

Aug. 13, 1963

H. F. COX, JR

3,100,587

POURING TYPE FLUID CONTAINER

Filed May 19, 1960

2 Sheets-Sheet 1

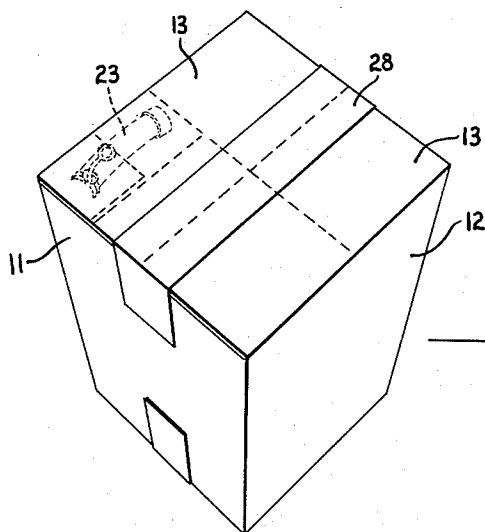
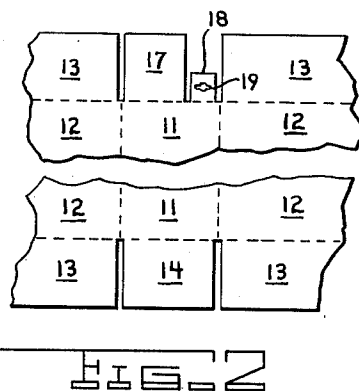
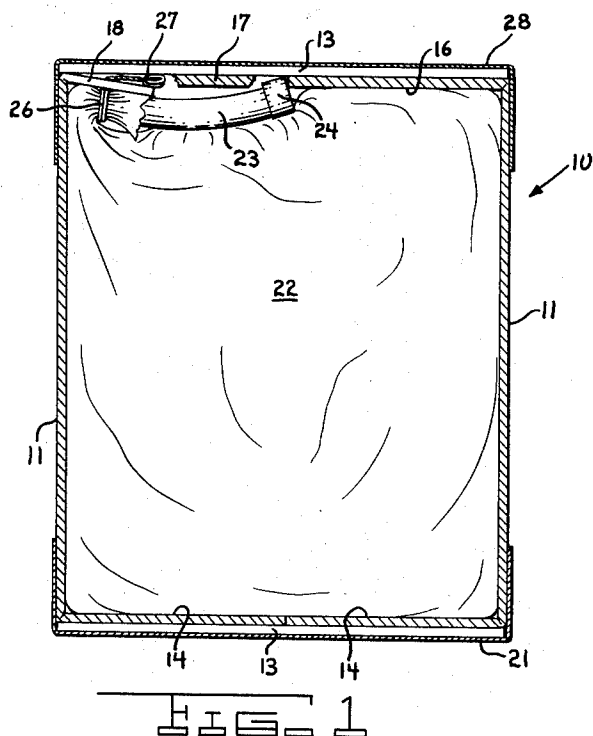


FIG. 3

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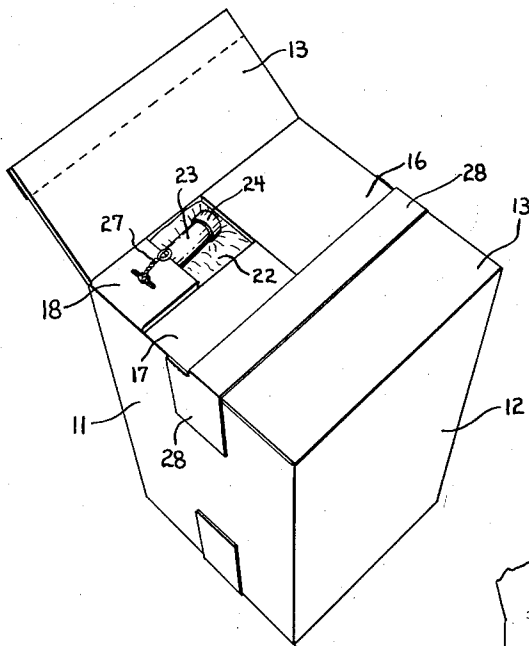


