Aug. 15, 1967 H. W. FORRER 3,335,906

HANDLE STRUCTURE FOR ARTICLE CARRIERS

Filed Dec. 1, 1965 2 Sheets-Sheet 1

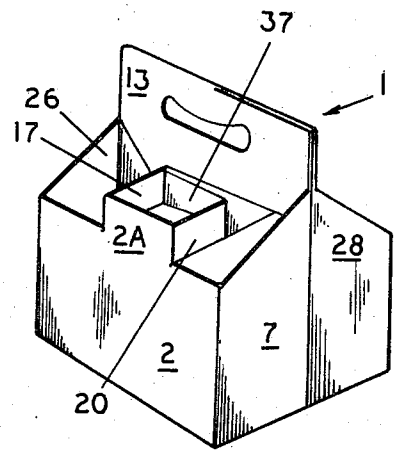


FIG. 1

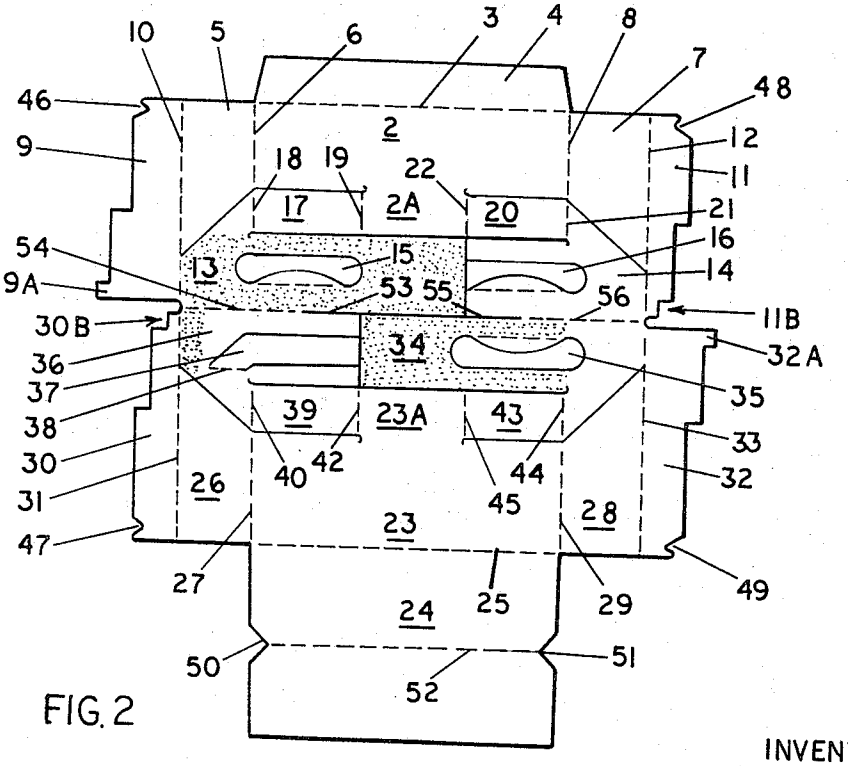


FIG. 2

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HANDLE STRUCTURE FOR ARTICLE CARRIERS

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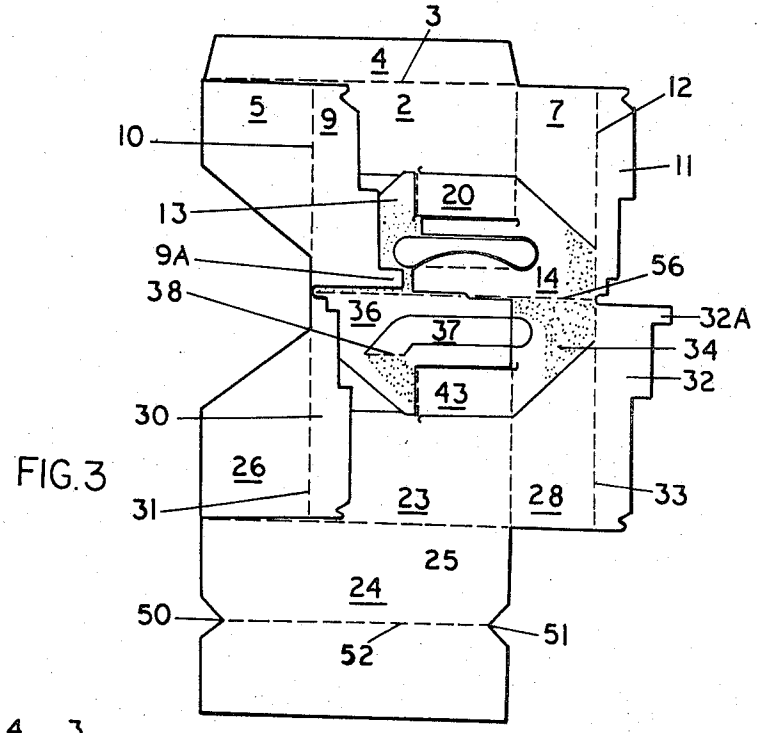


