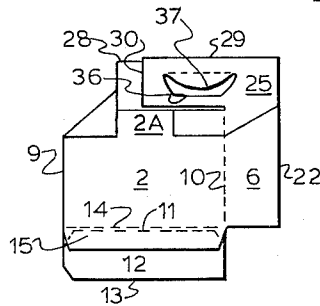


Fig-14

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3,017,054

ARTICLE CARRIER

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Filed Feb. 10, 1960, Ser. No. 7,820
2 Claims. (Cl. 220-113)

This invention relates to article carriers and more particularly to an article carrier having shallow, medial and transverse partitioning elements and being adapted for receiving separately insertable partitioning elements for substantially increasing the depth of either or both the medial and the transverse partitioning elements thereby to provide additional protection between adjacent articles packaged in the carrier.

In my Patent 2,537,452 issued January 9, 1951, and owned by the assignee of this invention, a sturdy and reliable carrier is disclosed which is constructed of a single paperboard blank and which is specially adapted to keep board waste at a minimum. This type of carrier can be manufactured in quantity at reasonable cost and is particularly suited for use with certain articles to be packaged such, for example, as soft drinks, and is commonly referred to as a "strap" style carrier due to the shallowness of its transverse partitions.

In my Patent 2,688,421 granted September 7, 1954, and owned by the assignee of this invention, a carton is disclosed and claimed which is somewhat similar to the carrier disclosed and claimed in Patent 2,537,452. The carrier of Patent 2,688,421 however is of the type wherein the medial and transverse partitions are substantially co-extensive with the carrier side walls and is therefore commonly known as a "full depth" type of carrier. As will be readily apparent, the so-called full depth carrier is of a more rugged construction than the so-called "strap" style carrier and naturally is more costly to manufacture.

I have found that the additional material required to make a full depth carton according to my above mentioned Patent 2,688,421 is needed primarily for its partitioning function and only secondarily to afford strength and rigidity to the structural support elements of the carrier. Stated otherwise, the carrier of my Patent 2,537,452 can be constructed generally along the lines of my Patent 2,776,072 issued January 1, 1957, and owned by the assignee of this invention and when so constructed adequate support for heavy duty service is provided and the only further feature that is needed is to provide partitioning means which acts to cushion adjacent articles from each other.

A principal object of this invention is to provide a sturdy basic carrier structure which is adapted for ordinary carrier service and in addition, to provide means for readily converting the basic carrier for heavy duty service.

Another object of this invention is to further standardize carrier design so as to effect substantial cost reductions in the manufacture of carriers generally and at the same time to provide a carrier which is readily adaptable to more than one type of service.

Still another object of this invention is to provide versatile means for converting carriers from the so-called strap style to the full depth type of carrier which can be employed either by the article vendor or, if desired, by the carrier manufacturer as conditions may warrant.

The invention in one form as applied to a carrier for a plurality of similar articles comprises a handle, a pair of partition strips integral with the handle and with the adjacent side wall and interrelated therewith along fold lines, an auxiliary panel forming a part of the handle panel, an auxiliary cushioning partition having a pair of panels arranged respectively to form downwardly extending continuations of said partition strips, and a third panel arranged to form a downwardly extending continuation

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of said auxiliary panel, and fastening, holding, or connecting means interrelating said cushioning partition and the carrier structure to hold the cushioning partition in position.

5 While it is preferable to construct a carrier according to this invention from paperboard, it will be understood that other materials may be used, such, for example, as plastic substances.

For a better understanding of the invention reference 10 may be had to the following detailed description taken in conjunction with the accompanying drawings in which FIG. 1 is a perspective view of a carrier embodying the invention; FIG. 2 is a side view of the carrier depicted in FIG. 1; FIG. 3 is an end view of the carrier depicted in FIG. 1; FIG. 4 is a top view of the carrier depicted in FIG. 1; FIG. 5 is a side view of the carrier depicted in FIGS. 1-4 taken along the line indicated at 5-5 in FIG. 4; FIG. 6 is an end view of the carrier depicted in FIGS. 1-5 taken along the line indicated in FIG. 4 at 6-6; 20 FIG. 7 is a plan view of an auxiliary element by which a strap style carrier is converted to a full depth type carrier in accordance with this invention; FIG. 8 is a perspective view of the auxiliary partition structure shown in plan in FIG. 7, the arrangement depicted in FIG. 8 being the 25 general arrangement of the parts when inserted into a strap style carrier to convert it into a full depth carrier; FIG. 9 is a plan view of a paperboard blank from which the carrier without its auxiliary partition is formed, i.e. from which a strap style carrier is formed according to this 30 invention; and in which FIGS. 10-14 inclusive depict progressive stages through which the blank of FIG. 9 is passed in forming a strap style carrier according to this invention.