FIG. 4

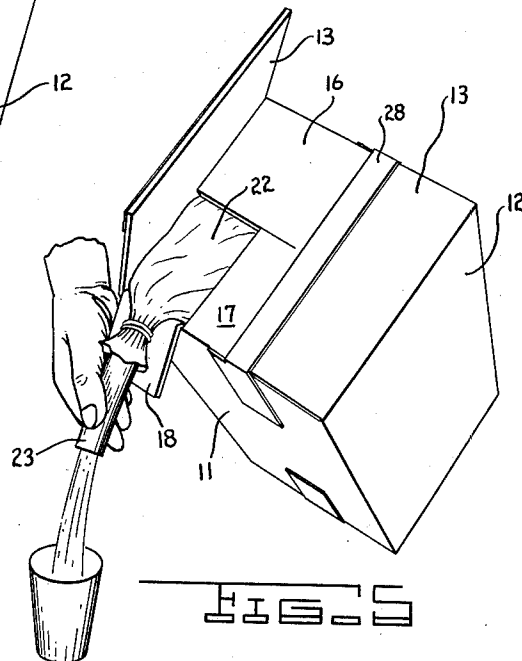


FIG. 5

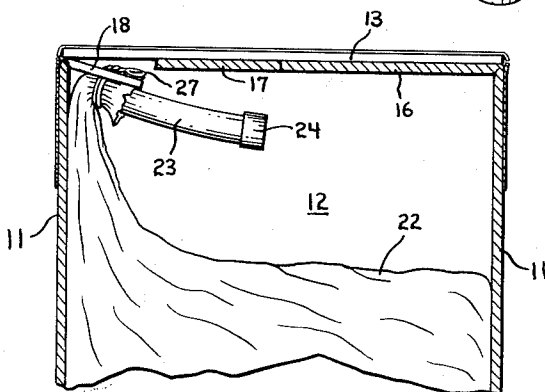


FIG. 6

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1

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POURING TYPE FLUID CONTAINER

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9 Claims. (Cl. 222—105)

This invention relates generally to containers for use in storage and transport of fluids such as milk, ice cream mix and the like, and in particular to such a package or container having a novel arrangement for accommodating a liner bag and its dispensing tube within a relatively rigid outer shell.

In my copending application Serial No. 599,958, filed July 25, 1956, now Patent No. 3,007,608, and titled, "Liquid Dispensing Containers," there are disclosed and claimed several types of containers all utilizing a thin plastic inner bag. The structure of the present invention makes use of a thin plastic inner bag and a relatively rigid outer shell and is provided with a novel arrangement for retaining the pour tube or spout of the bag accessible after portions of the bag contents have been withdrawn therefrom.

As mentioned in my copending application, the transport and storing of certain fluids, such as milk, in containers comprising flexible inner bags protected by semi-rigid outer shells has several advantages. Among these are improved sanitation, preservation of flavor and delayed onset of deterioration of the fluid, these advantages resulting from the substantial elimination of contaminating air-contact with the fluid during filling of the container, storage and pouring or dispensing therefrom.

It is the primary object of the present invention to provide a container of the type referred to having means formed at one end flap of the shell for retaining the bag spout readily accessible even though the bag has been partially emptied of its contents.

A further object of the present invention is to provide a container of the type referred to in which an apertured, foreshortened portion of an end flap of the outer shell accommodates an extending portion of the member binding the pour spout to the bag whereby the spout is readily accessible upon opening the container.

A further object of the present invention is to provide a container of the type referred to in which a foreshortened flap at the top of the container's shell retains the pour spout in a position facilitating pouring from the container when the flap is positioned outwardly from the container and the pour spout is extended.

The full nature of the invention will be understood from the accompanying drawings and the following description and claims:

FIG. 1 is a side sectional view of a filled and sealed container embodying the present invention and ready for storage or transport.

FIG. 2 is a fragmentary, plan view of the blank from which the outer shell of the container is formed.

FIG. 3 is a perspective view of the upper portion of the container of FIG. 1.

FIG. 4 is a view similar to FIG. 3, but showing an intermediate step in obtaining access to the container contents.