FIG. 3

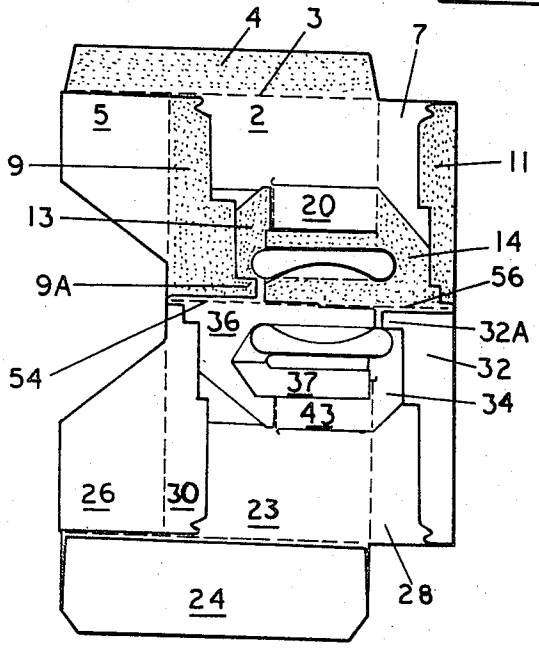


FIG. 4

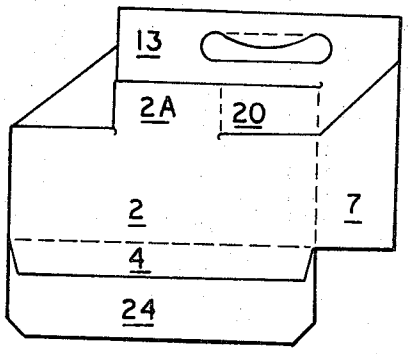


FIG. 5

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HANDLE STRUCTURE FOR ARTICLE CARRIERS

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ABSTRACT OF THE DISCLOSURE

Handle structure in conjunction with so-called basket style bottle carriers and comprising an interleaved handle wherein a main exterior handle panel is secured at one end of the carrier and wherein another main exterior handle panel is secured at the opposite end of the carrier, the handle panels being sufficiently long to extend the full length of the carrier and each constituting an exposed exterior panel of the handle. Interior handle panels are foldably joined to the top edges of the exterior handle panels respectively and such interior handle panels are secured at the outer ends thereof to the respective adjacent ends of the carrier and the inner ends thereof extend a partial distance only along the length of the associated exterior handle panels and a severance slit is arranged to separate each interior handle panel from its associated main exterior handle panel for a portion only of its length, such severance slits serving to accommodate an interleaved relationship of the exterior and interior handle panels.

This invention relates to handle structure for article carriers and more particularly to a multi-ply interleaved handle structure which is characterized by attractive appearance and unusual sturdiness.

Known handle structures for article carriers may utilize the so-called telescoping arrangement such as is disclosed in U.S. Patent 2,537,452. Such carriers are efficient in the use of material and afford an adequate arrangement structurally speaking although none of the handle panels in such an arrangement extends the entire length of the carrier.

Other known carriers are provided with exterior handle panels which extend the entire length of the carrier but such handle structures are not characterized by a balanced arrangement and the internal panels are not normally of particular advantage insofar as improving the strength and sturdiness of the handle is concerned.

A principal object of this invention is to provide an improved handle structure for article carriers wherein the handle structure is characterized by attractive appearance and a very high degree of structural strength.

