Jan. 14, 1969 J. T. STOUT, SR., ET AL 3,421,684

CARRIER HANDLE STRUCTURE

Filed Aug. 24, 1967 Sheet 1 of 4

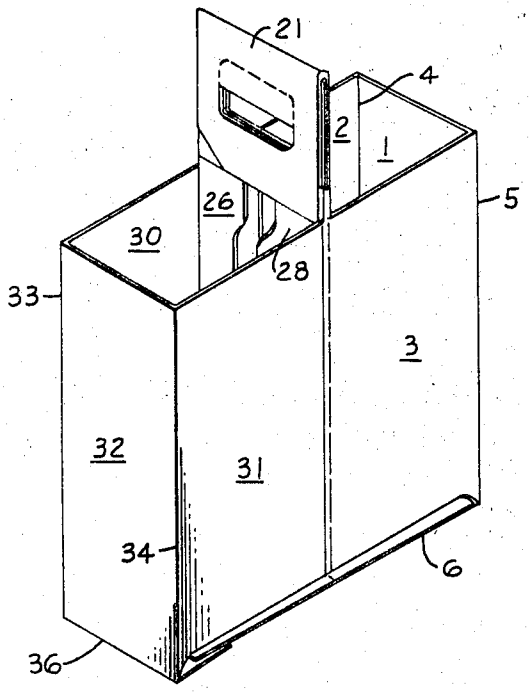


Fig. 1

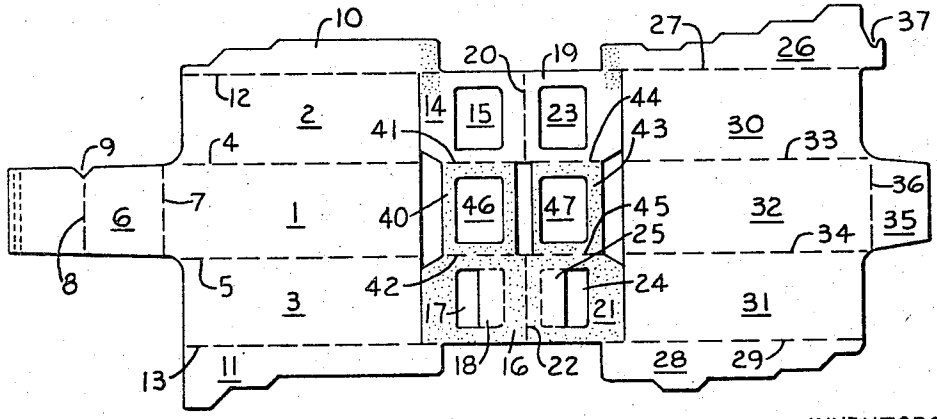


Fig. 2

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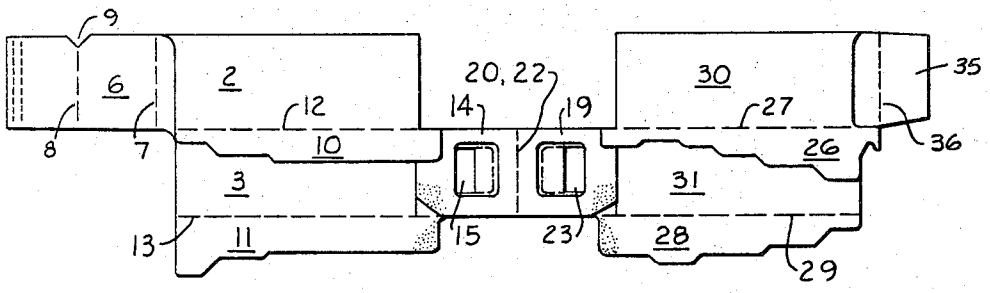


