

PATENT SPECIFICATION

1,035,555

1,035,555



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COMPLETE SPECIFICATION

DRAWINGS ATTACHED

Article Carrier

WE, THE MEAD CORPORATION, a corporation organized and existing under the laws of the State of Ohio, United States of America, of 118 West First Street, Dayton, Ohio, United States of America, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to article carriers and more particularly to carriers of the type wherein a multi-ply handle is disposed medially of the carrier and wherein a plurality of article receiving cells are disposed in a row on each side of the handle. The invention is directed primarily to a carrier wherein various panels from which the carrier is formed are constructed and arranged so as to provide a carrier of substantial structural strength and wherein a minimum of material is utilized.

Carriers of the type disclosed and claimed in United States patent 2,537,452, owned by the assignee of this invention, incorporate a multi-ply handle which extends the full length of the carrier. Carriers of the type disclosed in the aforementioned patent are characterized by a high degree of ruggedness, by excellent merchandising appearance, and are economical to manufacture. For instance the blanks for such carriers nest in staggered fashion along a continuous web with but small wastage of material. However, such blanks cannot be nested economically on the usual rectangular sheet of material because the length of the bottom panels is equal to the combined widths of the adjacent end and riser panels. Thus when staggered in nested relation unused areas necessarily are wasted at each end edge of each sheet. According to the present invention, carriers of the type

disclosed in patent 2,537,452 may be modified in such a way as to reduce the amount of material required by a special nesting of the blanks from which the carriers are formed without appreciably impairing the strength or merchandising function of the carrier.

Thus, in accordance with the invention there is provided a blank for use in forming an article carrier and comprising a pair of handle panels foldably joined together along a medial fold line, and a pair of riser panels foldably joined respectively to said handle panels along aligned fold lines generally normal to said medial fold line, the end edges of said handle panels adjacent said riser panels being recessed inwardly from said aligned fold lines sufficiently to receive at least a substantial portion of a riser panel of a reversed adjacent nested blank.

A carrier according to the present invention may comprise a bottom wall, side walls foldably adjoined along opposite side edges to the bottom wall, end panels foldably joined to the end edges of the side walls, riser panels foldably joined to the medially disposed edges of the end panels and secured in flat face contacting relation to each other, a handle panel foldably joined to each riser panel along the edge thereof which constitutes an extension of the fold line between each riser panel and its associated end panel, and wherein the outer end edges of the handle panels are recessed and may be of a configuration which is generally complementary to at least a part of the inwardly protruding edge of the riser panels disposed on one side of the handle. By this means, a riser panel is, in effect, taken from the handle panels of an adjacent blank.

While the invention is particularly adaptable to a carrier such as is disclosed in

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patent 2,537,452, it is not limited thereto and is applicable to other specific carriers as well.

For a better understanding of the invention
5 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;
10 Fig. 2 is a plan view of one form of blank from which the carrier depicted in Fig. 1 is formed and wherein dotted lines are utilized to illustrate one nesting arrangement; Fig. 3 is a plan view of a blank
15 similar to that depicted in Fig. 2 and to which stippling has been applied to indicate an application of glue; and in which Figs. 4, 5, 6 and 7 represent successive stages through which the blank depicted in Fig. 2
20 is glued and folded to produce the finished collapsed carrier depicted in Fig. 7.

In the drawings the numeral 1 is used to designate one side wall of the carrier to which the end panels 2 and 3 are foldably
25 joined along fold lines 4 and 5, respectively. A lap panel 6 is foldably joined along the bottom edge 7 of side wall 1.

A pair of riser panels 8 and 9 are foldably joined respectively to the end panels 2 and
30 3 along fold lines 10 and 11. A pair of handle panels 12 and 13 are foldably joined respectively to the riser panels 8 and 9 along the upper part of the fold lines 10 and 11.

For the purpose of providing article-receiving cells on the side of the carrier adjacent to side wall 1, the side wall is provided with a high center section generally designated by the numeral 14. Foldably
40 joined at one end to high center section 14 along fold line 15 is a partition strip 16 which is foldably joined to handle panel 12 along fold line 17. In similar fashion, partition strip 18 is foldably joined to the
45 high center section 14 along fold line 19 and is foldably joined to handle panel 13 along fold line 20.

Handle panels 12 and 13 are foldably joined respectively to handle panels 21 and
50 22 along medial fold lines 23 and 24, respectively.

Handle panels 12, 13 and 22 are provided with hand gripping apertures 25, 26 and 27, respectively. Handle panel 21 is
55 provided with an auxiliary panel 28 which is foldably joined to handle panel 21 along a fold line 29.