Another object of the invention is the provision of an improved handle structure for article carriers which is adaptable for the usual nesting techniques whereby substantial economies of material are effected.

A further object of the invention is to provide an improved handle structure for article carriers wherein special provision is made for protecting bottles on the opposite sides of the handle structure from unwanted collision with each other.

The invention in one form comprises a first main exterior handle panel foldably joined at one end thereof to one end of the carrier and forming the exterior of the handle on one side thereof, a second main exterior handle panel joined at one end theerof to the other end of the carrier and forming the exterior of the handle on the other side thereof together with interior handle panels foldably joined to the top edges of the first and second main exterior handle panels and to the adjacent ends of the carrier, all the handle panels being secured together in flat face contacting relation to form a composite handle structure. According to one feature of the invention, the handle structure is adjoined to the carrier at the ends by a foldable connection with riser panels at each end of the carrier and one riser panel at each end of the carrier is provided with an inwardly projecting reinforcing tab which cooperates with the adjacent inner handle panel to form an inner reinforcing structure for the handle on both sides of the carrier. According to another facet of the invention, a medial partition panel is foldable downwardly along an offset fold line and is struck from one of the interior handle panels to form a medial partition for the central portion of the carrier. The exterior and interior handle panels which are foldably joined to one end of the carrier are interleaved with the corresponding panels at the other end of the carrier so as to expose to view only the main exterior panel on each side of the handle. In this manner the appearance of the carrier is enhanced and the strength thereof is augmented.

For a better understanding of the invention, reference 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 completed set-up carrier utilizing handle structure according to this invention; FIG. 2 is a plan view of a blank from which the carrier of FIG. 1 is formed; and in which FIGS. 3, 4 and 5 represent successive stages through which the blank of FIG. 1 is manipulated to form the completed carrier as is represented in collapsed form in FIG. 5.

In the drawings the numeral **1** generally designates the handle structure constructed according to this invention. The handle **1** is secured at each end to the carrier. The body portion of the carrier includes a side wall **2** to the bottom edge **3** of which a glue flap **4** is foldably joined. An end wall **5** is foldably joined to one end of side wall **2** along fold line **6** and a similar end panel **7** is foldably joined to the other end side wall **2** along fold line **8**. A riser panel **9** is foldably joined to end panel **5** along fold line **10**, while a similar but not identical riser panel **11** is foldably joined to end wall **7** along fold line **12**. A main handle panel **13** is foldably joined to riser panel **9** along fold line **10** and an inner handle panel **14** is foldably joined to riser panel **11** along fold line **12**. A hand gripping aperture **15** is formed within main exterior handle panel **13** and a similar hand gripping aperture **16** is formed with an inner handle panel **14**. A partitioning strap **17** is foldably joined along fold line **18** to main exterior handle panel **13** at one end and at the other end partioning strap **17** is foldably joined along fold line **19** to the high center portion **2A** of side wall **2**. Similarly, a partitioning strap **20** is foldably joined at one end thereof to inner handle panel **14** along fold line **21** and at the other end thereof to the high center portion **2A** of side wall **2** along fold line **22**.

The other side of the carrier is similarly constructed and comprises a side wall **23** to the bottom edge of which a bottom panel **24** is foldably joined along fold line **25**. End panel **26** is foldably joined to one end of side wall **23** along fold line **27** while a similar end panel **28** is foldably joined to the other end of side wall **23** along fold line **29**. Riser panel **30** is foldably joined along fold line **31** to an edge of end wall **26** while a similar riser panel **32** is foldably joined to end panel **28** along fold line **33**. A main exterior handle panel **34** is foldably joined to riser panel **32** along fold line **33** and is provided with a hand gripping aperture **35**. An inner handle panel element **36** is foldably joined to riser panel **30** along fold line **31**. A medial partioning panel **37** is struck out of inner panel **36** and is foldably secured thereto along offset fold line **38**.

A partitioning strap **39** is foldably joined at one end to inner handle panel **36** along fold line **40** and at the other end thereof is foldably joined to the high center portion

23A at side wall 23 along fold line 42. Similarly, partitioning strap 43 is foldably joined to main exterior handle panel 34 along fold line 44 at one end of the strap and at the other end thereof the strap is foldably joined to the high center portion 23A of side wall 23 along fold line 45.

