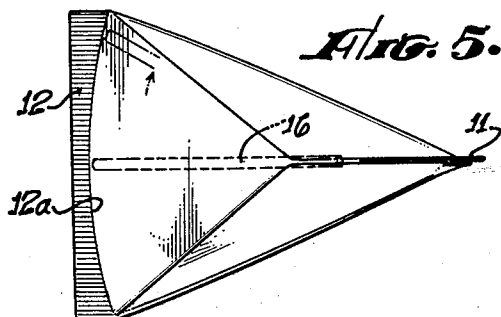
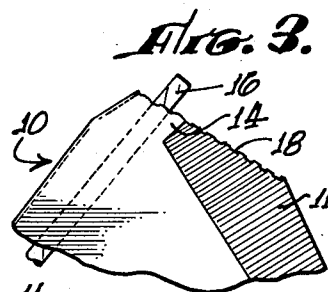
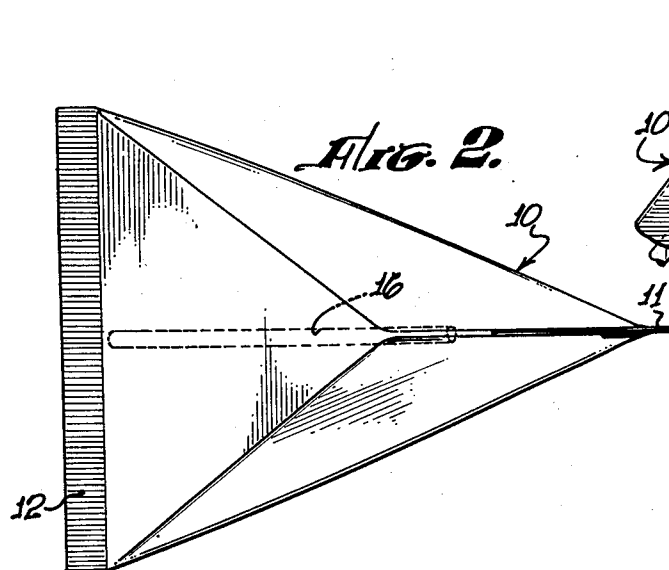
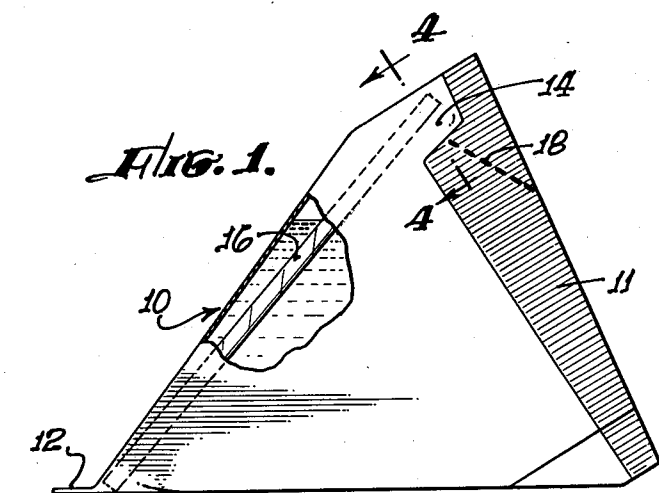


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W. S. SCHNEIDER
CONTAINER WITH BUILT-IN STRAW
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CONTAINER WITH BUILT-IN STRAW

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The present invention relates generally to containers having flexible walls made of sheets or webs of relatively thin material and used for packaging liquids, such as milk, chocolate milk, fruit juices, soft drinks or the like; and more especially to containers of this character provided with a drinking straw package inside the container.

Containers of this character are opened in various ways, as by removing a cap or the like closing an opening or by tearing or cutting off a portion of the container to form an opening through which the contents may be emptied. It may be awkward or inconvenient to drink directly from the container without the aid of a straw or the like. Many people object for sanitary reasons to drinking directly from a container by placing one's lips against the container around the opening therein since it is impossible to keep the outside of the containers clean under usual conditions. In addition to the sanitary considerations it is usually much more comfortable and convenient to use a drinking straw while drinking from such containers.

The provision of a drinking straw raises serious problems of keeping the straw clean and undamaged. Although the straw may be separately wrapped and attached to the outside of the container, this is at best expensive and often unsatisfactory since the straw becomes damaged or accidentally detached from the container.

In some prior arrangements a straw has been enclosed in the container; but this poses the problem of accessibility of the straw after opening the container. In most containers, a bottle for example, one cannot reach into the container to withdraw the straw. A floating or buoyant straw has been offered as an answer to this problem but it is highly unsatisfactory because of the high cost of the specially designed and built straw.

Hence it becomes a generally object of my invention to provide a package made from a thin web of material and suitable for holding liquids, that is provided with a straw through which the user may drink the contents of the package.