For the purpose of providing article receiving cells on the side of the carrier
60 opposite from side wall 1, partition strip 30 is foldably joined along fold line 31 to the high center section 32 of side wall 33. Partition strip 30 is foldably joined to
65 partition strip 35 is foldably joined to the

high center section 32 of side wall 33 along fold line 36 and is foldably joined to handle panel 22 along fold line 37.

The end panels 38 and 39 are foldably joined to side wall 33 along fold lines 40
70 and 41, respectively. Riser panels 42 and 43 are foldably joined to end panels 38 and 39 respectively along fold lines 44 and 45. Bottom panel 46 having a medial fold line 47 is foldably joined to side wall 33 along
75 fold line 48.

In accordance with this invention, and as is best shown in Fig. 2, the blank there depicted is constructed so that the handle panels 12 and 21 are recessed inwardly from
80 fold lines 10 and 44 along their outer edges as generally designated by the letters A and B. In like fashion, the outer end edges of handle panels 13 and 22 are recessed inwardly from fold lines 11 and 45 as designated
85 generally by the letters C and D. Thus, riser panels such as 42 and 43 and a portion of the end panels 38, 39 foldably joined thereto by suitable nesting are in effect taken from the handle panels of an
90 adjacent blank. The riser panels such for example as 42 and 43 may have their edges E and F configured so that such edges generally conform to the edges A and B of panels 12 and 21 and C and D of panels
95 13 and 22. Thus, one blank may be nested alongside an adjacent similar blank with little waste which is cut from the same sheet of material. In Fig. 2 the blank on the left is depicted in solid lines whereas
100 the outline of a portion of a blank on the right is depicted in dotted lines. Stated otherwise, the blank on the left depicted in Fig. 2 may be nested with the blank on the right by simply arranging the blank on the right in reversed side by side relation so
105 that the edge F of riser panel 43 lies in complementary relation to the edges C and D of handle panels 13 and 22 and so that the bottom edge of end panel 39 of the right hand blank coincides with the top edge of riser panel 9. Thus, in accordance with
110 one feature of the invention material is in effect taken from the right hand end of the handle panels 13 and 22 of one blank and is utilized to form the riser panel 43 of an adjacent similar blank and a part of the
115 end panel 39 joined thereto. By this means substantial economy of material is effected.

Tests conducted to determine the
120 structural strength of a carrier made according to this invention have indicated that such a carrier is adequately strong and is characterized by what may be called a high degree balanced structural strength. Stated
125 otherwise, strength tests show that particular carriers constructed according to this invention may fail first at one point and later at another point indicating that the points of stress are such that the carrier does not
130

panel

rupture consistently at a particular point. Balanced mechanical strength is thus achieved.

In order to manipulate the blank depicted in Fig. 2 in such a way as to form a finished carrier as depicted in Fig. 1, it is only necessary to fold the blank through the stages depicted in Figs. 4-7, inclusive, after glue is applied initially as indicated in Fig. 3 by stippling. Stated otherwise, a carrier constructed according to this invention is formed substantially as disclosed in the aforementioned U.S. Patent 2,537,452. For the sake of completeness, a brief description of the gluing and folding operations is here included.

After glue is applied to the blank as indicated in Fig. 3, riser panels 8 and 42 are folded over against handle panels 12 and 21 along the upper portions of their respective fold lines 10 and 44. This operation causes the riser panels to be affixed to the handle panels 12 and 21. Simultaneously with this folding operation the end panels 2 and 38 are swung over along their respective fold lines 4 and 40 and the handle panels 12 and 21 are thus elevated and swung over so that the hand gripping aperture 25 coincides generally with the hand gripping aperture 26 in handle panel 13. In like fashion, auxiliary panel 28 folds over into general coincidence with the aperture 27 in handle panel 22. This folding operation causes the partition strip 16 to swing over along fold line 15 so that the partition strip 16 lies flat against the center portion 14 of side wall 1. Simultaneously partition strip 30 folds over along fold line 31 so that the strip lies flat against the high center portion 32 of side wall 33. Upon completion of this folding operation the blank appears as indicated in Fig. 4.

In order to perform the next operation, the riser panels 9 and 43 are swung over along their respective fold lines 11 and 45 so that the riser panels lie flat against the end panels 3 and 39 and so that the inner ends of the riser panels 9 and 43 are affixed securely to the right hand portions of handle panels 13 and 22, respectively. Upon completion of this operation the blank appears as depicted in Fig. 5.

The blank of Fig. 5 is then manipulated by doubling the bottom panel 46 back on itself along the fold line 47 to the position depicted in Fig. 6. In like fashion, the auxiliary panel 28 is folded out of the handle panel 21 downwardly along the fold line 29 to the position depicted in Fig. 6.

