Feb. 20, 1940. H. Z. GRAY 2,191,197

METHOD OF MAKING BOTTLE CARRIERS

Filed June 2, 1939

Fig.-1

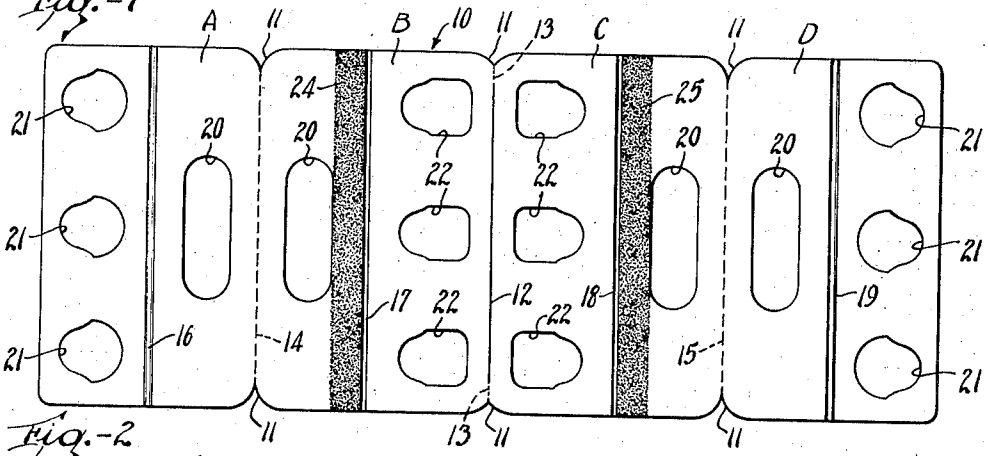


Fig.-2

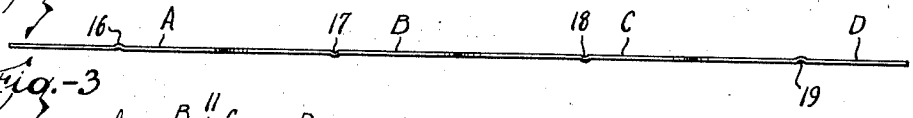


Fig.-3

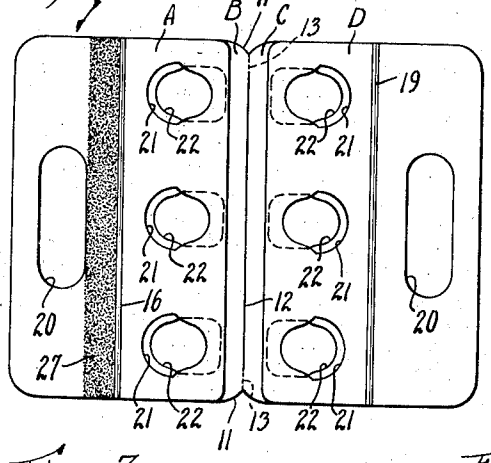


Fig.-4

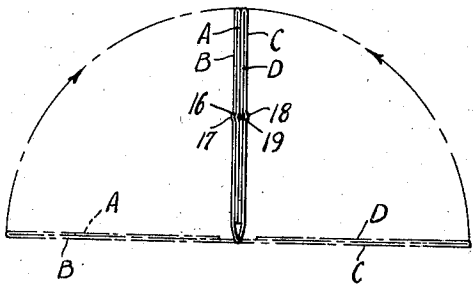


Fig.-7

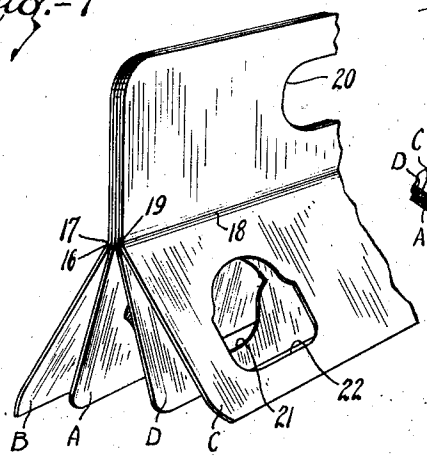


Fig.-5

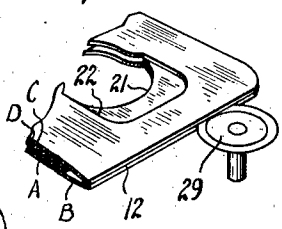
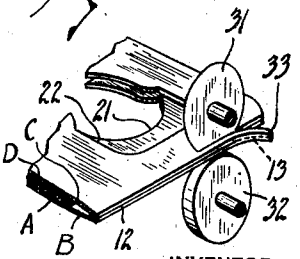


Fig.-6



INVENTOR

HARRY Z. GRAY

BY

Ely & Frye

ATTORNEYS

Patented Feb. 20, 1940 2,191,197

UNITED STATES PATENT OFFICE

2,191,197

METHOD OF MAKING BOTTLE CARRIERS

Harry Z. Gray, Lebanon, Ohio

Application June 2, 1939, Serial No. 276,939

5 Claims. (Cl. 93—1)

This invention relates to methods of making bottle carriers, and more especially it relates to improved procedure for the manufacture of bottle carriers of heavy, stiff cardboard or similar material, which carriers support the bottles solely by engagement with the necks thereof.