For the purpose of maintaining the carrier in set-up condition, locking notches 46, 47, 48 and 49 are formed in the bottom portions of the riser panels 9, 30, 11 and 32, respectively, and cooperate with the locking notches 50 and 51 which are formed medially of the bottom wall 24 at the ends of the fold line 52.

In order to facilitate interleaving of the handle panels in accordance with one feature of this invention, a severance slit 53 is formed between the main exterior handle panel 13 and the inner handle panel 36 at the inner end of the fold line 54 by which these handle panels are interconnected at their top edges. Similarly, a severance slit 55 separates main exterior handle panel 34 from inner panel 14 for a portion of the length thereof and is disposed at the inner end of fold line 56 by which these handle panels are foldably joined together along their top edges.

When forming the carrier depicted in collapsed form in FIG. 5 from the blank depicted in FIG. 3, an application of glue is made as indicated by stippling in FIG. 2. Thereafter, end panels 5 and 26 are folded upwardly and toward the right along the fold lines 6 and 27. Simultaneously, the riser panels 9 and 30 are folded upwardly and toward the right along their respective fold lines 10 and 31 so that the ends thereof are secured in flat face contacting relation to the main exterior handle panel 13 and to the inner handle panel 36, respectively. Simultaneously, the main exterior handle panel 13 is slipped underneath the inner handle panel 14 while the inner handle panel 36 is swung over into flat face contacting relation with the main exterior handle panel 34. Upon completion of this operation, the structure appears as is depicted in FIG. 3, and an application of glue is made as is indicated by stippling.

In order to form a medial separator for the bottles on opposite sides of the handle structure, the partitioning panel 37 is folded outwardly and downwardly along the offset fold line 38 to occupy the position depicted in FIG. 4. When in this position the medial partitioning panel 37 is disposed generally below the handle structure and aids substantially in protecting a bottle on one side of the handle from an adjacent bottle on the opposite side thereof. The riser panel 11 is folded upwardly to the left and into flat face contacting relation with the inner handle panel 14 along the fold line 12 to occupy the position depicted in FIG. 4. In similar fashion, the riser panel 32 is folded upwardly and over into flat face relation with the main exterior handle panel 34 to occupy the position depicted in FIG. 4, such folding operation being along the fold line 33. In like fashion, the bottom panel 24 is folded along its medial fold line 52 so that the bottom panel occupies the collapsed position as depicted in FIG. 4.

In order to complete the carrier, an application of glue is made to the various panels as indicated by stippling in FIG. 4. Thereafter, the side wall panel 2 and the remaining parts disposed above the fold lines 54 and 56 are swung upwardly and forwardly into flat face contacting relation with the corresponding parts below the fold lines 54 and 56 so that the carrier then occupies the position as depicted in FIG. 5 which, of course, is the collapsed condition of the carrier.

In order to set up the carrier, it is simply necessary to press inwardly on the end panels 7 and 28 so as to cause those panels to assume a condition of perpendicular relationship to the side walls 2 and 23 and so as to cause the locking notches 46–49, inclusive, to engage the locking notches 50 and 51 in a manner well known in the art. When so arranged the carrier is in its set-up condition as depicted in FIG. 1.

From the description thus far it is apparent that the main exterior handle panel 13 extends throughout the entire length of the carrier on one side thereof as does the main exterior handle panel 34. Furthermore, since the inner handle panel 36 at one end of the carrier is disposed along the inner surface of the main exterior handle panel 34 and since the inner handle panel 14 at the other end of the carrier is disposed along the inner surface of the main exterior handle panel 13, the inner handle panels are captured within the inner portions of the handle structure. This interleaving effect improves the appearance of the carrier and also adds substantially to the strength thereof.