A further object of the invention is to provide a container of this character for liquids which is combined with a drinking straw in such a manner that the straw is protected against damage or loss and is maintained in a sanitary condition at all times.

Another object is to provide an arrangement of this character adapted to use an ordinary cylindrical straw of standard construction, eliminating the need for any special and costly features in the straw.

It is a further object of the invention to produce a container of this character which combines the advantages of maximum economy of manufacture, convenience in use, and disposability of the empty container with a self-contained straw.

These and other advantages of my invention are attained by providing a container made from a web of thin flexible material that is formed into a tube with marginal portions of the tube at each end thereof sealed together and disposed in planes at substantially 90° to each other to form a four-sided container. The sealed area at one end is indented to define a recess; and a common drinking straw is placed inside the container with one end of the straw inserted in said recess. I prefer to form a line of weakness in the sealed area at

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said one end so located that the line of weakness intersects the outer edge of the sealed area and extends toward the recess whereby a portion of the container can be torn off along a line intersecting the recess to expose the tip of the straw therein.

How the above and other objects of my invention are attained will be more readily understood by reference to the following description and to the annexed drawing in which:

FIG. 1 is a side elevation of a tetrahedral container containing a straw according to my invention, a portion of one side wall being broken away.

FIG. 2 is a plan view thereof.

FIG. 3 is a fragmentary side elevation of the top portion of the container showing it as it appears after being opened to expose the end of the straw.

FIG. 4 is an enlarged fragmentary section on line 4-4 of FIG. 1.

FIG. 5 is a plan view of a modified form of container embodying my invention.

There is shown in the drawing at 10 a completed container embodying my invention. It is made from thin materials such as paper, a synthetic resin or plastic substance, or a laminated combination of different materials including a metal foil. Packages of this character are most easily and economically made from stock that is heat-sealable on one or both sides and consequently the container illustrated will be assumed to be made from such stock although it will be appreciated that in its broader aspects my invention is not limited to any particular type of stock for the material from which it is to be made.

Also, the invention is generally independent of the process by which the container is made. It may be assumed as being made from a tube of thin material since it can be made from material already formed into a seamless tube. However, in practice the tube is preferably and more economically made from a flat web formed around a cylindrical mandrel to bring the longitudinal edges into position to be sealed together. This operation will not be explained in detail here since it is well known in the art and reference may be made for an explanation of this operation to Patent No. 2,741,079 granted to Rausing on April 10, 1956, and also to my copending patent application, Serial No. 606,349 filed August 27, 1956, and issued as U.S. Patent No. 2,942,760, June 28, 1960, for "Dispensing Container," for a detailed description of a preferred container and the steps in making it. My copending case discloses and claims the container herein illustrated having a pouring channel recessed in an end seal and means forming a line of weakness to facilitate opening the container at the pouring channel. This is an ideal package for combination with a drinking straw; and it is to this later combination that the present invention is directed.

The container indicated generally at 10 in the drawing is formed by bringing into mutual contact and sealing together marginal portions of a tubular member at each end of the tube, thus forming the two end sealed areas 11 and 12. Typically the seal is effected by the application of heat and pressure. These sealed areas are normally substantially flat and lie generally in planes which are disposed substantially at 90° to each other to form a four-sided container. The two seals are formed successively and the container is filled during the interval between making the two end seals, in a manner well known in the art.

According to the teaching of my copending application referred to above, one of the end sealed areas, for example the sealed area 11, is indented from its inner edge to provide a recess 14 which is open at one end to the interior space of the container. In the interval be-

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tween forming the seals 12 and 11, a drinking straw 16 is inserted into the tubular member which becomes the container 10. This straw is positioned so that one end of the drinking straw extends into recess 14 formed when the end seal 11 is made. Straw 16 is preferably a cylindrical member of standard construction, made from any suitable inert, non-absorbent material, but the invention is not necessarily limited to any particular material.

As shown in FIGS. 1 and 2, straw 16 lies generally parallel to one of the faces of the container and it extends from the recess close to the end seal 12 at the other end of the container. The side walls of recess 14 are drawn toward each other by the seal along two sides of the recess, and consequently these walls engage the end of the straw in the recess to hold it, as seen in FIG. 4. Advantage may be taken of this situation to keep the straw in the central position shown in FIG. 2.

Recess 14 extends into but not through the sealed area 11. It is preferably located adjacent one lateral edge of the seal 11 in order that it will be located at the top of the container when the container is resting on the opposite face as may be seen from FIG. 1. Thus when the container is opened, as explained later, the opening at the corner is above the liquid level in the container.