FIG. 5 is a view similar to FIG. 4, but showing the pouring tube extended and the container tilted for pouring.

FIG. 6 is a fragmentary, side sectional view similar to FIG. 1, but showing the inner bag partially emptied.

Referring to the drawings, the structure of the present invention comprises an outer shell 10 which may be formed of corrugated fibreboard or the like. The shell has a tubular configuration and is rectangular in cross

2

section, having end panels 11 and side panels 12. At each of their ends the side panels are provided with longitudinal side flaps 13 which are adapted to overlie the lower end flaps 14 and the upper end flaps 16 and 17 integral with the end panels 11.

The end flap 17 is slotted and has a portion cut away to provide a foreshortened flap portion 18. The flap portion 18 is provided with an aperture 19 therethrough for receiving an element of the inner bag assembly, as will subsequently be described. The aperture 19 may be shaped so as to provide sidewardly extending slots to facilitate passage of the inner bag assembly element. The lower end of the shell, as viewed in FIG. 1, may be conventionally sealed by means of tape 21 which overlies the abutting edges of the lower side flaps 13.

Accommodated within the shell is a plastic bag or liner 22 which may be formed of any suitable flexible material, such as polyethylene. Extending from the upper left corner of the bag is a pouring tube 23. The tube may be formed of any suitable, relatively rigid material and provided with a removable sealing plug or cap 24 at its free end. The interior of the tube 23 communicates with the interior of the bag 22 and is sealed thereto by gathering and binding a portion of the bag to the tube as described in detail in my copending application mentioned above. The binding element for the tube-bag junction comprises a length of wire or similar semi-flexible means indicated at 26. The two ends of the wire are conventionally provided with loops to facilitate twisting of the wire and the extending twisted wire ends 27 accommodated within the aperture 19, the portions of the wire extending above the flap 18 being bent to prevent their being pulled back through the aperture. The sidewardly extending slots forming a part of aperture 19 facilitate insertion of the looped ends of the wire.

As will be evident from FIGS. 1 and 3, with the bag 22 filled, the tube is positioned against the under face of the adjacent side flap 13, with a length of tape 28 serving to seal the abutting edges of the upper side flaps. When a portion of the contents of the bag are to be poured from the container, the tape 28 may be cut along its length as indicated in FIG. 4, with transverse cuts being made at the upper margin of the end panels 11 so as to free the side flap 13 which normally overlies the tube 23. The appropriate side flaps 13 may then be bent back as shown in FIG. 4 and the pour spout 23 exposed. The flap portion 18 may then be extended outwardly from the container as shown in FIG. 5, thereby placing the pour tube in a suitable position for pouring the contents from the bag. The pouring tube cap 24 may then be removed from the tube and the container tilted as shown in FIG. 5. It should be noted that in pouring the contents of the bag, only the side flap 13 adjacent the flap portion 18 is folded outwardly, the other side flap 13 being held in place by the remainder of tape 28 with the end flaps 16 and 17 being held in place because of their underlying relation with respect to the side flap 13. The arrangement is thus such that the bag 22 is firmly held within the outer shell as the pouring operation is conducted.

When the desired quantity of the contents of the bag has been poured therefrom, the cap 24 may be replaced, the flap portion 18 may resume its normal position within the container and the appropriate flap 13 may be returned to closed position. As will be evident from FIG. 6, although the bag is partially empty, the tube-bag junction and the pour tube itself are retained at the upper end of the container so as to be readily accessible when an additional quantity of fluid is to be poured from the container.

The structure of the present invention provides a simplified, economical arrangement for retaining the pouring tube readily accessible at the top of the container even though a portion of the bag contents have been removed

therefrom. The flap portion 18 further provides a means for supporting and positioning the tube-bag junction and the pouring tube in a position which facilitates pouring of the bag contents therefrom when the container is tilted while retaining the bag firmly within the outer shell. Although the foreshortened flap portion 18 has been illustrated as having attached thereto the wire binding for the tube-bag junction, it will be understood that where other types of tube-bag junctions are used, other means may be provided for attaching the tube-bag junction to the flap portion, the structural requirement being that the fitting forming the tube-bag junction be attached by some convenient means to the underside of the flap portion 18.

