

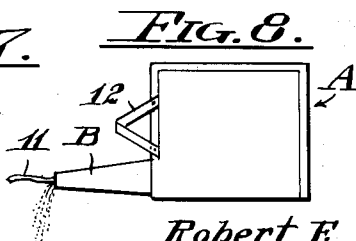
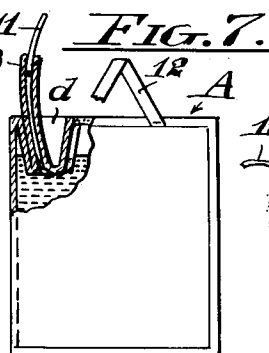
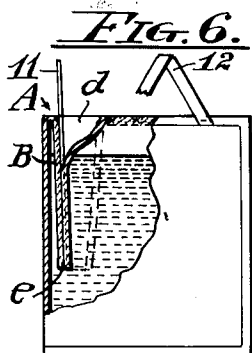
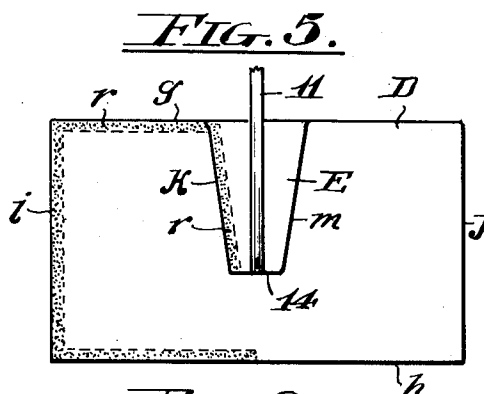
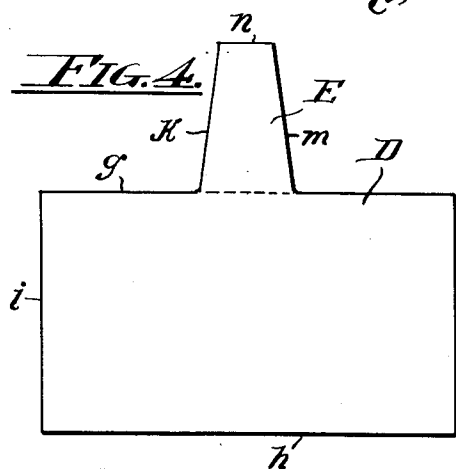
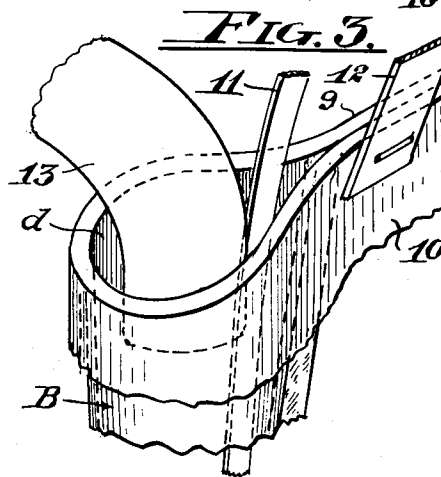
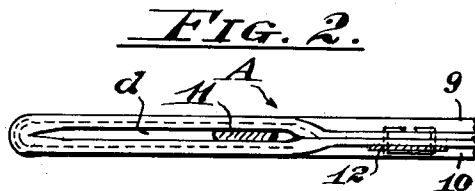
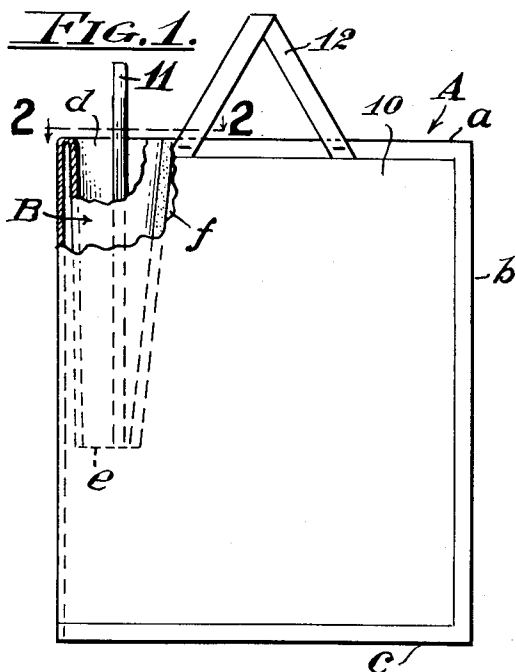
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COLLAPSIBLE LIQUID CONTAINER WITH RETRACTABLE SPOUT

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3,137,419 COLLAPSIBLE LIQUID CONTAINER WITH RETRACTABLE SPOUT

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This invention relates to containers and particularly pertains to collapsible containers and to the method of fabricating same.