With reference to the drawings and particularly with 35 reference to FIGS. 1, 9 and 10, the numerals 1 and 2 designate side walls of the carrier while the numerals 3, 4, 5 and 6 denote end panels. End panels 3 and 4 are foldably connected with side wall 1 along fold lines 7 and 8 respectively while end panels 5 and 6 are foldably 40 connected with side wall 2 along fold lines 9 and 10 respectively. Foldably joined to the bottom edge 11 of side wall 1 is bottom panel generally designated by the numeral 12 and which is provided with a medial fold line 13. Also foldably joined along the fold line 14 to the 45 bottom wall of the side panel 2 is a fastening flap generally designated at 15. Foldably joined along the fold line 16 to the end panel 3 is a riser panel in the form of medial partitioning support element 17. Similarly, riser panels in the form of medial partitioning support elements 18, 19 and 20 are foldably joined along lines 21, 22 and 23 to the end panels 5, 6 and 4 respectively.

The handle structure of the carton depicted in FIG. 9 is similar to that disclosed and claimed in my above mentioned Patent 2,537,452 and comprises two pairs of telescopically arranged panels designated in FIG. 9 by the numerals 24, 25, 26 and 27. Certain numerals are applied to FIG. 9 and certain other numerals are shown on FIG. 10 to prevent crowding. The panels 24-27 are generally similar in their overall arrangement and therefore only one of such panels will be described in detail, it being deemed desirable to point out however that the handle panel 24 is foldably joined to the handle panel 26 60 along the medial fold line 28 while the handle panel 25 is foldably joined to the handle panel 27 along the coincidental fold line 29. Panel 24 is separated from panel 25 along a cut line 30 while panel 26 is separated from panel 27 along a cut line 31 which coincides with line 30. The outline of any one of the handle panels follows that for panel 24. The panel 24 may be defined by the points 70 A, B, C, D, E and F so that the area enclosed by the lines connecting these points A-F defines the one handle panel 24 which is disposed in a flat plane. Line A-B is a

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cut line separating handle panel 24 from end panel 5. Similarly, line C—D is a cut line separating partitioning strip 32 from an edge of handle panel 24 while line D—E is a cut line coinciding with line 30 which separates panel 24 from panel 25. B—C is a fold line whereby the partitioning strip 32 is foldably connected with handle panel 24 while line G—H is a fold line along which the partitioning strip 32 is foldably joined with the side wall 2.

For the purpose of enabling the carrier to be readily grasped by the hand of the person carrying it, aperture 33 is provided in handle panel 24 and in addition, a flap 34 may be provided and adjoined to the handle panel 24 along foldline 35 if desired.

In similar fashion hand hold aperture 36 and flap 37 are provided in handle panel 25 and hand hold aperture 38 and flap 39 are provided in handle panel 27.

As is disclosed in my above mentioned Patent 2,537,452, additional partitioning strips 40, 41 and 42 are provided and are interrelated with the other elements as described in detail above in connection with partitioning strip 32.

The panel elements 24 and 26 are telescoped over panel elements 25 and 27 when the carton is formed as will be described in detail hereinafter.

According to a feature of this invention, an auxiliary panel is provided in one of the handle panels, such as 26, instead of the hand gripping flaps designated 34, 37 and 39 in connection with panels 24, 25 and 27. Such auxiliary panel is designated in the drawings by the numeral 43 and is separated from handle panel 26 along a cut line extending from the point designated I to point J and thence to points K and L. A perforated fold line designated by the numeral 44 is provided whereby the auxiliary panel 43 may be folded downwardly. Suitable locking tabs 45 and 46 are formed in the auxiliary panel 43, these tabs being cut out of the auxiliary panel and being respectively provided with fold lines 47 and 48 at the bases thereof.

The first step in forming the carrier from the blank depicted in FIG. 9 is shown in FIG. 10. This step comprises folding the auxiliary panel downwardly along the fold line 44, it being understood that the auxiliary panel 43 is maintained in the downwardly folded position due to glue indicated by stippling in FIG. 9. When so folded, the auxiliary panel 43 is disposed at the approximate level of the partition strips 32, 40, 41 and 42, as will be apparent from FIGURES 1 and 10. Thereafter glue is applied to the blank depicted in FIG. 10 as indicated therein by the stippled areas.

