Dec. 26, 1967 R. A. CARLE ET AL 3,359,873

ARTICLE CARRIER

Original Filed Sept. 8, 1964

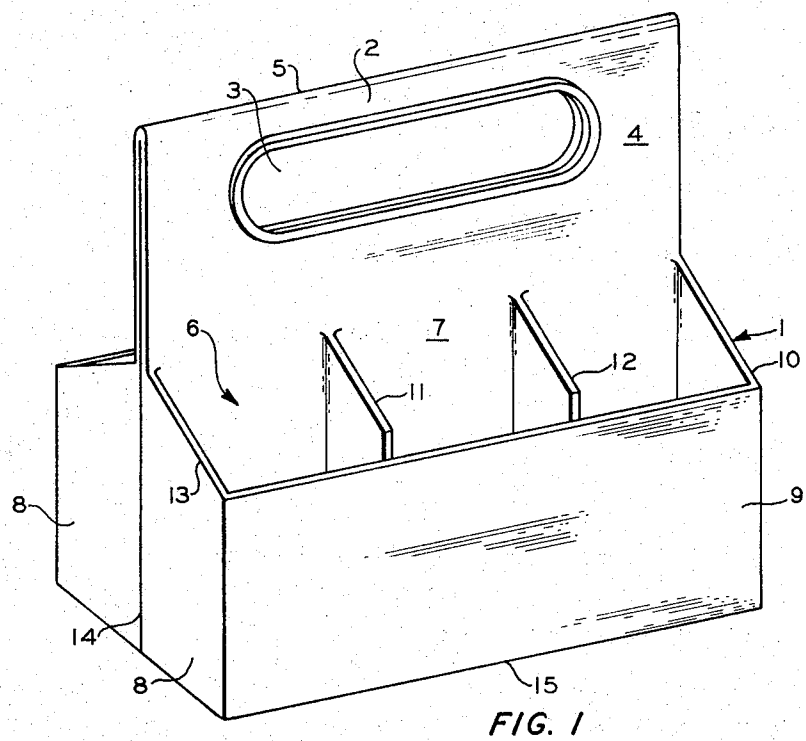


FIG. 1

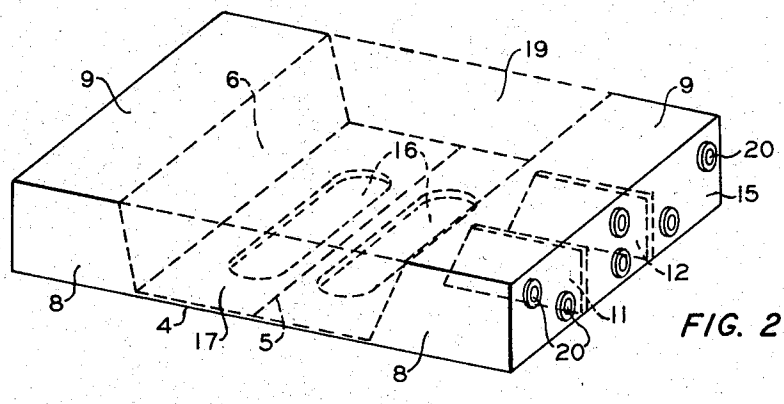


FIG. 2

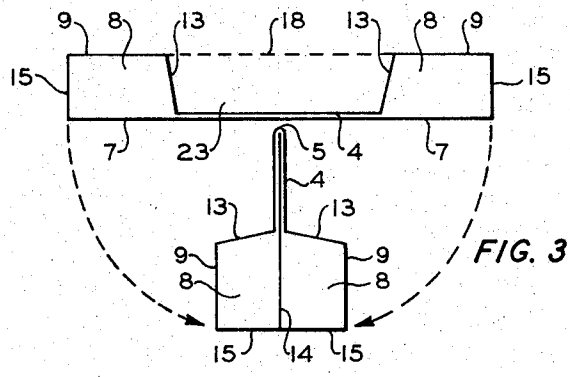


FIG. 3

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United States Patent Office 3,359,873 Patented Dec. 26, 1967

3,359,873
ARTICLE CARRIER

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Original application Sept. 8, 1964, Ser. No. 394,831. Divided and this application Oct. 3, 1966, Ser. No. 583,892

1 Claim. (Cl. 93—37)

This is a division of application Ser. No. 394,831 filed Sept. 8, 1964, now abandoned.

