

June 10, 1958

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2,838,220

CONTAINER WITH INTEGRAL SUCTION TUBE

Filed May 23, 1955

2 Sheets-Sheet 1

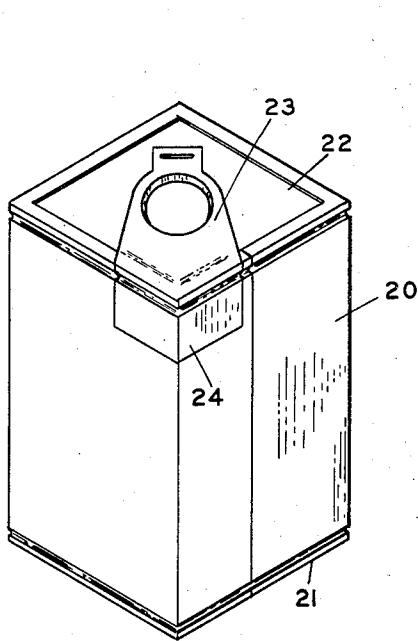


Fig 1

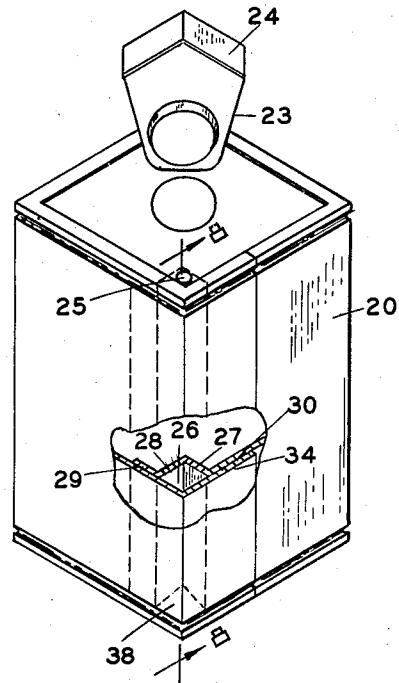


Fig 2

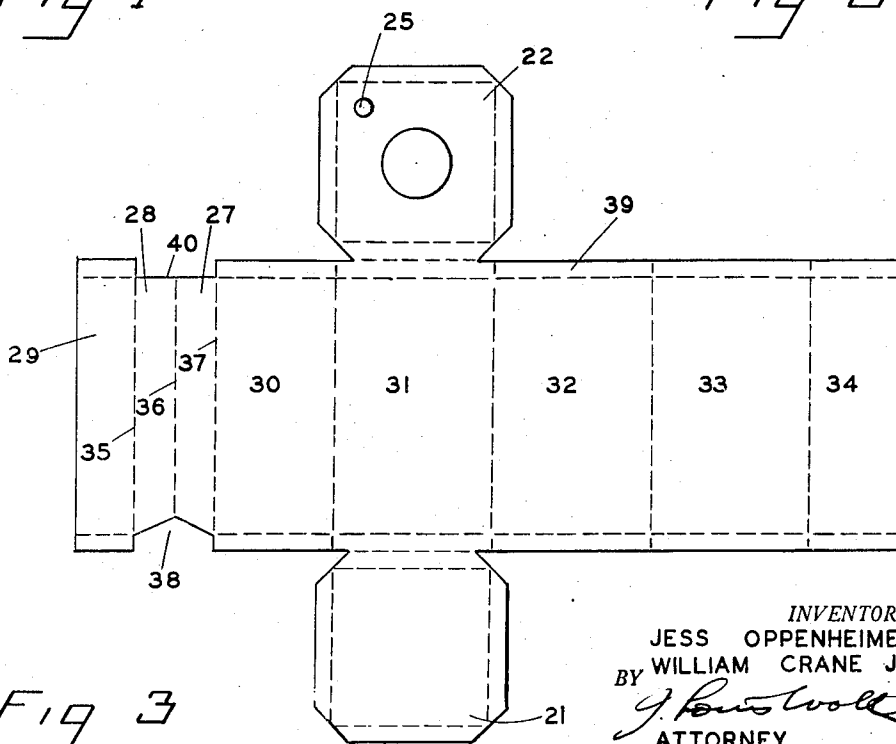


Fig 3

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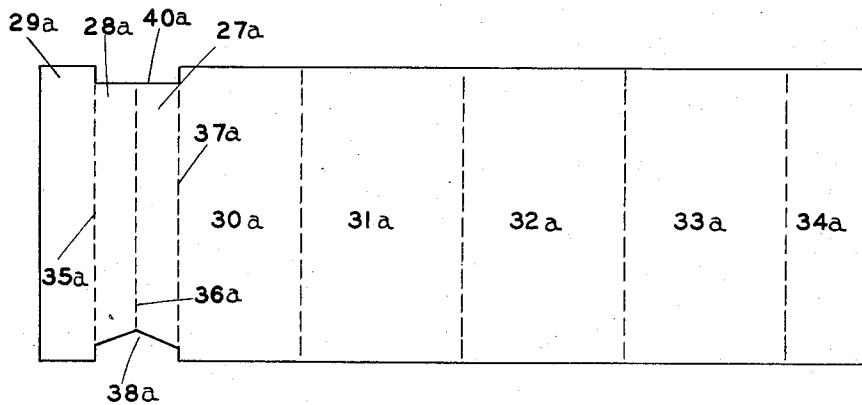