The blank is then folded as depicted in FIG. 11. Such a folding operation causes the end panels 3 and 5 to swing over the side panels 1 and 2 along the fold lines 7 and 9 respectively. Simultaneously, partitioning strip 32 swings over along the top center portion 2A of side panel 2 along the fold line G—H. The partitioning strip 41 folds similarly. Since A—B is a cut line and B—C is a fold line, the above described folding operation causes the handle panel 24 to overlap the strip 32 partially as depicted in FIG. 11. In similar fashion the corresponding end panel 3 and handle panel 26 are simultaneously folded over, it being understood that the opening 33 coincides generally with the hand gripping opening 36 and the opening from which auxiliary panel 43 is struck overlies and generally coincides with the hand gripping aperture 38. The inner ends of panels 17 and 18 are secured to panels 26 and 24 respectively adjacent the fold lines 16 and 21. Thereafter an application of glue is made as indicated by the stippled area in FIG. 11.

The next operation is depicted in FIG. 12 and is effected by simply folding the medial support elements 19 and 20 along their fold lines 22 and 23 respectively. Thereafter an application of glue is made to the structure as shown in FIG. 12 and subsequently the arrangement is folded along the medial fold lines 28 and 29 to the position indicated in FIG. 14, it being understood that in FIG.

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13 the folding operation between FIG. 12 and FIG. 14 is depicted when but partially completed.

It will be understood that the lap panel 15 is secured along an edge of the bottom panel 12 to complete the carrier structure depicted in FIG. 14, which figure shows the carrier in its collapsed condition.

As can clearly be seen from FIG. 7, the auxiliary cushioning partition 50 comprises a panel 51 foldably joined along fold line 52 to a panel 53. In similar fashion a panel 54 is foldably joined to the panel 53 along the fold line 55. Formed in the panel 53 is a pair of apertures 56 and 57. Aperture 56 is provided with a retaining tab 58 which is secured along one side along a fold line 59 to panel 53. Similarly a retaining tab 60 is foldably joined to panel 53 along fold line 61. If desired, tabs 58 may be formed in the general shape of the locking tabs of Patent 2,786,572.

A notch 62 is provided in panel 51 and a perforated fold line 63 extends from a downwardly extending end 64 of the notch to the edge 65 of the panel. Similarly, a notch 66 is provided with a downwardly extending part 67 which is connected by a perforated line 68 with the edge 69 of the panel 54.

In order to insert the auxiliary cushioning partition structure 50 into the basic strap style carton the cushioning structure is first folded to the position depicted in FIG. 8 and is thereafter inserted downwardly between the partitioning strips 32 and 40 on one side of the carton and between the corresponding strips 41 and 42 on the other side of the carton. Stated otherwise, an auxiliary cushioning partition is inserted into the center cell on each side of the carrier handle. When so inserted, for example between side 1 of the carton and the handle, the notch 62 rides under the lower edge 41A of strip 41 while the notch 66 rides under the lower edge 42A of the strip 42. The lower extremity 64 of notch 62 rides along the lower edge 41A of strip 41 and the lower extremity 67 of notch 66 rides along the underneath edge 42A of strip 42. In order to fasten the panel 53 to the auxiliary panel, a force is applied to the tab 58 of element 50 adjacent side panel 1 which drives the coincidental locking tab 45 inwardly through the rectangular opening 57 in the auxiliary cushioning structure 50 disposed between the side panel 2 and handle panel. In like fashion a force imparted from the direction of the side 2 toward the handle panel engages tab 58 of the auxiliary partition between side 2 and the handle and drives the locking tab 46 through the coincidental rectangular aperture 57 of the auxiliary partition disposed between the side wall 1 and the handle panel. In this manner auxiliary partitions are locked to either side of the auxiliary panel 43 against outward and inward movement and as already explained, the panels 51 and 54 are secured to the partitioning strips 32 and 40, as well as to 41 and 42. Since the fold lines 52 and 55 defining the edges of panels 51, 53 and 54 coincide with the fold lines G—H of strips 32, 40, 41 and 42, provision is automatically made for collapsing the carrier with the cushioning partition in place. Stated otherwise, the auxiliary partition is arranged to accommodate setting-up and collapsing operations of the carrier without undue interference therewith.