With glue applied as indicated by stippling in Fig. 6, the blank is then folded along the medial fold lines 23, 24 so that the riser panel 8 comes into flat face contacting relation to the riser panel 42 and so that the riser panel 9 is secured in flat face

contacting relation to the riser panel 43. Simultaneously, the inner surface of handle panel 12 is affixed to the inner surface of handle panel 21 and the lap panel 6 is affixed to the edge of bottom 46 so that upon completion of this folding operation the completed carrier appears in collapsed form as depicted in Fig. 7. During this folding operation the auxiliary panel 28 is securely affixed inside the handle panels 12 and 21 and adds substantial reinforcement to the composite multi-ply handle of the carrier.

For the purpose of maintaining the carrier depicted in Fig. 7 in set-up condition as shown in Fig. 1, locking notches 49 and 50 are formed at the ends of fold line 47 in bottom panel 46. These notches cooperate with notches 51 and 52 formed in riser panels 8 and 9, respectively in known manner.

Having regard to the provisions of Section 9 of the Patents Act, attention is drawn to our British Patent No. 915,991.

WHAT WE CLAIM IS:—

1. A blank for use in forming an article carrier and comprising a pair of handle panels foldably joined together along a medial fold line, and a pair of riser panels foldably joined respectively to said handle panels along aligned fold lines generally normal to said medial fold line, the end edges of said handle panels adjacent said riser panels being recessed inwardly from said aligned fold lines sufficiently to receive at least a substantial portion of a riser panel of a reversed adjacent nested blank.

2. A blank according to Claim 1 wherein the recessed edges of said handle panels are configured to conform at least generally with the outer edge of a riser panel of a reversed adjacent nested blank.

3. A blank according to Claim 1 or Claim 2 wherein a pair of end panels are foldably joined respectively to said riser panels along parts of said normal fold lines remote from said medial fold line and the end edges of said handle panels are recessed inwardly sufficiently to receive a riser panel of a reversed adjacent nested blank and a portion of the end panel foldably joined thereto.

4. A blank according to Claim 1 comprising a generally rectangular bottom panel, a first side wall panel foldably joined to a side edge of said bottom panel, a first pair of end panels foldably joined respectively to the end edges of said first side wall panel, a first pair of riser panels foldably joined respectively to said first pair of end panels along the edges thereof remote from said first side wall panel, a first pair of handle panels foldably joined respectively to said first pair of riser panels along fold lines which constitute extensions respectively of the fold lines adjoining said riser panels and



rupture consistently at a particular point. Balanced mechanical strength is thus achieved.

In order to manipulate the blank depicted in Fig. 2 in such a way as to form a finished carrier as depicted in Fig. 1, it is only necessary to fold the blank through the stages depicted in Figs. 4-7, inclusive, after glue is applied initially as indicated in Fig. 3 by stippling. Stated otherwise, a carrier constructed according to this invention is formed substantially as disclosed in the aforementioned U.S. Patent 2,537,452. For the sake of completeness, a brief description of the gluing and folding operations is here included.

After glue is applied to the blank as indicated in Fig. 3, riser panels 8 and 42 are folded over against handle panels 12 and 21 along the upper portions of their respective fold lines 10 and 44. This operation causes the riser panels to be affixed to the handle panels 12 and 21. Simultaneously with this folding operation the end panels 2 and 38 are swung over along their respective fold lines 4 and 40 and the handle panels 12 and 21 are thus elevated and swung over so that the hand gripping aperture 25 coincides generally with the hand gripping aperture 26 in handle panel 13. In like fashion, auxiliary panel 28 folds over into general coincidence with the aperture 27 in handle panel 22. This folding operation causes the partition strip 16 to swing over along fold line 15 so that the partition strip 16 lies flat against the center portion 14 of side wall 1. Simultaneously partition strip 30 folds over along fold line 31 so that the strip lies flat against the high center portion 32 of side wall 33. Upon completion of this folding operation the blank appears as indicated in Fig. 4.

In order to perform the next operation, the riser panels 9 and 43 are swung over along their respective fold lines 11 and 45 so that the riser panels lie flat against the end panels 3 and 39 and so that the inner ends of the riser panels 9 and 43 are affixed securely to the right hand portions of handle panels 13 and 22, respectively. Upon completion of this operation the blank appears as depicted in Fig. 5.

The blank of Fig. 5 is then manipulated by doubling the bottom panel 46 back on itself along the fold line 47 to the position depicted in Fig. 6. In like fashion, the auxiliary panel 28 is folded out of the handle panel 21 downwardly along the fold line 29 to the position depicted in Fig. 6.