Fig 4

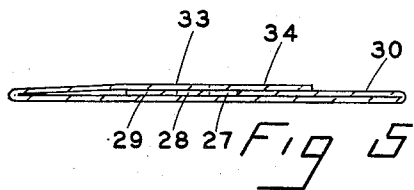
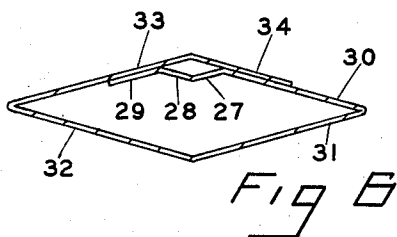
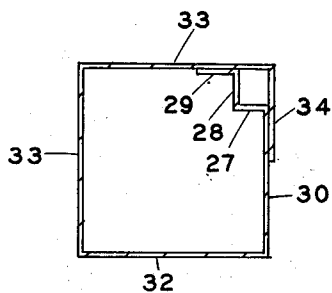


Fig 7

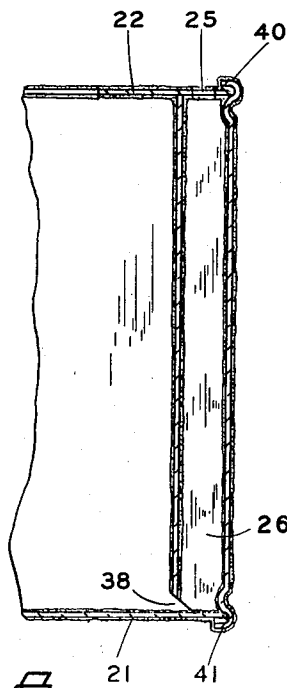


Fig 8

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CONTAINER WITH INTEGRAL SUCTION TUBE

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Application May 23, 1955, Serial No. 510,074

3 Claims. (Cl. 229—7)

This invention relates to beverage containers and more particularly to such containers having incorporated therein, as an integral part thereof, a tube or channel to permit the imbibition of the beverage by suction.

An important object of the invention is the provision of a beverage container having a suction tube formed in a sidewall thereof in an integral and simple manner. A further object of the invention is to provide such a beverage container in which the sidewalls thereof, or in certain cases the sidewalls, top and bottom, as well as the suction tube, may be formed from a single preformed sheet or blank of paper or other suitable material.

Another object of the invention is the provision of a beverage container or carton having sidewalls, top and bottom, and a suction tube formed integrally with a sidewall communicating with an opening in the top of the container which opening is exposed for use by the removal of a sanitary protective and sealing member.

An additional object of the present invention is the provision of a drinking cup construction having a suction tube formed integrally in the sidewall thereof and extending substantially to the edge or lip of the container, such cup with its tube formed from a single blank of sheet material. A still further object of the invention is the provision of such a cup formed of relatively light and flexible sheet material wherein the suction tube is reinforced to minimize collapse during use.

A yet further object of the invention is the provision of a simple method for forming containers of the type above described from sheet material.

Further objects of the invention and advantages thereof are described in the following specification and drawings which illustrate several embodiments of drinking vessels and cartons constructed according to the invention.

In the drawings:

Figure 1 is a view in perspective showing one type of beverage carton to which the invention is applicable.

Figure 2 is a view corresponding to Figure 1 but partly in cross section to show the tube construction and with the sanitary sealing cap open.

Figure 3 is a plan view of a precut blank of sheet material used in forming the carton illustrated in Figures 1 and 2.

Figure 4 is a plan view of an alternative type of preformed blank also used in forming cartons of the type shown in Figures 1 and 2.

Figures 5, 6 and 7 are cross-sectional views showing the sidewalls of the carton of Figures 1 and 2 as formed from the blanks of Figures 3 or 4, illustrating the sequence of folding operations.

Figure 8 is a vertical cross section taken along lines 8—8 of Figure 2 illustrating the construction and arrangement of the suction tube.

Standard types of dairy cartons comprise blanks which are cut, scored and glued to form flat tubular knocked-down containers. Such carton blanks after folding and gluing are shipped in this form to the packager of the

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dairy products. The cartons are usually set up by machines which erect the cartons and close the bottoms, after which the cartons are waxed or paraffined to moistureproof the material and seal the points. The cartons are then filled and closure is effected by suitable means. Other types of beverage containers as well as paper cups, may be formed and shipped prior to filling and use.