Fig. 3

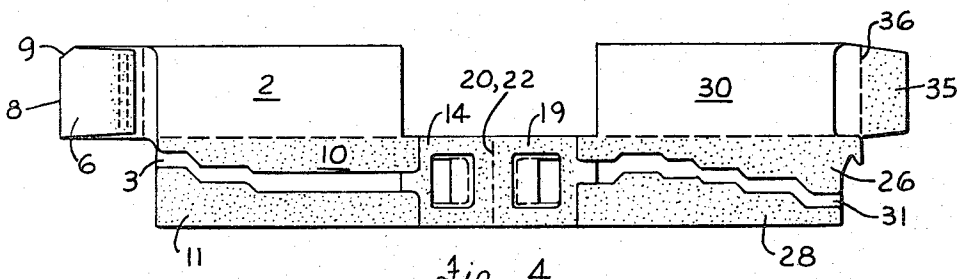


Fig. 4

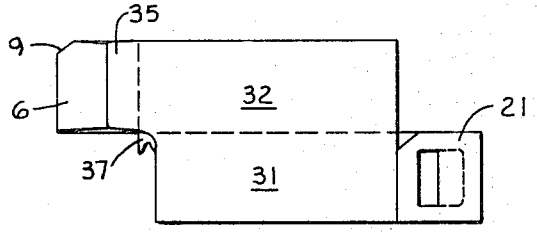


Fig. 5

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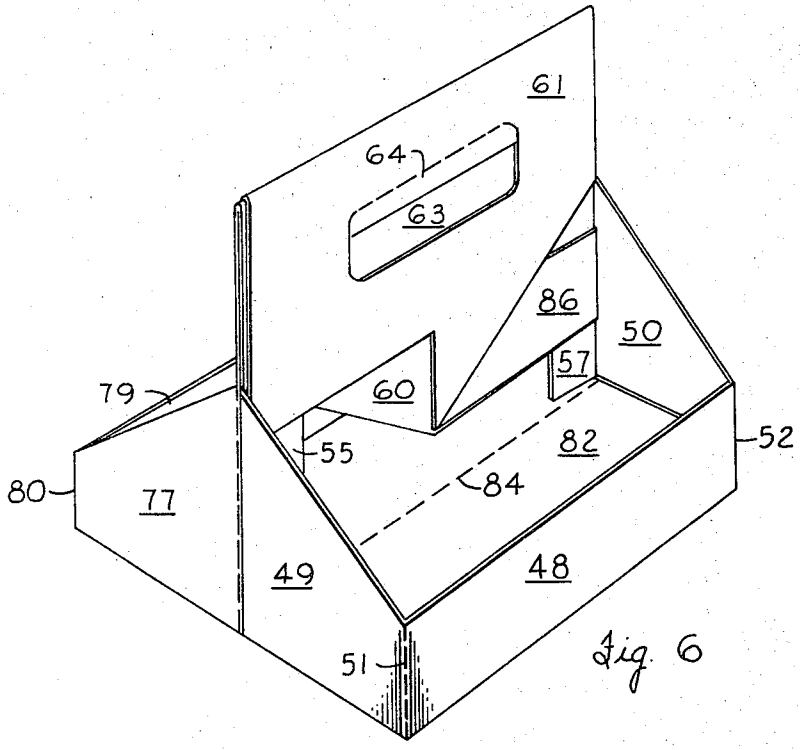