The bottle carrier constituting the product of the improved method is essentially similar to the bottle carrier constituting the subject matter of my copending application for U. S. Letters Patent, Serial No. 163,019, filed September 9, 1937.

The chief objects of the invention are to provide in an improved and more facile manner for the manufacture of bottle carriers of the character mentioned; and to provide a method that is adapted to be practised by mechanical means, thus effecting a saving of time and labor. In general, the invention aims to provide a method by means of which bottle carriers are readily produced in quantity and at low cost. Other objects will be manifest as the specification proceeds.

Of the accompanying drawing:

Fig. 1 is a plan view of a cardboard blank cut to shape and apertured, the production of which constitutes the first step of the improved method;

Fig. 2 is an edge of said blank;

Fig. 3 is a plan view of the blank as it appears after the first folding operation;

Fig. 4 is an end view of the blank as it appears after the second folding operation;

Fig. 5 is a fragmentary perspective view illustrating one way of severing a margin of the structure shown in Fig. 4;

Fig. 6 is a similar perspective view illustrating another way of severing a margin of the folded blank; and

Fig. 7 is a fragmentary perspective view of a bottle carrier produced by the method of the invention.

Referring now to Fig. 1 of the drawing, there is shown a bottle carrier blank 10 of cardboard or other suitable foldable sheet material, which blank may be died or otherwise severed from a larger sheet of the material. The blank is rectangular in plan and consists of four integral panels A, B, C and D, respectively, of which the end panels A and D are slightly narrower than the intermediate panels B and C. The longitudinal margins of the blank 10 are arcuately indented, as shown at 11, 11, at the lines of juncture of adjacent panels. At the juncture of panels B, C, the blank is slit at 12, which slit terminates somewhat short of the opposite margins of the blank to provide unsevered connections between said panels, said connections however being weakened by a series of spaced, narrow incisions extending partly through the blank from the under side thereof as indicated by broken lines at 13, 13. At the juncture of panels A, B, and C, D, the blank is incised at 14, 15 respectively, from the under side of the blank, said incisions extending partly through the blank and forming weakened lines along which the blank subsequently is folded. Panels A and B are creased, scored or furrowed at 16, 17, which creases or furrows are parallel to incision 14 and spaced equidistant laterally thereof, said furrows being on opposite sides of the blank and constituting lines of flexure in the finished carrier as subsequently will be explained. In like manner panels C and D are creased or furrowed at 18, 19. The panels A, B, C, and D also are formed with apertures, which apertures conveniently may be formed concurrently with the cutting of the blank from the larger sheet of material. Thus each blank is formed with an elongated hand-grip or finger opening 20 formed adjacent fold lines 14 or 15, and with three apertures for receiving the neck of a bottle, the latter apertures being formed along the marginal edge of each panel remote from its fold line, and being designated 21 in panels A and D and designated 22 in the panels B and C. Apertures 21, 22 are of somewhat different contour and function in a manner subsequently to be explained. The arrangement is such that the blank may be said to consist of two, identical, aligned sections disposed on opposite sides of the slit 12, the panels A, B constituting subsections of one of the said sections, and panels C, D constituting subsections of the other of said sections.

After the blank 10, constructed as described, has been produced, the next step of the method is to apply an adhesive, such as glue, to the blank in two, separated, local zones or regions 24, 25 thereof, said regions extending transversely of the blank and longitudinally of panels or subsections B and C thereof, on the upper face of the blank as it appears in Fig. 1. The width of the glued zones 24, 25 is such as to extend from the creases 17, 18 of the respective panels B and C to the adjacent margin of the apertures 20 therein.

The next step of the method is to fold the two outermost panels or subsections A, D over onto the intermediate panels B, C, to form a two-ply structure, as is clearly shown in Fig. 3, the glue zones 24, 25 thus being disposed between the panels A, B and C, D, respectively, and serving

permanently to adhere the same to each other. The folding operation described is facilitated by the presence of the incisions 14, 15 between the outermost panels and the intermediate panels. When the blank is folded as shown in Fig. 3, the finger openings 20 of panels A and D are exactly in registry with the apertures or finger openings 20 of panels B and C, respectively, and the apertures 21 of panels A and D are partly in registry with the apertures 22 of panels B and C. Because panels A and D are narrower than the panels B and C, their adjacent margins will be disposed somewhat laterally of the slit 12 between panels B and C, as is clearly shown in Fig. 3 and Fig. 4.

