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R. A. HIMES

2,273,266

BOTTLE CARRIER

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2 Sheets-Sheet 2

Fig. 3.

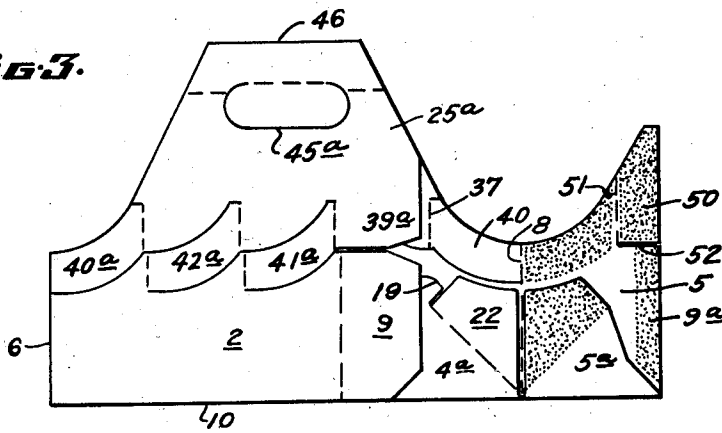


Fig. 4.

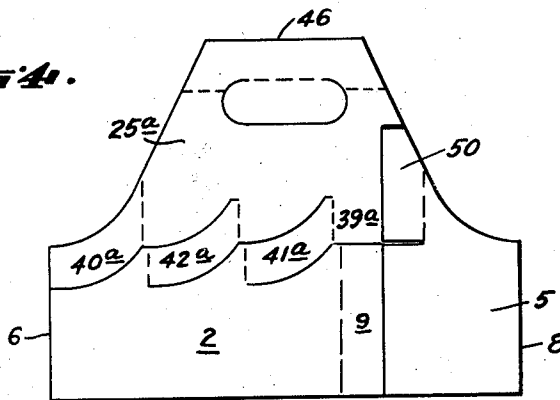
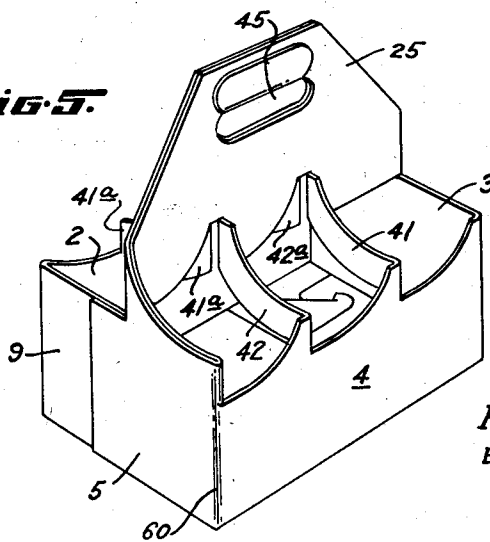


Fig. 5.



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BOTTLE CARRIER

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Application March 28, 1941, Serial No. 385,668

10 Claims. (Cl. 229—52)

This invention relates to a bottle carrier, and particularly to a bottle carrier which may be made from cardboard or like material in flat folded form and which is capable of being opened or extended in one operation to form a bottom, side and end walls and a handle whereby the bottle carrier may be carried.

The object of the present invention is generally to improve and simplify the construction and operation of carriers of the character described; to provide a carrier in which the bottom structure, the side and end walls and the handle, are made from a single blank, said blank being cut and creased so that the carrier may be folded, assembled and glued in flat form, and when so assembled may be opened in one operation, forming a complete carrier ready to receive the bottles to be carried; to provide a handle composed of two sections of cardboard and both sections registering when the carrier is opened for use to form a single handle; to provide a handle which is firmly attached both to the side and end walls of the carrier to permit a comparatively heavy load to be carried without danger of the handle tearing from the side and end walls; and further, to provide a carrier blank which may be formed from a minimum of material.

The carrier is shown by way of illustration in the accompanying drawings, in which

Fig. 1 is a plan view of the bottle carrier blank;

Fig. 2 is a similar view showing the first folding operation of the blank, which is longitudinally thereof and which causes the bottom sections to overlie the side and end wall sections of the carrier, said view also showing the areas to which glue is applied;

Fig. 3 is a similar view showing the first transverse folding operation of the partially folded blank;

Fig. 4 is also a similar view showing the last and transverse folding operation of the partially folded blank, which completes the folding and assembling of the blank; and

Fig. 5 is a perspective view of the bottle carrier in extended or open position ready to receive bottles.