Fig. 6

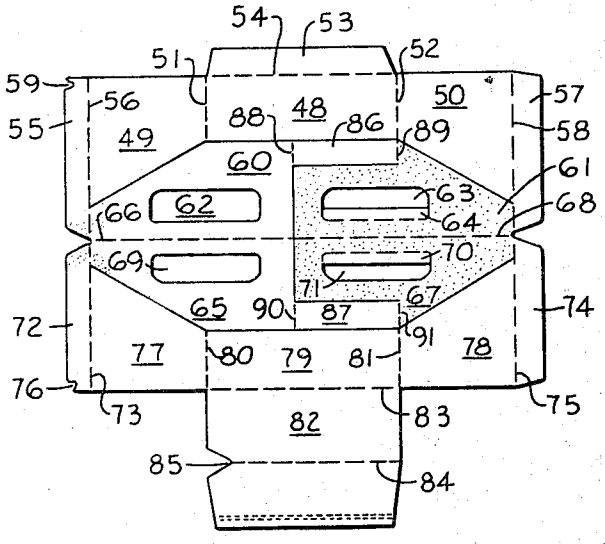


Fig. 7

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CARRIER HANDLE STRUCTURE

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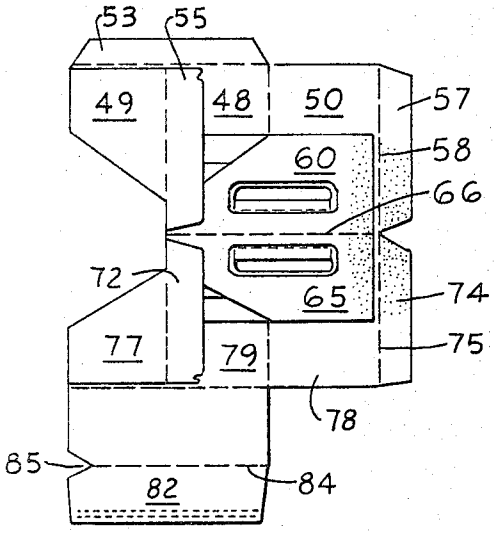


Fig. 8

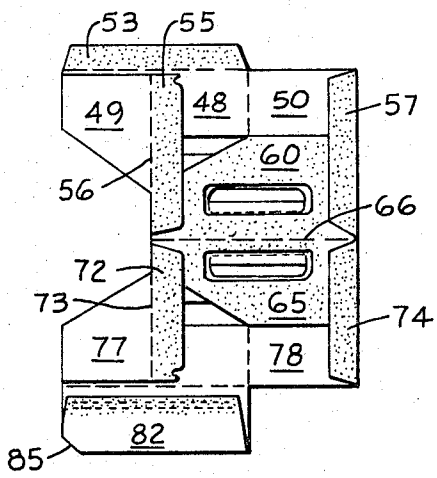


Fig. 9

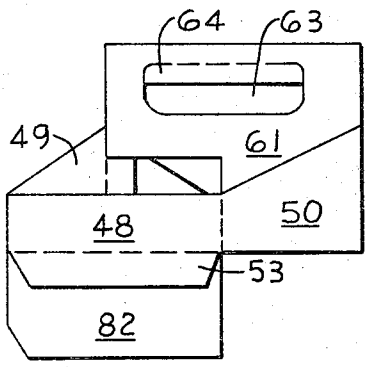


Fig. 10

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3,421,684

CARRIER HANDLE STRUCTURE

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U.S. Cl. 229—52 7 Claims
Int. Cl. B65d 5/46

ABSTRACT OF THE DISCLOSURE

The handle structure as disclosed herein is primarily applicable to carriers having two cells, one on each side of the handle and in which transverse partitioning structure is not required. Thus the blank from which the carrier is formed is arranged so that material ordinarily utilized for partition structure is reoriented in such a way as to reinforce the handle and also due to the fact that the reinforcing panels of this invention are foldably joined to handle panels which are manipulated relative to each other during the formation of the carrier, such reinforcing panels serve to guide the movement of the various handle panels relative to each other during the formation of the carrier and thus insure precise controlled orientation of the various handle panels.

The article carrier disclosed and claimed in U.S. Patent 2,537,452 incorporates a handle in which the handle panels at one end of the carrier are telescopically related with the handle panels at the other end of the carrier. Furthermore, each handle panel of the telescopically related handle panels is interconnected with a transverse partition strip which interconnects the handle with a side wall to form a plurality of article receiving cells on each side of the carrier handle.

According to the present invention, a handle structure which is basically of the telescopic type is utilized and the handle panels which are foldably joined to one end of the carrier are interconnected by reinforcing panels with the handle panels which are foldably joined to the other end of the carrier. By this means the handle structure is substantially strengthened and in addition the folding operations required during the formation of the carrier are greatly facilitated because the reinforcing panels serve as a means of guiding the handle panels foldably joined to one end of the carrier into precise cooperative relationship with the handle panels which are foldably joined to the other end of the carrier so that the carrier structure which results is significantly more sturdy than conventional arrangements due primarily to the fact that material which normally is utilized in carriers having telescopic type handles to form partitioning structure is used according to this invention to reinforce and strengthen the handle structure.