After the blank is folded as in Fig. 3, the next step of the method is to apply a local zone of adhesive material 27 to the exposed face of one of the subsections, herein shown as panel A, said zone being of such width as to extend from the crease 16 to the adjacent margin of aperture 20, and of such length as to extend from end to end of the panel. After the glue zone 27 is applied, the sections of the two-ply structure are folded along slit 12 to bring panels A and D into face to face relation with glue zone 27 therebetween and thereby to form the four-ply structure shown in Fig. 4 wherein all of the finger openings and bottle neck receiving openings are in substantial registration. The arrangement is such that the four panels are permanently held together in face to face relation by the glued zones 24, 25 and 27, all of which zones are disposed on the same side of the creases 16 to 19. On the other side of the latter, panels B and C are still united at their margins by reason of the unsevered regions at each end of the slit 12.

The final step of the process consists of separating the two sections which are still connected at the adjoining margins of panels B and C. Figure 5 shows one manner in which this may be accomplished, namely, by slitting. Thus the unsevered portion of the structure at each end of slit 12 may be severed by means of a rotary cutter 29 that is disposed parallel to the plane of the folded carrier structure, the cutter entering between panels B and C and severing the connecting material that originally united said panels.

Alternatively, the panels B and C may be separated by severing a narrow strip of material from their conjoined margins. As shown in Fig. 6, this may be done by rotary shears consisting of cooperating discs 31, 32 of which 31 is a cutter. This method removes a strip 33 from the folded carrier structure and thus separates panel B from panel C. This completes the manufacture of the carrier.

The finished bottle carrier is shown in Fig. 7 wherein it will be seen that the portions of the panels that are adhered to each other constitute a hand-grip portion, and the unadhered portions of the panels constitute flaps that are hingedly connected to the hand-grip portion along the creases or furrows 16 to 19. The said flaps are movable relatively of each other, and when the carrier is in use two of the flaps extend obliquely laterally to one side of the hand-grip portion and two extend obliquely laterally to the other side of the hand-grip portion. When two companion flaps are in face to face relation, the apertures 22 of one flap partly overlap the apertures 21 of the other flap to define a series of through openings in the flaps, which openings are of smaller size than the bead portion on the necks of bottles, but larger than said necks, whereby the bottles may be retained in said openings and lifted by means of the carrier. Since the flaps are movable relatively of each other they are readily separated to enable the bead portions of the bottles to be passed through the respective apertures 21, 22 in succession, in the mounting or removal of the carrier.

The improved method enables the bottle carriers to be manufactured rapidly in large quantities at low cost, and achieves the other objects set out in the foregoing statement of objects.

Other modification may be resorted to without departing from the spirit of the invention or the scope thereof as defined by the appended claims.

What is claimed is:

1. The method of making bottle carriers which comprises forming a blank of cardboard or similar sheet material, which blank consists of a succession of four panels constituting two connected sections of two subsections each, applying a zone of adhesive material locally to one subsection of each section, folding the two end subsections onto their companion sections and adhering them thereto by means of said zones of adhesive material, applying a zone of adhesive material locally to the exposed face of one of the subsections of the folded structure, folding the latter along its medial line to bring the two sections together with the zone of adhesive material therebetween to produce a four-ply structure, and thereafter separating the sections along the line upon which the structure was last folded.

2. The method of making bottle carriers which comprises forming and suitably aperturing a blank of cardboard or similar sheet material, which blank consists of a succession of four panels constituting two connected sections of two subsections each of which the end panels are somewhat narrower than the intermediate panels thereof applying a zone of adhesive material, transversely of the blank, locally to one subsection of each pair of subsections, folding the two end panels onto said intermediate panels so they are adhered thereto by said adhesive material therebetween, to form a two-ply structure, applying a zone of adhesive material locally to the exposed face of one of the panels of the folded structure, folding the latter along its medial line to bring one section thereof onto the other section with the zone of adhesive material therebetween, and thereafter eliminating the connection between the panels that originally were the two intermediate panels of the blank.

3. A method as defined in claim 2 in which the last step is effected by removing a narrow strip of material from the conjoined margins of the panels.

4. The method of making bottle carriers which comprises forming and suitably aperturing a rectangular blank of cardboard or similar sheet material, which blank consists of a series of four panels, bringing said panels into face to face relation to provide a four-ply structure, and concurrently adhering said panels to each other on one side of the longitudinal center-line of the folded structure, whereby the unadhered portions of the panels on the other side of the center-line of the structure may be separated and flexed relatively of each other to constitute a plurality of flaps.

5. The method of making bottle carriers which comprises providing two aligned sections of cardboard or similar sheet material, in which each section comprises a pair of subsections separated by fold lines and having cooperating finger open-

ings formed adjacent said fold lines and bottle neck receiving openings formed along the marginal edges of each section remote from its fold line, applying to one subsection of each pair a zone of adhesive material adjacent the finger opening, folding the two end subsections so as to lie upon the respective companion subsections to cause them to adhere by means of said zones of adhesive, applying an additional zone of adhesive material to the exterior of one of the folded subsections adjacent its finger opening, and thereafter bringing the faces of the two sections together with the last mentioned zone of adhesive material therebetween to produce a four-ply structure in which all of the finger openings and bottle neck receiving openings are in substantial registration.

HARRY Z. GRAY.