While the above locking means is preferred, it will be understood that glue, staples or other means could be used, if desired. Whatever fastening, holding, or connecting means is chosen, it should be effective to secure the cushioning partition in position and be ineffective to prevent collapse of the carrier.

As will be apparent from FIG. 5, the upper edge of panel 53 abuts the lower edge of handle panel 25 (and the corresponding panel on the opposite side of the carrier). Such abutting relation is sufficient to hold the cushioning partition in place for certain applications of the invention.

From the above description it will be understood that the auxiliary partition designated by the numeral 50 and

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shown in FIG. 7 is inserted into a strap style carrier and secured therein in accordance with this invention and since the basic carrier structure is sturdy enough to accommodate rugged duty service, the partitioning elements 50 simply perform a cushioning or separating operation between adjacent ones of the articles packed within the carrier. It will thus be obvious that the invention effects substantial savings in material over and above that which is required, for example to construct a regular full depth carrier of the type disclosed and claimed in my above mentioned Patent 2,688,421.

While the construction of the cushioning partition 50 as described above is the preferred construction, it is obvious that for certain applications of the invention it would be desirable to alter the orientation of the cushioning partition 50 or even to eliminate one or more of the panels 51, 53, or 54. Furthermore, it would be desirable for certain types of service to form the cushion as a four-sided tubular structure.

Each cushioning partition preferably should comprise a single blank irrespective of the number of panels and of course may be replaced if damaged or lost without replacing the entire carrier via the above described procedure. Furthermore, it will be understood that the cushioning partition may be used in conjunction with new or used carriers and by proper choice of dimensions the width of the panel comprising the cushioning partition may be related with the walls of the center cell so as to eliminate the necessity for locks or other securing means.

While I have shown and described particular embodiments of the invention, I do not wish to be limited thereto and intend in the appended claims to cover all such changes and modifications as fall within the true spirit and scope of the invention.

What I claim as new and desire to secure by Letters Patent of the United States is:

1. A carrier for a plurality of similar articles, said carrier comprising a handle panel, a partition strip on one side of said handle panel and interrelated with said handle panel along a substantially vertical fold line, said strip being disposed with respect to said handle panel in substantially normal relation thereto and forming a shallow separating means between adjacent ones of said articles alongside said handle panel when the carrier is set up and being foldable along said fold line to a position of parallel relation with respect to said handle panel when the carrier is collapsed, an auxiliary panel struck out of said handle panel to form a hand gripping aperture therein, said auxiliary panel being foldable along a substantially horizontal edge thereof into a position of parallel abutting relation with a part of said handle panel and

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when so folded said auxiliary panel being disposed generally at the level of said strip, an auxiliary cushioning partition having a first panel forming a downwardly extending continuation of said partition strip whereby the depth thereof is increased substantially and a second panel foldably joined to said first panel along a substantially vertical fold line forming a downwardly extending continuation of said auxiliary panel whereby the depth thereof is increased substantially, said auxiliary panel and said handle panel forming an abutment ledge along the edge of said handle panel coincident with the upper edge of said partition strip so that engagement between said abutment ledge and a part of said cushioning partition tends to hold said cushioning partition within the carrier, a slot in the upper part of the edge of said first panel remote from the fold line between said first and second panels for receiving the lower edge of said partition strip, and disjointable locking means forming releasable means interrelating said second panel and said auxiliary panel.

2. A carrier for a plurality of similar articles, said carrier comprising a handle panel, a partition strip integral with said handle panel and interrelated therewith along a fold line, an auxiliary panel struck out of said handle panel to form a hand gripping aperture therein, said auxiliary panel being foldable along one edge thereof into a position of parallel abutting relation to a part of said handle panel and when so folded the auxiliary panel being disposed generally at the level of said strip, an auxiliary cushioning partition having a first panel forming a continuation of said partition strip and a second panel forming a continuation of said auxiliary panel, said first and second panels being joined together along a vertical fold line disposed in generally coincidental relation to the fold line between said handle panel and said partition strip, a slot in an edge of said first panel arranged to receive an edge of said partition strip whereby upward movement of said first panel relative to said partition strip is prevented, and disjointable locking means releasably securing said second panel to said auxiliary panel, said locking means being effective to prevent relative vertical movement in either direction between said second panel and said auxiliary panel and said locking means and slot normally preventing bodily movement of said cushioning partition panels relative to the associated auxiliary panel and partition strip during collapsing and setting up of the carrier.

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