Referring to the drawings in detail, and particularly to Fig. 1, a bottle carrier blank is shown which is cut and creased to form a pair of side wall sections 2 and 4 and a pair of end wall sections 3 and 5. These sections are foldably connected by crease lines formed at the points indicated at 6, 7 and 8 and the side wall section 2 is provided with a creased flap 9 which

serves to connect the free corners of the box when assembling the same.

The bottom of the box is formed from a pair of side bottom sections 2a and 4a foldably joined to the respective side wall sections 2 and 4 by crease lines 10 and 11, and a pair of end bottom sections 3a and 5a are foldably joined to the respective end wall sections 3 and 5 by crease lines 12 and 13.

The side bottom section 2a is cut away as at 14 to form a lug 15, and it is creased as at 17 to form a flap 18 which will hereinafter be referred to as a glue flap. The side bottom section 4a is also creased at one end to form a glue flap 22 similar to the flap 18, and it is cut away as at 19 on its outer edge, to form two lugs 20 and 21. The bottom section 3a is for all practical purposes left intact, as only a portion of the outer edge is cut in an arc, as shown at 23, to provide a clearance space hereinafter to be described. The end bottom section 5a has a similar clearance cut as shown at 23a, and one end is cut away as indicated at 25. The glue flaps 18 and 22 are also provided with arcuate cuts similar to the end bottom sections 3a and 5a, and they are also cut for the purpose of clearance.

Formed integrally with the end wall 3 and the side wall 4 is a handle section 25. This handle is cut along the curved lines indicated by the numerals 27 to 31 inclusive, and by a straight line 32 which is parallel to the crease line 12. The handle is creased along the lines 33 to 38 inclusive, and thus forms two connections 39 and 40, one at each end of the handle, and two intermediate connections 41 and 42, which also serve as spacers between bottles as will hereinafter be described.

The connectors 41 and 42 connect the handle section 25 to the side wall 4, the connector 39 connects it to the end wall 3, and the connector 40 to the end wall 5. The handle is thus connected to the bottle carrier at four points, and any danger of the handle tearing away when the carrier is filled with bottles is eliminated. The handle 25 is offset with relation to the side wall 4, as clearly shown in Fig. 1, and the distance it is offset is indicated by the center line 43—43, which is the center of the handle, and the center line 44—44, which is the center of the side wall 4. This distance is approximately half the width of the end wall 3 and the length of the connectors 39, 40, 41 and 42 will accordingly be the same, as the handle must assume a position central or midway between the side walls 2 and 4 when the carrier is opened for use.

The handle is otherwise provided with an elongated opening 45 to permit introduction of the fingers when carrying, and a crease line 46 is formed adjacent the opening to form a flap 47 which may be folded against the surface 47a and glued thereto to reinforce and strengthen the hand grip portion of the handle.

A second handle section is formed on the blank as shown at 25a. It is offset with relation to the side wall 2 the same distance as the handle section 25 is with relation to the side wall section 4. The connectors shown at 40a, 41a and 42a are cut and creased in the same manner as the connectors 40, 41 and 42, and they are connected to the side wall 2 and the end wall 3 in the same manner as the connectors 40, 41 and 42 are connected to the side wall 4 and the end wall 5. The hand grip portion is also the same except that a flap 45a is left to further reinforce and strengthen the hand grip portion. The connector portion 39a is identical to the connector 39 with the exception that it is not connected to an adjacent end wall but must be glued to the end wall section 5 when the blank is being folded and assembled. A flap 50 is accordingly provided which is connected to the end wall 5 by a crease line 51 and cut free at 52 to permit it to bend.

A bottle carrier blank cut and creased in the manner shown in Fig. 1 may be folded and assembled by machine operation or by hand operation, but as no machine is illustrated, let it be assumed that the blank is to be folded, glued and assembled by hand. If that is the case, the first operation in assembling the carrier will be that of folding the side and end bottom sections along the crease lines 10, 11, 12 and 13 to overlie the wall sections 2, 3, 4 and 5, as shown in Fig. 2. When this has been accomplished, glue is applied to the dotted areas indicated at 18a, 22a, 9a, 50, 40b, 47a, 40c and 47b. The flaps 47 at the outer ends of the hand grips are next folded over the glued areas 47a and 47b, causing them to adhere thereto, after which the side wall section 2, together with the handle section 25a, the flap 9 and the bottom section 2a, are folded on the crease line 6 to overlie the end wall section 3, the bottom section 3a, and to partially overlie the handle section 25, the side wall section 4, and the bottom section 4a, as shown in Fig. 3. This folding operation causes the connector 40a to be permanently glued to the end wall section 3 at 40c, and the flap 18 and the side wall bottom section 2a to become permanently glued to the end wall bottom section 3a, at 18a. The end wall section 5, together with the flap 50 and the end wall bottom section 5a, are folded on the crease line 8 to assume the position shown in Fig. 4; in doing so, the connector 40 becomes permanently glued to the end wall section 5, at 40b, flap 50 becomes glued to the connector 39a, and flap 9 becomes glued to the end wall section 5 by the glue applied to the area 9a.