An object of the invention is to provide a liquid container which is adapted to be collapsed into a compact flat panel when not in use, but which is adapted to be distended by the introduction of liquid thereto, a particular object being to provide the container with a unitary flexible pouring spout initially inturned within the container and then utilized as a self closing filler opening and to subsequently be reversed inside out and extended exteriorly of the container and then utilized as a pouring spout.

The invention is especially applicable for use as a temporary container for liquid fuel such as gasoline and other hydrocarbons as where it is necessary to convey a small quantity of fuel from a filling station to a motor vehicle the fuel supply of which has become exhausted and which practice is now generally carried out by the employment of gallon tin cans which ordinarily requires the employment of a funnel in pouring the content of the can into a fuel tank.

It is now common practice for automotive service stations to require a substantial monetary deposit for the loan of such containers which occasionally works a hardship or is inconvenient to the borrower.

The purpose of the present invention is to obviate this practice and enable the service station to either supply the container gratis or at a few cents cost, and also to enable the motorist to carry a supply of the subject containers obtained at nominal cost or at no cost as in the case of paper bags, such as are now used in carrying solids.

Another object is to provide a container of the above character which may be formed in most part of a single blank of flexible sheet material adapted to be readily assembled, and which container may be produced at such small cost as to constitute an expendable give-away item.

A further object is to provide a mode of producing the container wherein the container body together with a unitary inturned flexible nozzle is formed by folding a preformed blank upon itself and marginal portions thereof adhered together in a fashion to render the container leak-proof.

With the foregoing objects and advantages together with others as may subsequently appear, the invention resides in the construction herein described, or the equivalent thereof, and illustrated by way of example in the accompanying drawing in which:

FIG. 1 is an elevational view of the collapsed container with portions broken away and depicting the inturned reversible spout;

FIG. 2 is an enlarged detail in plan partly in section as seen on the line 2-2 of FIG. 1 showing the upper edge of the container and the filler opening therein;

FIG. 3 is a perspective view of the structure shown in FIG. 2 depicting the filler opening as distended with a nozzle engaged therewith;

FIG. 4 is a plan view of a blank of flexible sheet material as formed to produce the container body and spout;

FIG. 5 is a view of the blank shown in FIG. 4 with the spout forming portion thereof inturned and indicating the

marginal portions of the blank designed to be adhered to corresponding marginal portions thereof to produce the flat collapsed container shown in FIG. 1;

FIG. 6 is a side elevation of the container with portions broken away showing it as filled with liquid and with the filler opening closed;

FIG. 7 is a view similar to FIG. 6 showing the mode of reversing the spout and showing the latter in a partly reversed position; and

FIG. 8 is a side view of the container showing it in a tilted position as in pouring liquid therefrom.

Referring to the drawings more specifically A indicates generally a closed container the walls of which comprise flexible sheet material adapted to be collapsed into a flat panel when the container is empty.

While the container may be constructed in various fashions it is here shown as comprising a rectangular panel of the sheet material folded upon itself to form normally parallel abutting flat side walls 9-10 with overlying margins thereof in register and adhered together throughout a major portion thereof. The overlying margins, as shown in FIG. 1, comprise a top margin a, a side margin b and a bottom margin c.

The flexible sheet material of which the container is formed preferably comprises a moisture impervious plastic such as polyethylene, cellophane or the like.

The essence of the invention resides in a spout B with which the container A is equipped, it being formed of flexible sheet material like that of which the container A is fashioned and is preferably integral therewith. The spout B is tapered longitudinally, it having an enlarged open intake end d and a reduced open discharge end e of which the intake end d is flexibly connected to the margin of the wall of the container A at the top margin a of the latter with the spout initially extending between the side walls 9-10 into the liquid receiving compartment f interiorly of the container and opening at its discharge end thereto.

A pull string 11 is attached at one end thereof to the discharge end e of the spout B and leads longitudinally of the spout interiorly thereof with its other end protruding through the intake end d of the spout.

A strap handle 12 has its ends attached to the upper end a of the container by which it may be readily carried.

In the operation of the invention, the opening of the intake end d of the spout B being initially in the form of a slit, as shown in FIG. 2, the margin thereof is spread apart and the discharge end of a nozzle 13, or the discharge end of a funnel is inserted in the distended intake end of the spout B, as shown in FIG. 3. Liquid is then delivered through the nozzle 13, or funnel, into the spout B and conducted thereby into the container; the liquid in passing through the spout B spreading apart the initially flat overlying walls of the spout and flowing into the container from the then opened discharge end of the spout. In this fashion any desired amount of liquid may be delivered into the container within the limits of its capacity.