While mention has been made of the advantages of the structure of the present invention in the transporting and pouring of milk and milk products, it will be evident that the features of the present invention are equally present in the transport and pouring of any other fluids such as corrosive commercial fluids.

While the invention has been disclosed and described in some detail in the drawings and foregoing description, they are to be considered as illustrative and not restrictive in character, as modifications may readily suggest themselves to persons skilled in this art and within the broad scope of the invention, reference being had to the appended claims.

The invention claimed is:

1. A container for storage or transport of fluid and adapted to have fluid poured therefrom, said container comprising a relatively rigid, tubular outer shell, said shell being generally rectangular in cross-section and having end flaps and longitudinal side flaps at its upper end for closing thereof, a fluid-tight plastic bag accommodated within said shell and sized so as to be supported by the walls of said shell when filled with fluid, a semi-rigid pouring tube extending from said bag at one corner thereof, a wire binding the tube-bag junction and having a portion extending outwardly therefrom, the shell end flap adjacent said tube being slit to provide two parallel flap sections, one flap section being foreshortened and apertured to receive the extending portion of said binding wire to retain the tube-bag junction at said flap section although a portion of the bag contents has been emptied therefrom, said apertured flap section when moved to extend exteriorly of the container serving to position said bag-tube junction and tube so as to facilitate pouring of the bag contents.

2. A container for storage or transport of fluid and adapted to have fluid poured therefrom, said container comprising a relatively rigid, tubular outer shell, said shell being generally rectangular in cross-section and having end flaps and longitudinal side flaps at its upper end for closing thereof, a fluid-tight plastic bag accommodated within said shell and sized so as to be supported by the walls of said shell when filled with fluid, a semi-rigid pouring tube extending from said bag at one corner thereof, the shell end flap adjacent said tube being slit to provide two parallel flap sections, one flap section being foreshortened and apertured to receive an attaching member extending from the base portion of said tube to retain the tube-bag junction at said flap section although a portion of the bag contents has been emptied therefrom, said apertured flap section when moved to extend exteriorly of the container serving to position said tube-bag junction and tube so as to facilitate pouring of the bag contents.

3. A container for storage or transport of fluid and adapted to have fluid poured therefrom, said container comprising a relatively rigid, tubular outer shell, said shell being generally rectangular in cross-section and having end flaps and longitudinal side flaps at its upper end for closing thereof, a fluid-tight plastic bag accommodated within said shell and sized so as to be supported by the walls of said shell when filled with fluid, a semi-rigid pouring tube extending from said bag at one

corner thereof, the shell end flap adjacent said tube being slit to provide two parallel flap sections, one flap section being foreshortened, means for attaching said tube to the under face of said foreshortened flap section to retain the tube-bag junction at said flap section although a portion of the bag contents has been emptied therefrom, said flap section when moved to extend exteriorly of the container serving to position said tube-bag junction and tube so as to facilitate pouring of the bag contents.

4. A container for storage or transport of fluid and adapted to have fluid poured therefrom, said container comprising a relatively rigid, tubular outer shell, said shell having an end flap at its upper end for closing thereof, a fluid-tight plastic bag accommodated within said shell and sized so as to be supported by the walls of said shell when filled with fluid, a semi-rigid pouring tube extending from said bag at one corner thereof, a wire binding the tube-bag junction and having a portion extending outwardly therefrom, said shell end flap being slit to provide two parallel flap sections, one flap section being foreshortened and apertured to receive the extending portion of said binding wire to retain the tube-bag junction at said flap section although a portion of the bag contents has been emptied therefrom, said apertured flap section when moved to extend exteriorly of the container serving to position said tube-bag junction and tube so as to facilitate pouring of the bag contents.

5. A container for storage or transport of fluid and adapted to have fluid poured therefrom, said container comprising a relatively rigid, tubular outer shell, said shell having an end flap at its upper end for closing thereof, a fluid-tight plastic bag accommodated within said shell and sized so as to be supported by the walls of said shell when filled with fluid, a semi-rigid pouring tube extending from said bag at one corner thereof, a wire binding the tube-bag junction and having a portion extending outwardly therefrom, said shell end flap being slit to provide two parallel flap sections, one flap section being foreshortened, means for attaching said tube to the underface of said foreshortened flap section to retain the tube-bag junction at said flap section although a portion of the bag contents has been emptied therefrom, said flap section when moved to extend exteriorly of the container serving to position said tube-bag junction and tube so as to facilitate pouring of the bag contents.

