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3,263,848

NURSING CONTAINER WITH SUPPORTING HANDLES

Filed Dec. 3, 1963

2 Sheets-Sheet 1

Fig. 1.

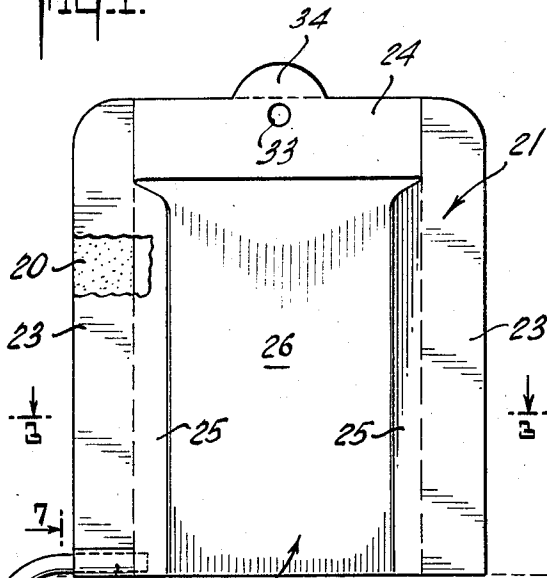


Fig. 2.

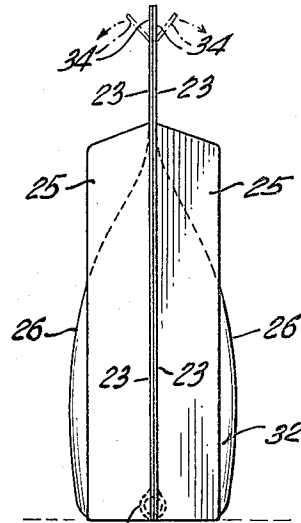


Fig. 3.

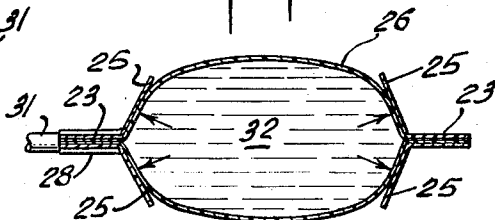


Fig. 4.

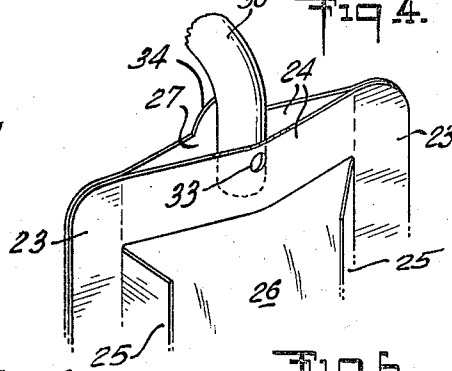


Fig. 5.

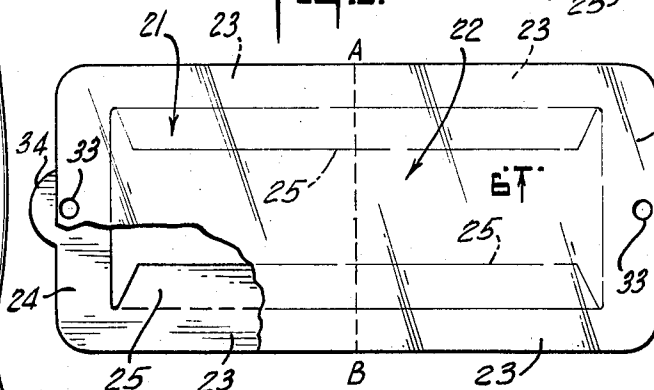


Fig. 6.

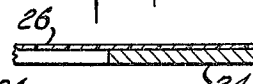
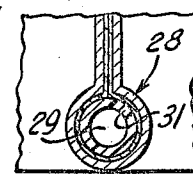


Fig. 7.