This invention relates to an article carrier and a method of forming and assembling same.

Article carries are known which are composed of readily disposable material such as cardboard and the like, but this type of carrier has a limited life of usability and an even more limited life of attractiveness. Furthermore, such carriers are quite susceptible to damage by moisture thereby shortening the limited life of said carrier. Heretofore, it has been difficult to form a plastic carrier which would have a long life and be moisture proof by commercial plastic forming methods.

Accordingly, it is an object of this invention to provide a new and improved plastic article carrier which is resistant to fluid damage and has a long functional and appearance life. Another object of this invention is to provide a new and improved method of making the carrier of this invention.

Other aspects, objects and the several advantages of this invention are apparent from a study of the disclosure, the drawings, and the appended claims.

According to this invention, there is provided a closed, rectangular, plastic container which is adapted so that a multi-sided component can be removed from a central portion thereof, thereby providing an article having two pockets spaced from one another by means of that part of the central portion which was not removed and which is hereinafter referred to as a center separator. Thus, according to this invention, there is provided a method wherein the container is formed, a central portion of the container is removed, and the pockets thereby created are moved into a contiguous relationship by bending about a center line in the central separator passing between the pockets. By this method, the container is formed, then an intermediate article is formed from the container and then the carrier is formed from the intermediate article. The abutting pockets can then be permanently or temporarily attached to each other in order to form a rigid and fixed carrier having two pockets. The pockets can have dividers integral therewith and the dividers can be formed at the same time the container is formed.

In the drawings:

FIGURE 1 is a perspective view of the carrier of this invention.

FIGURE 2 shows a perspective view of the closed container with dividers in either end thereof and having the central portion to be removed outlined thereon.

FIGURE 3 shows a side view of the container of FIGURE 2 with the central portion removed and shows the sequence of folding the pockets into a contiguous relationship about a bend line in the center separator to form the carrier of FIGURE 1.

More specifically, there is shown in FIGURE 1 an article carrier **1**, having a handle **2** formed by aperture **3** in center separator **4**. The center separator can be provided with an indicating means such as perforations which, when removed, provides a handle aperture. The center separator also can have a central transverse line of weakness or bend line indicator about which said

pockets can be folded into a contiguous relationship. Center separator **4** is folded along line **5** and is integral with pockets **6**, **6** which are defined by vertical walls **7**, **7**; **8**, **8**; **9**, **9**; and **10**, **10**. Pockets **6**, **6** have therein two dividers **11**, **11** and **12**, **12** and have side walls **8**, **8** tapered as shown by lines **13**, **13** in a manner to facilitate easy removal of articles from the pocket. The dividers which are integral with at least one side of said container can be of any desired height, width or thickness. The height of the dividers being the vertical length between bottom **15** (FIGURE 2) and aperture **3**. The width being the distance across the divider when traveling from wall **8** to wall **10**. The thickness being the distance through the divider when traveling from wall **7** to wall **9**. Said dividers can extend the full length of said container, i.e. the distance between bottom walls **15**, **15** (FIGURE 3), but preferably will extend only for a distance equal to the height of the pocket, i.e. the vertical distance of walls **7**, **8**, **9**, and **10** between bottom **15** and aperture **3**, after said central portion is removed. If the dividers do extend the full length of the container, they can be cut out to the same extent that the central portion is cut out and at the same time the central portion is removed. Alternatively, the central portion can be removed without removing the dividers, thereby leaving same on the center separator to rigidify it. The dividers can be integrally joined to one or more sides of said pockets and can extend across the full thickness, i.e. the distance between sides **7** and **9**, of said pocket, thereby rigidifying same and forming an enclosed portion within the pocket. The dividers can also extend for any distance intermediate the thickness of the pocket. Although sides **8**, **8** are shown to have a tapered line **13** as an upper edge, any suitable shape for line **13**, e.g. curved, is within the scope of this invention. Pockets **6**, **6** abut along line **14**, thereby forming a flat end section of said carrier from side walls **8**, **8**. The joining of the pockets can be effected by any suitable means, such as spot or fusion welding through the abutting walls of said center separator, stapling or gluing. The abutting pockets can also be temporarily joined by means of a releasable locking means so that the carrier can be unfolded along the bend line and stored in a flat, horizontal or vertical, position when not in use.