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 set-up carrier constructed according to the invention and in which the articles ordinarily disposed within the carrier cells have been removed for clarity; FIG. 2 is a plan view of the blank from which the carrier of FIG. 1 is formed; FIGS. 3, 4 and 5 represent stages through which the blank of FIG. 2 is manipulated in order to form the collapsed completed carrier as depicted in FIG. 5 which when set up occupied the orientation depicted in FIG. 1; FIG. 6 is a view of a modification of the invention and which is similar to FIG. 1; FIG. 7 is a plan view of a blank from which the set-up carrier of FIG. 6 is formed and in which FIGS. 8, 9 and 10 are views representing various operations through which the blank of FIG. 7 is manipulated in order to produce a completed collapsed carrier as depicted in FIG. 10 and which when set-up appears as depicted in FIG. 6.

In the drawings, the numeral 1 depicts a side wall of the carrier to which end panels 2 and 3 are foldably joined along the fold lines 4 and 5 respectively. Bottom panel 6 is foldably joined to side wall 1 along a fold line 7 and is provided with a medial fold line 8 and a notch 9 at one end thereof.

Riser panels 10 and 11 are foldably joined to side walls 2 and 3 respectively along fold lines 12 and 13. Handle panel 14 having hand gripping aperture 15 formed therein is foldably joined to riser panel 10 along fold line 12 while handle panel 16 is foldably joined to riser panel 11 along fold line 13 and is provided with a hand gripping aperture 17 and a cushioning flap 18 constructed in known manner.

The other side of the carrier is similarly constructed and comprises a handle panel 19 foldably joined to handle panel 14 along medial fold line 20 and a similar handle panel 21 foldably joined to handle panel 16 along medial fold line 22. Hand gripping aperture 23 is formed in handle panel 19 and a similar hand gripping aperture 24 is formed in handle panel 21. A cushioning flap 25 is disposed within aperture 24 and is of conventional well known construction.

Riser panel 26 is foldably joined to handle panel 19 along fold line 27 and riser panel 28 is foldably joined to handle panel 21 along fold line 29. End panel 30 is foldably to riser panel 26 along fold line 27 while end panel 31 is foldably joined to riser panel 28 along fold line 29. Side wall panel 32 is foldably joined to end panel 30 along fold line 33 and to end panel 31 along fold line 34. A glue flap 35 is foldably joined to the bottom edge of side wall 32 along fold line 36.

For the purpose of interrelating the end walls of the carrier with the bottom panel, a locking notch 37 is formed at the bottom of riser panel 26 and cooperates in known manner with the locking notch 9 formed in the bottom panel 6.

When the carrier is formed the inner handle panels 14 and 19 are swung over and disposed in telescopic relationship inside the outer handle panels 16 and 21.

In accordance with this invention, reinforcing panel 40 is foldably joined along fold line 41 to an end edge of inner handle panel 14 and along fold line 42 to an end edge of outer handle panel 16. Similarly reinforcing panel 43 is foldably joined along fold line 44 to an end edge of inner handle panel 19 and along the fold line 45 to an end edge of outer handle panel 21. Apertures 46 and 47 are formed in reinforcing panels 40 and 43 respectively and coincide in the assembled carrier with the apertures 15, 23, 17 and 24 formed in handle panels 14, 19, 16 and 21 respectively.