As is apparent from the drawings, the riser panels 9 and 32 are provided with reinforcing tabs 9A and 32A, respectively. As is apparent from FIG. 4, the inner end of the reinforcing tab 9A lies immediately adjacent the inner end edge of the inner handle panel 14. Thus, the reinforcing tab 9A and inner handle panel 14 constitute a complete ply throughout the length of the carrier which substantially adds to the strength thereof. In like fashion, the inwardly projecting reinforcing tab 32A lies immediately adjacent the inner end of inner handle panel 36 and in similar fashion adds substantially to the strength of the handle structure. The particular arrangement whereby the reinforcing tabs 9A and 32A are formed on their respective riser panels is achieved with substantial economy due to the fact that these tabs are in effect taken from an adjacent blank due to the fact that they nest within the corresponding riser panel. For example, it is apparent from FIG. 2 that the riser panels 11 and 30 each are recessed inwardly as is indicated by the numerals 11B and 30B and the recessed portions of these riser panels afford the material for the tabs such as 9A and 32A in an adjacent blank. Thus, the substantial strength of the handle structure achieved according to this invention is possible with significant efficiency and economy in the use of material from which the carrier is formed.

The fact that the fold line 38 for the medial reinforcing panel 37 is offset downwardly from the horizontal center line of that panel accounts for the fact that the medial reinforcing panel 37 occupies a position generally lower than the main elements of the handle structure as is apparent, for example, from FIG. 1. Thus, the partitioning effect achieved is significant without impairing the efficiency of the invention as a basic means of providing a strong handle structure of neat appearance and at substantial economy.

While a particular embodiment of the invention has been shown and described, it will be understood that the invention is not limited thereto and it is intended in the appended claims to cover all such changes and modifications as fall within the true spirit and scope of the invention.

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. Article carrier handle structure comprising a first main exterior handle panel joined at one end thereof to one end of the carrier and forming the exterior of the handle on one side thereof, a second main exterior handle panel joined at one end thereof to the other end of the carrier and forming the exterior of the handle on the other side thereof, a first interior handle panel joined at one end thereof to said one end of the carrier with its other end spaced inwardly from the other end of said main exterior handle panel, said first interior handle panel being foldably joined to the top edge of said first main exterior handle panel and secured in flat face contacting relation to the inner surface of said second main exterior handle panel, and a second interior handle panel joined at one end threeof to said other end of the carrier with its inner end spaced inwardly from the other end of said second main exterior handle panel, said second interior panel being foldably joined to the top edge of said second main exterior handle panel and secured in flat face con-

tacting relation to the inner surface of said first main exterior handle panel, and means for securing said interior and exterior panels together to form a multi-ply handle structure.

2. Handle structure as defined in claim 1 wherein each main exterior handle panel is foldably joined at said one end thereof to a medially disposed riser panel and wherein each riser panel is configured with an inwardly projecting reinforcing tab which is disposed immediately adjacent the inner end edge of one of the said interior handle panels which is joined to the opposite end of the carrier.

3. Handle structure according to claim 1 wherein a first severance slit is formed at the inner end of the fold line between said first main exterior handle panel and said first interior handle panel and wherein a second severance slit is formed at the inner end of the fold line between said second main exterior handle panel and said second interior handle panel, said slits being arranged in coincidental relation to accommodate interleaved telescoping of said exterior and interior handle panels whereby one handle panel of each end of the carrier may occupy an exterior position and the other handle panel at each end of the carrier may occupy an interior position with its inner end edge adjacent the inner extremity of the opposite reinforcing tab.

4. Article carrier handle structure comprising a first main exterior handle panel joined at one end thereof to one end of the carrier and forming the exterior of the handle on one side thereof, a second main exterior handle panel joined at one end thereof to the other end of the carrier and forming the exterior of the handle on the other side thereof, a first interior handle panel foldably joined to the top edge of said first main exterior handle panel and secured in flat face contacting relation to the

inner surface of said second main exterior handle panel, a second interior handle panel foldably joined to the top edge of said second main exterior handle panel and secured in flat face contacting relation to the inner surface of said first main exterior handle panel, and means for securing said interior and exterior panels together to form a multi-ply handle structure, each main exterior handle panel being foldably joined at said one end thereof to a medially disposed riser panel and each riser panel being configured with an inwardly projecting reinforcing tab which extends toward the inner end edge of one of said interior handle panels and each interior handle panel being foldably joined at said one end thereof to a medially disposed riser panel and the inner edge of the riser panels which are joined to said interior handle panels being irregularly shaped and being complementary to the inner edges of the riser panels on which the inwardly projecting reinforcing tabs are formed so that the riser panels of a particular blank may be nested with the complementary riser panels of an adjacent blank.

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