The folding, assembly and gluing of the several parts of the blank is now completed, and a bottle carrier is formed in a flat folded form with the handle sections 25 and 25a in substantial register, and in this condition may be delivered to the trade; and it may be retained in the flat condition until ready for use.

When the folded carrier is to be opened for use, it is merely necessary to push inwardly on the corner 60 and the corner which is diagonally opposite. In doing so, the side and end wall sections of the carrier will reach a position at right angles to each other, the handle sec-

tions 25 and 25a will remain in register and will extend longitudinally between the side walls 2 and 4 and substantially midway between them. The connectors 41 and 42 will be disposed on one side of the handle sections and at right angles thereto and will be connected to the side wall 4, while the connectors 41a and 42a will be disposed in the same position on the other side and will connect with the side wall 2. The connector 40 will be permanently connected by glue to the end wall 5, and the connector 40a to the end wall 3, while the flap 50 will overlie the connector 39a and be permanently attached by glue. At the same time that the side and end walls, together with the handle sections and connectors, are moving into position during opening of the box, the several bottom sections are also moving into position with relation to each other and will assume a flat interlocked position when the carrier is fully opened.

A detailed description of the manner in which the bottom sections interlock and form a support for each other is thought unnecessary, as the bottom structure is fully described in my copending application entitled "Bottom structure for folding paper boxes," filed March 28, 1941, Serial No. 385,669. Suffice it to say that the carrier, including the bottom sections, is opened in one operation and that when opened a rigid substantial carrier is provided which will safely carry six full bottles without any danger of the handles tearing or the bottom sections giving away.

It was previously stated that the glue tab 18 and the outer end of the bottom section 3a had an arcuate cut formed therein for clearance purposes. It was similarly stated that the glue tab 22 and the adjacent end of the end bottom section 5a were also arcuately cut for clearance purposes. The reason that clearance is required is due to the fact that when the bottom sections 2a, 3a, 4a, and 5a are folded to assume the position shown in Fig. 2, a portion of the glue flap 18 would overlie the connector 40a and the adjacent corner of the bottom section 3a partially overlie the glue area 40c. Similarly one end of the glue flap 22 partially overlies the connector 40 and the adjacent end of the end bottom section 5a partially overlies the glue area 40b. Hence it would not only interfere with the application of glue to the areas 40b and 40c but it would also cause the glue flaps 18 and 22 and the corners of the bottom sections 3a and 5a to become glued in that position when the blank was folded to form the carrier, and the whole device would be inoperative. On the other hand, by forming the arcuate cuts previously described, the corners of several bottom sections will clear the members 40 and 40a and the glue areas 40b and 40c as clearly shown in Fig. 2, and no overlapping or interference will occur.

The bottle carrier constructed as shown can be made from a minimum of material, and it reduces to a minimum hand labor in setting up the carriers. Once it is erected it stays up, and stands alone whether filled with bottles or empty. It saves floor space formerly used for setting up carriers, and adapts itself perfectly to automatic case-filling machines. The ends of the carrier are fully closed, as clearly shown in Fig. 5; thus the carrier is guaranteed against the bottles falling out, and the fully closed ends and bottom prevent dust accumulation and they furnish considerable additional surface for advertising display.

While certain features of my invention have been more or less specifically described, I nevertheless wish it understood that changes may be resorted to within the scope of the appended claims.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

1. A bottle carrier blank cut and creased to form pairs of foldably connected side and end wall sections disposed in end-to-end series, a handle section forming an extension of each side wall section, the center of each handle section being offset with relation to the center of each side wall section, a pair of foldable connectors permanently connecting one handle section to two end wall sections, the other handle section having one connector permanently connecting it to one end wall section and having the other connector free, and a glue tab on one of the end wall sections to receive and secure the free connector.

2. A bottle carrier blank cut and creased to form pairs of foldably connected side and end wall sections disposed in end-to-end series, a handle section forming an extension of each side wall section, the center of each handle section being offset with relation to the center of each side wall section a distance substantially half the width of the end wall sections, a pair of foldable connectors permanently connecting one handle section to two end wall sections, the other handle section having one connector permanently connecting it to one end wall section and having the other connector free, and a glue tab on one of the end wall sections to receive and secure the free connector.

3. A bottle carrier blank cut and creased to form pairs of foldably connected side and end wall sections disposed in end-to-end series, a handle section forming an extension of each side wall section, the center of each handle section being offset with relation to the center of each side wall section a distance substantially half the width of the end wall sections, a pair of foldable connectors permanently connecting one handle section to two end wall sections, the other handle section having one connector permanently connecting it to one end wall section and having the other connector free, a glue tab on one of the end wall sections to receive and secure the free connector, and foldable intermediate connectors connecting each handle section to an adjacent side wall section.