I prefer to provide a line of weakness, as by a row 18 of spaced perforations, along which the container can be torn with relative ease. The line of weakness intersects the outer end edge of the sealed area 11 and continues across the sealed area toward the recess. In the case of perforations the perforations stop short of and do not cross the recess; but if the line of weakness is formed by scoring or the like which does not produce any hole in the container wall it may continue across the recess if desired. The container can be opened by initiating a tear at the outer end edge of seal 11. Tearing upwardly along the line established by the row of perforations 18, a portion of the container is torn off along a line that intersects the recess and not only opens the container at the recess but also exposes the tip of the straw therein, as shown in FIG. 3. The straw may be pulled out with the fingers or enough of it may project beyond the container walls that one may drink from it without pulling it further from the package. Opening the container by removing a portion of the container wall below the upper end of the straw exposes the straw. There is no need to reach into the container or have a buoyant straw to place the straw in position to grasp.

Straw 16 is preferably made longer than the distance from the inlet end of recess 14 to the end seal 12 at the opposite end of the package, for at least two reasons. In the first place, a straw of this length cannot be displaced from recess 14 to drop into the interior of the container, even through the free end is moved to one side from the central position shown in FIG. 2. By making the straw of this length, the straw cannot be pulled off the support formed by the recess and thus fall beyond the reach of the user. A second reason is that when the package is tilted so that a corner of the package adjoining seal 12 is the lowermost point of the container, all the contents will run into that corner and the straw is still long enough to reach the low corner and at the same time project beyond the open end of recess 14.

As illustrated in FIG. 5, end seal 12 has its inner edge 12a shaped as an arc whereby a sump is created centrally of the edge 12a into which liquid contents will run. The provision of a sump of this character may be desired to facilitate the extraction from the container of all the contents by using drinking straw 16. The centrally located sump is closer to recess 14 and a shorter straw is more satisfactory than when it must reach to a remote corner of the container. Even when the straw is moved to a remote corner as in broken lines in FIG. 5, the shorter straw is satisfactory since the distance to the corner is shorter due to the curve 12a than if the end seal has

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parallel edges and is of minimum width. Of course other shapes than an arc may be given to edge 12a for this purpose, since it is obvious without illustration that a flat V-shaped edge will work equally well, as will other shapes.

It will be evident that the opening at recess 14 provided by removing a corner of the container as in FIG. 3 provides an opening through which the contents of the container can be poured by inverting the package, either with or without removing straw 16.

One of the practical advantages of my invention is that the container itself is a very low cost unit. Because of the tetrahedral shape it has a corner which can be kept elevated at all times above liquid level and an opening can be formed at this corner. This is in contrast with a flat or envelope package, also a minimum cost unit, which leaks whenever it is set down after opening one corner.

It will be apparent that various changes in the shape of the container and arrangement of the parts may be made by persons skilled in the art without departing from the spirit and scope of my invention. Accordingly, it is to be understood that the foregoing description is considered to be illustrative of rather than limitative upon the invention defined by the appended claims.

I claim:

1. A filled and sealed package comprising a tube of flexible packaging material having transverse seals at the ends thereof in planes at such an angle to one another that the package is of tetrahedral shape, said package containing a drink, one of said transverse seals being a flat seal formed to provide a pocket at one end thereof open to the interior of the package at a corner of the package, and a drinking straw contained within said package having one end thereof confined in said pocket and extending adjacent the inside face of one of the sides of the package to the other transverse seal, the length of said straw being such as to maintain its said one end in said pocket despite angular displacement of the straw, said package being adapted for being torn open at said corner for access to said one end of the straw, and having means defining a line on which said corner is to be torn off, said drink incompletely filling said package so that the level of the drink is below said line when said package is positioned with said corner up and with its side opposite said one side generally horizontal, the inner edge of said other transverse seal being formed to provide a central sump and to prevent substantial endwise shifting of said straw upon angular displacement of said straw, thereby to assist in maintaining said one end of the straw in said pocket.

2. A filled and sealed package comprising a tube of flexible packaging material having transverse seals at the ends thereof in planes at such an angle to one another that the package is of tetrahedral shape, an elongate item in said package having one end thereof located at a corner of the package at one end of one of said transverse seals and extending adjacent the inside face of one of the sides of the package to the other transverse seal, the inner edge of said other transverse seal being outwardly arched to maintain said one end of said item at said corner despite angular displacement of said item, said package being adapted for being torn open at said corner for access to said one end of said item.

3. A filled and sealed package comprising a tube of flexible packaging material having transverse seals at the ends thereof in planes at such an angle to one another that the package is of tetrahedral shape, said package containing a drink, a drinking straw in said package having one end thereof located at a corner of the package at one end of one of said transverse seals and extending adjacent the inside face of one of the sides of the package to the other transverse seal, the inner edge of said other transverse seal being outwardly arched to provide a sump and to main-

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tain said one end of the straw at said corner despite angular displacement of the straw, said package being adapted for being torn open at said corner for access to said one end of the straw.

4. A package as set forth in claim 3 having means defining a line on which said corner is to be torn off, said drink incompletely filling said package so that the level of the drink is below said line when said package is positioned with said corner up and with its side opposite said one side generally horizontal.

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