6. A container for storage or transport of fluid and adapted to have fluid poured therefrom, said container comprising a relatively rigid, tubular outer shell, said shell having a flap at its upper end for closing thereof, a fluid-tight plastic bag accommodated within said shell and sized so as to be supported by the walls of said shell when filled with fluid, a semi-rigid pouring tube extending from said bag, said flap being longitudinally slit to provide a flap section, means for attaching said tube to the underface of said flap section to retain the tube-bag junction at said flap section although a portion of the bag contents has been emptied therefrom, said flap section when moved to extend exteriorly of the container serving to position said tube-bag junction and tube so as to facilitate pouring of the bag contents.

7. A container for storage or transport of fluid and adapted to have fluid poured therefrom, said container comprising a relatively rigid, tubular outer shell which is rectangular in cross-section, said shell having end flaps and side flaps at its upper end for closing thereof, said side flaps being folded over said end flaps with a length of tape sealing the abutting free margins of said side flaps and extending over a portion of the shell side walls, a fluid tight plastic bag accommodated within said shell and sized so as to be supported by the walls of said shell when filled with fluid, a semi-rigid pouring tube extending from said bag, one end flap of said shell being longitudinally slit to provide a flap section, means for attaching said tube to the underface of said flap

5

section to retain the tube-bag junction at said flap section although a portion of the bag contents has been emptied therefrom, initial access to said bag contents being obtained by cutting said tape along the free margins of said side flaps to free the side flap adjacent said flap section, moving said last mentioned side flap out of overlying relation with said flap section and moving said flap section so as to extend exteriorly of said container, whereby said tube-bag junction and tube are positioned so as to facilitate pouring of the bag contents and the bag is retained within said shell during pouring by said end flaps and the side flap remote from said flap section.

8. A container for storage or transport of fluid and adapted to have fluid poured therefrom, said container comprising a relatively rigid, tubular outer shell which is rectangular in cross-section, said shell having end flaps and side flaps at its upper end for closing thereof, said side flaps being folded over said end flaps, means sealing the abutting free margins of said side flaps and extending over a portion of the shell side walls, a fluid tight plastic bag accommodated within said shell and sized so as to be supported by the walls of said shell when filled with fluid, a semi-rigid pouring tube extending from said bag, one end flap of said shell being longitudinally slit to provide a flap section, means for attaching said tube to the underface of said flap section to retain the tube-bag junction at said flap section although a portion of the bag contents has been emptied therefrom, initial access to said bag contents being obtained by freeing from said sealing means the side flap adjacent said flap section, moving said last mentioned side flap out of overlying relation with said flap section and moving said flap section so as to extend exteriorly of said container, whereby said tube-bag junction and tube are positioned so as to facilitate pouring of the bag contents and the bag is retained within said shell during pouring by said end flaps and the side flap remote from said flap section.

6

tate pouring of the bag contents and the bag is retained within said shell during pouring by said end flaps and the side flap remote from said flap section.

9. A container for storage or transport of fluid and adapted to have fluid poured therefrom, said container comprising a relatively rigid, tubular outer shell which is rectangular in cross-section, said shell having an end flap and a side flap at its upper end for closing thereof, said side flap being folded over said end flap and sealed thereover, a fluid tight plastic bag accommodated within said shell and sized so as to be supported by the walls of said shell when filled with fluid, a semi-rigid pouring tube extending from said bag, said end flap of said shell being longitudinally slit to provide a flap section, means for attaching said tube to the underface of said flap section to retain the tube-bag junction at said flap section although a portion of the bag contents has been emptied therefrom, said flap section when moved to extend exteriorly of said container serving to position said tube-bag junction and tube so as to facilitate pouring of the bag contents, said side flap and end flap retaining said bag within said shell during the pouring operation.

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