Where the flow of liquid into the container is terminated at a point where the level thereof is below the lower end of the inturned spout and the latter emptied, the walls of the spout will ordinarily automatically collapse and thereby close the spout, but such collapse may be insured by manually pressing together the side portions of the container at opposite sides of the spout such as to press the sides of the spout together.

Where the flow of liquid into the container is terminated at a point where the level of the liquid in the container is above the lower end of the spout B, liquid will occupy the interior of the spout to a level on a plane with that of the liquid in the container. The liquid within the spout

may be ejected therefrom by squeezing the spout through the walls of the container as by pinching the portions of such walls together on opposite sides of the upper end portion of the spout with the thumb and forefinger, and then advancing the thumb and forefinger downwardly over and throughout the length of the spout B to effect stripping action. The walls of the spout B being flexible will thus be collapsed and will be retained so by the pressure of the liquid within the container as shown in FIG. 6, thereby automatically closing the spout and trapping the liquid in the container so that the latter may be carried or stood on end without loss of its liquid content.

When it is desired to effect discharge of liquid from the container, the pull-string 11 is pulled so as to invert the discharge end *e* of the spout B into the interior of the latter and to draw such discharge end outwardly through the intake end *d* thereof, as indicated in FIG. 7, thus turning the spout B inside out; continued pull on the discharge end of the spout extending the spout fully from the exterior of the container. When this is accomplished, the container may be tilted, as shown in FIG. 8, to pour the contents of the container to discharge from the spout.

On the container being emptied it may be discarded or, if desired, the spout B may be tucked back into the container and restored to its initial position therein and the walls of the spout and container collapsed to their flattened out-of-use position.

In fabricating the container and spout as above described, a thin, flexible, moisture impervious sheet material D such as polyethylene or the like, is selected and shaped to have a rectangular contour with an integral tapered tongue E projecting from a margin thereof. The resultant blank, shown in FIG. 4, has parallel upper and lower margins *g-h* and parallel end margins *i-j*. The tongue E has side margins *k* and *m* converging from the upper margins *g* of the blank to an end margin *n*. On the sheet being thus formed, the tongue E is folded at its intersection with the margin *g* to overlie a face of the sheet D, as shown in FIG. 5, whereupon the sheet D is folded transversely mediate the tongue E, that is along the longitudinal center of the latter, so that the end margins *i-j* of the sheet will be in register as will the side margins *k-m* of the tongue E, which recited margins together with the then overlying portions of the upper and lower margins *g-h* of the sheet are then adhered together. Such adhesion is effected in a conventional fashion, as by heating the overlying margins under pressure to unite the abutting faces of the material, or by applying a pressure sensitive adhesive to such marginal surfaces as indicated at *r* in FIG. 5 whereby the recited margins may be adhered under pressure. In this manner the container A may be formed with the initially intumed spout B interposed between the folded over side wall portions of the sheet.

Before folding the sheet D as above described the

pull-string 11 is attached to the outer end of the tongue E as by a staple 14 and is arranged to overlie the intumed tongue as shown in FIG. 5.

The invention is not limited to the specific embodiment herein illustrated, but embraces such changes and modifications as come within the meaning and scope of the appended claims.

I claim:

1. In a container embodying a flexible sheet folded upon itself to form overlying side walls, said side walls having marginal portions adhered together, a spout having overlying flexible side walls unitarily connected to and extending from the marginal portions of the container side walls at the fold thereof, said spout initially extending inwardly between said side walls and having an intake end opening exteriorly of the container and a discharge end opening between the container side walls, and a pull-string attached to the discharge end of said spout leading longitudinally of said spout interiorly thereof having an outer end portion projecting from the container whereby the discharge end of said spout may be drawn into the interior of the spout and the spout subsequently extended exteriorly of the container with a margin thereof extending in continuation of the fold of the overlying side walls of the container.

2. In a container embodying a flexible sheet folded upon itself to form overlying side walls, said side walls having marginal portions adhered together, a spout having overlying flexible side walls unitarily connected to and extending from the marginal portions of the container side walls at the fold thereof, said spout initially extending inwardly between said side walls and having an intake end opening exteriorly of the container and a discharge end opening between the container side walls, and a pull-string attached to the discharge end of said spout leading longitudinally of said spout interiorly thereof having an outer end portion projecting from the container, said spout then serving as an intake to deliver liquid into the container and being adapted to collapse under pressure of liquid in the container to close the spout against discharge of liquid from the container.

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