The first folding operation is performed after an application of glue is made to the blank as indicated by stippling in FIG. 2. This operation comprises folding the end panels 2 and 30 along the fold lines 4 and 33 respectively by simply raising those panels and swinging them upwardly and forwardly. Simultaneously the handle panels 14 and 19 are elevated and swing upwardly and downwardly so that the parts then occupy the positions depicted in FIG. 3. During the performance of this folding operation the reinforcing panel 40 is hinged with respect to handle panel 14 about fold line 41 and simultaneously the reinforcing panel 40 hinges about the fold line 42. Thus reinforcing panel 40 in effect is captured between the outer handle panel 16 and the inner handle panel 14 and serves not only to strengthen these handle panels but also constitutes a significant aid in guiding the folding operation whereby the parts are manipulated from the positions depicted in FIG. 2 to those depicted in FIG. 3. Of course the reinforcing panel 43 hinges about fold lines 44

and 45 and thus is captured between and in face contacting relation to the inner handle panel 19 and the outer handle 21 and aids in guiding the inner handle panel into telescopic relationship with the outer handle panel.

Once the parts are manipulated into the positions depicted in FIG. 3, an application of glue is applied as indicated by the stippled areas on the inner handle panels 14 and 19 and on the riser panels 11 and 28. Thereafter riser panels 11 and 28 are elevated and folded upwardly along the fold lines 13 and 29 to occupy the position depicted in FIG. 4. Bottom panel 6 is collapsed along fold line 8.

An application of glue is then applied to riser panels 10, 11, 26 and 28 and to inner handle panels 14 and 19 as well as to an edge of bottom panel 6 and the glue flap 35 as indicated by stippling in FIG. 4. Following this application of glue, the side wall 32, end walls 30 and 31 and associated parts are elevated and folded over toward the left along the medial fold lines 20 and 22 to occupy the positions depicted in FIG. 5 which as explained constitutes a view of a finished and collapsed carrier.

In order to set up the carrier as depicted in FIG. 5 it is simply necessary to hold the side walls 32 against sidewise movement and to exert an inner force along the lower edge of end panel 31 as depicted in FIG. 5. At such time as the locking notch 37 rides into the locking notch 9, the carrier will have become locked in its set-up condition and will appear as depicted in FIG. 1.

The carrier depicted in FIGS. 6–10 inclusive is similar to that of FIGS. 1–5 and comprises a side wall 48 to which end walls 49 and 50 are foldably joined along fold lines 51 and 52 respectively. A glue flap 53 is foldably joined to side wall 48 along fold line 54.

Riser panel 55 is foldably joined to end wall 49 along fold line 56 while a riser panel 57 is foldably joined to end wall 50 along a fold line 58. A locking notch 59 is formed in riser panel 55.

Handle panel 60 is foldably joined to riser panel 55 along fold line 56 and handle panel 61 is foldably joined to riser panel 57 along fold line 58.

As is well known hand receiving apertures 62 and 63 are formed within handle panels 60 and 61 respectively and, if desired, a cushioning flap 64 may be formed within the hand gripping aperture 63.

The other side of the carrier is similarly constructed and comprises a handle panel 65 foldably joined along medial fold line 66 to handle panel 60 while a similar handle panel 67 is foldably joined along medial fold line 68 to handle panel 61. Hand gripping apertures 69 and 71 are formed within handle panels 65 and 67 respectively and, if desired, the cushioning flap 70 may be disposed within hand gripping aperture 71.

Riser panel 72 is foldably joined to handle panel 65 along fold line 73 and a similar riser panel 74 is foldably joined to handle 67 along fold line 75. A locking notch 76 is formed in riser panel 72 and is of conventional construction.

End panel 77 is foldably joined to riser panel 72 along fold line 73 while a similar end panel 78 is foldably joined to riser panel 74 along fold line 75. Side wall 79 is foldably joined along fold line 80 to end panel 77 and along fold line 81 to end panel 78. Bottom panel 82 is foldably joined to side wall 79 along fold line 83 and is provided with a medial fold line 84 at the end of which a locking notch 85 is formed.

For the purpose of reinforcing the handle structure comprising outer handle panels 61 and 67 and inner handle panels 60 and 65, a pair of reinforcing panels 86 and 87 are provided according to this invention. Reinforcing panel 86 is foldably joined to handle panel 60 along fold line 88 and to outer handle panel 61 along fold line 89. Similarly reinforcing panel 87 is foldably joined to the inner handle panel 65 along fold line 90 and to outer handle panel 67 along fold line 91.