Referring to the drawings in detail, Figures 1-8, inclusive, are directed to one form of the invention as adapted to a rectangular type of beverage container as commonly used for beverages such as milk, fruit juice, or the like. Container 20 is formed with a bottom 21 and top 22 of sheet paper. A protective sealing cap 23 is formed with an overhanging lip portion 24 in order to provide a sanitary area for reasons which will appear below. In Figure 3 is illustrated a precut blank of heavy paper in which the sidewalls, top and bottom have been preformed. This blank is formed with top and bottom 21 and 22. The top is formed with a center hole for filling and pouring and also has a small opening 25 in one corner. Sidewall areas 30, 31, 32 and 33 are defined by crease or fold lines shown by dotted lines separating each area. In order to permit the formation of the integral tube referred to, one sidewall area 30 is formed with areas 27, 28 and 29 adjacent one end of the blank as shown, defined by fold or crease lines formed by pressure or crimping as shown by dotted lines 35, 36, 37. Areas 27 and 28 are formed with a triangular or other shaped cutout area 38. The other end of the blank is formed with an extension 34.

In forming the carton the blank is folded flat with the sidewall areas as shown in Figure 5, in such a manner that area 29 is adhered to the inner surface of side panel 33, with extension 34 being adhered to the outer surface of panel 30 as shown more clearly in Figures 6 and 7. This is done by means of an adhesive applied to the contacting areas. After the sealing, the flattened assembly is opened to form the rectangular member illustrated in Figure 7, first passing through the stage shown in Figure 6. During the unfolding the tube is formed by areas 27 and 28 being forced inward bending at lines 35, 36 and 37, with the walls of the tube being formed by areas 27, 28 and portions of side panels 30 and 33 as shown in Figures 6 and 7. The top and bottom are then folded over and the edges united to the sidewalls by crimping the edge areas defined by the dotted lines shown by way of example by 39 and similar areas in Figure 3. The edge crimping results in a structure as shown at 40 and 41 of Figure 8. The assembly is carried out so that the top edge portions of areas 27 and 28 abut against the bottom surface of the top of the carton. After assembly the container is usually dipped in wax to form a liquid-proof and leak-proof container. If desired, the paper of the blank may be formed with a preliminary wax coating and the points sealed by heat and pressure during assembly, with a wax after dip being used if necessary. In order to insure a fluid-tight seal the edge and corresponding areas of the cover on the inner surface may be provided with an extra layer of wax or other adhesive material so that during assembly the edges are sealed to the cover.

The resulting suction tube is formed integrally with the sidewalls of the container as shown in the cross-sectional portion of Figure 2 with areas 29 and 34 adhered to the corresponding walls. By lifting up member 23 which has been attached to the cover the area covered by flap portion 24 is exposed. When the lips of a person desiring to drink the contents are placed over the corner area and over opening 25, the contents are readily imbibed with suction passing through opening 38.

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Figure 4 illustrates an alternative form of blank similar to that shown in Figure 3, but without the top and bottom portion attached. In this form the folding of the sidewalls is carried out in the same way but with the top and bottom portions being affixed separately in the conventional manner by crimping or otherwise. This results in the carton being formed with sidewalls 30a, 31a, 32a, 33a and with flap portions 29a and 34a adhered to the sidewalls in the same manner as corresponding portions are adhered in Figures 6 and 7. The tube is formed along lines 35a, 36a and 37a with areas 27a and 28a folded inward. Top edge 40a abuts the inside of the cover and, if necessary, may be adhered as described above.

Further modification may be made in the present invention without departing from the spirit thereof.

Having thus described the invention, what is claimed and desired to be protected by Letters Patent is:

1. A beverage container having a polygonal horizontal cross-section with a plurality of sidewalls, and bottom and top portions affixed thereto to form said container, said sidewalls being formed of a sheet of material with vertical edge portions overlapping and adhered adjacent one corner of the container, one of said edge portions being folded inwardly of the container longitudinally of the corner and intermediate the overlapping edges to define with the overlapping opposite edge and with the corner of the container an elongated tube extending longitudinally of the sidewalls, said inwardly folded edge portion having an opening adjacent the bottom of the container only to provide an inlet opening, the top of the resulting tube terminating at and engaging the top of the container, a corner opening in the top portion of the con-

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tainer coextensive with and communicating with the upper end of the tube to provide an outlet opening in the top of the container communicating with the interior thereof, a second opening in said top portion communicating with the interior of the container, said openings thereby providing separate inlet and outlet means for fluid, and a removable protective flap covering both of said openings and extending to the corner of the container to seal the contents, said contents being capable of being imbibed by raising of said protective flap and the application of suction through the lips of a consumer to the opening in the corner of said top portion.

2. A beverage container according to claim 1 wherein the container has a rectangular horizontal cross-section with four sidewalls.

3. A beverage container according to claim 1 wherein the protective flap extends to the corner and depends downwardly over the sidewall areas adjacent thereto in order to provide a protective covering over an area adjacent to the outlet opening of the tube.

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