FIGURE 2 shows a container which is formed so that all sides thereof are closed and so that opposite ends thereof contain dividers similar to those shown by reference numerals **11** and **12** in bottom wall **15**. For the sake of simplicity, no dividers are shown in the opposite end of the container. Wall **15** of the container also contains bosses **20** which can be cut or otherwise treated to provide drain holes. The container also contains handle indentations or other indicia **16** which can be removed to form the handle aperture **3** of FIGURE 1. The container also has between the handle indentations **16** a bend line or other line of weakness **5**. A three-walled central portion defined by walls **17**, **18**, and **19** (FIGURE 3) can be cut from the container, thereby providing an article composed of a center separator **4** which integrally joins pocket **6**, **6**. The central portion of the container which is removed to provide pockets joined by a center separator can be a three-sided section, or more or less if desired. The central portion can be removed from the central area of said container by any desirable means. A desirable means of cutting is the use of a hot instrument which cuts by melting the material.

FIGURE 3 shows a container as described in FIGURE 2 with the center section removed. Reference numeral **18** in FIGURE 3 is supplied only to facilitate an understanding of FIGURE 2 and would not be present after the central section defined by walls **17**, **18**, and **19** (FIGURE 2) is removed. As shown in FIGURE 3,

center separator **4** is folded about line **5** to bring walls **7**, **7** of pockets **6**, **6** into a contiguous relationship along line **14**, thereby providing a carrier such as that described in FIGURE 1.

The container itself, including the integral and internal dividers, can be formed by many known processes. Generally, any processing technique utilizing a differential in pressure as the motivating force for forming a container is utilizable to form the container of this invention. Generally, the container will be formed from plastic such as polypropylene and polyethylene and, therefore, can be made by such known methods as blow molding and vacuum forming. When utilizing the blow molding technique, said container can be formed either from a singular, tubular parison or from two separate sheets of material which are clamped within a mold and internally blown to conform to the internal configuration of said mold.

The thickness of the walls of the articles of this invention depends primarily upon the use to which the articles are to be subjected as well as the desired life of said articles. When composed of polyethylene, polypropylene, and other similar solid polymers, the wall thickness is desirable in the range of about 2 to about 30 mils and preferable in the range of about 5 to about 20 mils. The durability of the articles is increased by increasing thickness, however, the flexibility is decreased by said increasing thickness. Thus, if it is desired to produce a container or carrier which is capable of being folded into a flattened position for more economical transportation, etc., when not in use, it is preferable to use a wall thickness which is at the lower end of the above-mentioned ranges, for example 2 to 12 mils.

Reasonable variations and modifications of this invention can be made, or followed in view of the foregoing, without departing from the spirit or scope thereof.

We claim:

A method of forming a carrier comprising a closed, rectangular, plastic unitary container, said container having integral therewith at least one divider in each end thereof in a position such that when a central section of said container is removed the pockets formed by the closed ends of said container have said dividers therein which dividers will serve to separate articles transported in the pockets of said carrier, removing from a central area of said container a tri-sided section of material to thereby provide an article comprising a single, flat web of plastic material comprising only one side of said container, said web separating and integrally joining pockets formed by the closed ends of said container, moving said pockets into an abutting relationship by bending said web about a center line therein which passes transversely of said web and between said pockets thereby providing a carrier composed of contiguous pockets integrally joined by said web, a double thickness of which extends upwardly above the upper surface of said pockets, said container having preformed areas on opposite sides but adjacent said center line which areas align with one another when removed and when said pockets are moved into an abutting relationship thereby defining a handle means for said carrier, opposite ends of said container which form the bottom of said pockets when said pockets are moved into an abutting relationship having preformed areas that define drain holes when removed and removing said preformed areas.

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