The reinforcing handle panels 86 and 87 according to this invention serve to strengthen the handle structure of the carrier and also act as guiding elements when the inner handle panels 60 and 65 are moved into telescoping relationship inside the outer handle panels 61 and 67.

In order to form the carrier, an application of glue is first made to the blank as indicated by stippling in FIG. 7. Thereafter end wall panels 49 and 77 are lifted upwardly and swung toward the right along fold lines 51 and 80 respectively while the inner handle panels 60 and 65 are elevated and shifted bodily into flat face contacting relation with the inner surfaces of the outer handle panels 61 and 67 to occupy the positions depicted in FIG. 8. Of course this operation causes the riser panels 55 and 72 to adhere to the inner surfaces of inner handle panels 60 and 65 respectively and secure the inner handle panels 60 and 65 to the inside surfaces of the outer handle panels 61 and 67.

During the telescopic folding of inner handle panels 60 and 65 reinforcing panels 86 and 87 are folded over into positions of flat face contacting relation with the outer or underneath surfaces of inner handle panels 60 and 65 respectively and with the inner surfaces of outer handle panels 61 and 67. Of course the folding of inner handle panels 60 and 65 is materially facilitated according to this invention by way of the guiding action afforded by reinforcing panels 86 and 87.

After the blank is manipulated into the condition depicted in FIG. 8, an application of glue is made as indicated by stippling to the riser panels 57 and 74 and to the inner handle panels 60 and 65. Following this application of glue the riser panels 57 and 74 are swung upwardly and toward the left along the fold lines 58 and 75 respectively to occupy positions as depicted in FIG. 9. Simultaneously, the bottom panel 82 is folded back onto itself along the medial fold line 84 so that this panel then appears as depicted in FIG. 9.

After the parts are manipulated into the positions depicted in FIG. 9, an application of glue is made to the blank as indicated by stippled areas on that figure. Thereafter side wall 48, end walls 49 and 50 and parts associated therewith are lifted and swung forwardly and downwardly along the fold lines 66 and 68 to occupy the positions depicted in FIG. 10 to complete the formation of the carrier.

As is apparent from FIG. 6, reinforcing panel 86 is disposed between outer handle panel 61 and inner handle panel 60. Similarly, reinforcing panel 87 is interposed between inner handle panel 65 and outer handle panel 67. Of course these reinforcing panels materially strengthen the handle structure of the carrier and as has been explained, greatly facilitate the formation of the carrier by guiding the inner handle panels 60 and 65 into telescoping relationship with the outer handle panels 61 and 67.

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

1. Carrier handle structure comprising an outer handle panel foldably joined at one end thereof to one end of the carton, an inner handle panel foldably joined at one end thereof to the other end of the carton and disposed in flat parallel relation to the inner surface of said outer handle panel, and a reinforcing panel foldably joined to both said outer and said inner handle panels and with at least a portion thereof interposed therebetween.

2. Handle structure according to claim 1 wherein complementary outer and inner handle panels are foldably joined along their top edges to said outer and inner handle panels respectively and wherein a complementary reinforcing panel is foldably joined to both said outer and said inner complementary handle panels and interposed therebetween with all of said panels being secured together to form a unitary medial handle and partition.

3. Handle structure according to claim 1 wherein the fold lines between said reinforcing panel and said outer

and inner handle panels are substantially parallel to each other.

4. Handle structure according to claim 1 wherein the reinforcing panel is foldably joined along its end edges to said outer and inner handle panels.

5. Handle structure according to claim 1 wherein said reinforcing panel is foldably joined to the other ends of said inner and outer handle panels.

6. A handle structure according to claim 1 wherein said reinforcing panel is of approximately the same length as at least one of said handle panels.

7. Handle structure according to claim 1 wherein said reinforcing panel is foldably joined to at least one of said handle panels along a fold line which is spaced inwardly from the other end thereof.

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U.S. Cl. X.R.

220—113