With glue applied as indicated by stippling in Fig. 6, the blank is then folded along the medial fold lines 23, 24 so that the riser panel 8 comes into flat face contacting relation to the riser panel 42 and so that the riser panel 9 is secured in flat face

contacting relation to the riser panel 43. Simultaneously, the inner surface of handle panel 12 is affixed to the inner surface of handle panel 21 and the lap panel 6 is affixed to the edge of bottom 46 so that upon completion of this folding operation the completed carrier appears in collapsed form as depicted in Fig. 7. During this folding operation the auxiliary panel 28 is securely affixed inside the handle panels 12 and 21 and adds substantial reinforcement to the composite multi-ply handle of the carrier.

For the purpose of maintaining the carrier depicted in Fig. 7 in set-up condition, as shown in Fig. 1, locking notches 49 and 50 are formed at the ends of fold line 47 in bottom panel 46. These notches cooperate with notches 51 and 52 formed in riser panels 8 and 9, respectively in known manner.

Having regard to the provisions of Section 9 of the Patents Act, attention is drawn to our British Patent No. 915,991.

WHAT WE CLAIM IS:—

1. A blank for use in forming an article carrier and comprising a pair of handle panels foldably joined together along a medial fold line, and a pair of riser panels foldably joined respectively to said handle panels along aligned fold lines generally normal to said medial fold line, the end edges of said handle panels adjacent said riser panels being recessed inwardly from said aligned fold lines sufficiently to receive at least a substantial portion of a riser panel of a reversed adjacent nested blank.
2. A blank according to Claim 1 wherein the recessed edges of said handle panels are configured to conform at least generally with the outer edge of a riser panel of a reversed adjacent nested blank.
3. A blank according to Claim 1 or Claim 2 wherein a pair of end panels are foldably joined respectively to said riser panels along parts of said normal fold lines remote from said medial fold line and the end edges of said handle panels are recessed inwardly sufficiently to receive a riser panel of a reversed adjacent nested blank and a portion of the end panel foldably joined thereto.

4. A blank according to Claim 1 comprising a generally rectangular bottom panel, a first side wall panel foldably joined to a side edge of said bottom panel, a first pair of end panels foldably joined respectively to the end edges of said first side wall panel, a first pair of riser panels foldably joined respectively to said first pair of end panels along the edges thereof remote from said first side wall panel, a first pair of handle panels foldably joined respectively to said first pair of riser panels along fold lines which constitute extensions respectively of the fold lines adjoining said riser panels and



said end panels, a second pair of handle panels foldably joined respectively to said first pair of handle panels along fold lines disposed generally normal to the fold lines between said first pair of riser panels and said first pair of end panels, the end edge of each handle panel being recessed inwardly from the fold lines between said first riser panels and said first end panels and being of a configuration which is complementary to a part of the outer edge of one of said first riser panels to accommodate nesting of a reversed adjacent similar blank, a second pair of riser panels foldably joined respectively to said second pair of handle panels along fold lines which constitute extensions respectively of the fold lines between said first pair of end panels and said first pair of riser panels, a second pair of end panels foldably joined respectively to said second pair of riser panels along fold lines constituting extensions of the fold lines between said second riser panels and said second handle panels respectively, a second side wall panel having its end edges foldably joined respectively to the edges of said second pair of end panels remote from said second pair of riser panels, and a lap panel foldably joined to the bottom edge of said second side wall panel.

5. A blank according to Claim 4 wherein the end edges of each handle panel are configured to conform generally to at least a part of the outer edge of one of said riser panels to accommodate side by side nesting of adjacent similar blanks.

6. A blank according to Claim 5 wherein the bottom edges of said end panels are configured to conform to at least a part of the end edge of one of said handle panels.

7. A blank for use in forming an article carrier substantially as hereinbefore described with reference to Figure 2 or Figure 3 of the accompanying drawings.

8. An article carrier formed by folding-up a blank according to any preceding claim.

9. A method for folding-up a blank according to any one of Claims 1-7 to form an article carrier therefrom, substantially as hereinbefore described with reference to Figures 4-7 of the accompanying drawings.

10. An article carrier substantially as hereinbefore described with reference to Figure 1 of the accompanying drawings.

11. An article carrier comprising a bottom wall, side walls foldably joined along opposite side edges to said bottom wall, end panels foldably joined to the end edges of said side walls, riser panels foldably joined to the inner edges of said end panels, the adjacent riser panels being secured together in face contacting relation, a handle panel foldably joined to each riser panel along the edge thereof constituting an extension of the fold line between each riser panel and the associated end panel, said handle panels being secured together in flat face contacting relation to form a multi-ply handle for the carrier, the outer end edge of said handle panels being inwardly recessed and of a configuration which is generally complementary to at least a part of the inwardly protruding edge of one riser panel at each end of the carrier.

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