4. A bottle carrier blank cut and creased to form pairs of foldably connected side and end wall sections disposed in end-to-end series, a handle section forming an extension of each side wall section, the center of each handle section being offset with relation to the center of each side wall section a distance substantially half the width of the end wall sections, a pair of foldable connectors on each handle section, one pair of connectors permanently connecting one handle section to two end wall sections, the other handle section having one connector permanently connecting it to one end wall section and having the other connector free, a glue tab on one of the end wall sections to receive and secure the free connector, and a glue tab on one of the side wall sections to connect the free corners of the carrier when it is assembled.

5. A bottle carrier blank cut and creased to form pairs of foldably connected side and end wall sections disposed in end-to-end series, a handle section forming an extension of each side

wall section, the center of each handle section being offset with relation to the center of each side wall section a distance substantially half the width of the end wall sections, a pair of foldable connectors on each handle section, one pair of connectors permanently connecting one handle section to two end wall sections, the other handle section having one connector permanently connecting it to one end wall section and having the other connector free, a glue tab on one of the end wall sections to receive and secure the free connector, a glue tab on one of the side wall sections to connect the free corners of the carrier when it is assembled, and foldable intermediate connectors connecting each handle section to an adjacent side wall section.

6. A folding bottle carrier having foldably connected side and end walls, side bottom sections and end bottom sections foldably connected to the lower edges of the respective side and end walls, a pair of handle sections foldably connected to the end walls, said side and end walls and the handle sections adapted to lie flat with the side bottom and end bottom sections disposed between the side and end walls when the carrier is folded, means for automatically positioning the handle sections centrally and longitudinally of the carrier and in register with each other in unison with the unfolding or opening of the side and end walls, and means for simultaneously extending the side and end bottom sections to form a flat bottom for the carrier.

7. A folding bottle carrier having foldably connected side and end walls, side bottom sections and end bottom sections foldably connected to the lower edges of the respective side and end walls, a pair of handle sections foldably connected to the end walls, said side and end walls and the handle sections adapted to lie flat with the side bottom and end bottom sections disposed between the side and end walls when the carrier is folded, means for automatically positioning the handle sections centrally and longitudinally of the carrier and in register with each other in unison with the unfolding or opening of the side and end walls, means for simultaneously extending the side and end bottom sections to form a flat bottom for the carrier, and foldable means connecting the handle sections with the respective side walls of the carrier, said means lying flat when the carrier is folded and extending crosswise of the carrier when it is unfolded to strengthen the handle sections and to form partition members between bottles placed in the carrier.

8. A bottle carrier blank cut and creased to form pairs of foldably connected side and end wall sections disposed in end-to-end series, a pair of side bottom sections foldably connected to the side wall sections, a pair of end bottom sections foldably connected to the end wall sections, a handle section forming an extension of each side wall section, the center of each handle section being offset with relation to the center of each side wall section, a pair of foldable connectors permanently connecting one handle section to two end wall sections, the other handle section having one connector permanently connecting it to one end wall section and having the other connector free, and a glue tab on one of the end wall sections to receive and secure the free connector.

9. A bottle carrier blank cut and creased to form pairs of foldably connected side and end wall sections disposed in end-to-end series, a

pair of side bottom sections foldably connected to the side walls, a pair of end bottom sections foldably connected to the end walls, a handle section forming an extension of each side wall section, the center of each handle section being offset with relation to the center of each side wall section a distance substantially half the width of the end wall sections, a pair of foldable connectors on each handle section, one pair of connectors permanently connecting one handle section to two end wall sections, the other handle section having one connector permanently connecting it to one end wall section and having the other connector free, a glue tab on one of the end wall sections to receive and secure the free connector, and a glue tab on one of the side wall sections to connect the free corners of the carrier when it is assembled.

10. A bottle carrier blank cut and creased to form pairs of foldably connected side and end wall sections disposed in end-to-end series, a pair

of side bottom sections foldably connected to the side walls, a pair of end bottom sections foldably connected to the end walls, a handle section forming an extension of each side wall section, the center of each handle section being offset with relation to the center of each side wall section a distance substantially half the width of the end wall sections, a pair of foldable connectors on each handle section, one pair of connectors permanently connecting one handle section to two end wall sections, the other handle section having one connector permanently connecting it to one end wall section and having the other connector free, a glue tab on one of the end wall sections to receive and secure the free connector, a glue tab on one of the side wall sections to connect the free corners of the carrier when it is assembled, and foldable intermediate connectors connecting each handle section to an adjacent side wall section.

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