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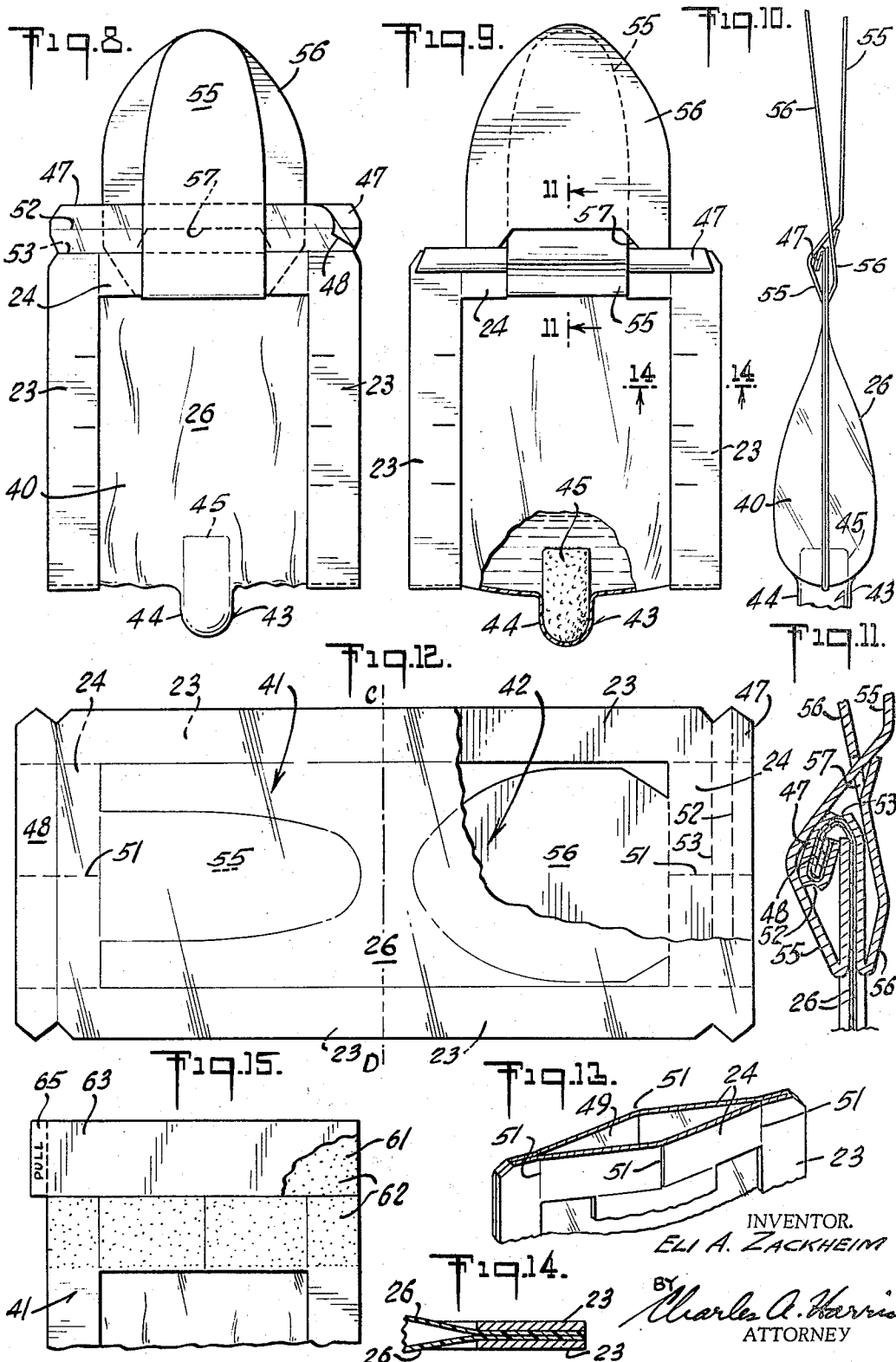
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NURSING CONTAINER WITH SUPPORTING HANDLES

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2 Sheets-Sheet 2



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3,263,848

## NURSING CONTAINER WITH SUPPORT- ING HANDLES

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2 Claims. (Cl. 215—11)

The present invention relates to disposable liquid containers which are collapsible.

According to the present invention, a disposable liquid container is provided which is collapsible and inexpensive yet which possesses sufficient rigidity for a variety of uses for which plastic bags are unsuitable. Preferably the collapsible portion of the container is formed from a relatively limp and thin closure sheet material which is given form and structure by side and end framing strips attached to the sheet. In one form of this invention, the disposable container is particularly suited to be used as an enema dispenser, in another as an infant's nursing bottle. It may be adapted to stand on one of its ends or to be held in one hand by handle portions struck from the very sheets which make up the side and end framing strips of the container.

The combination of framing strips with closure sheets or sheet portions to form the container of this invention makes it possible to utilize extremely thin and inexpensive plastic sheet material for the closure sheets. The framing strips, themselves, may be stamped or cut from a single sheet of lightweight paperboard and attached to the closure sheets by heat sealing or by an additional adhesive.

In the preferred embodiment of this invention, the container comprises a first panel and a second panel attached to one another adjacent opposite edges of the panels and unattached to one another centrally thereof to provide a centrally located collapsible chamber. Each of the panels, in turn, comprises an inwardly facing, relatively limp and thin closure sheet, relatively rigid side framing strips spaced from one another and attached to the outside of the sheet along opposite side edges of the sheet, and at least one relatively rigid end framing strip connecting the side framing strips and attached to the outside of one end of the sheet. The side and end framing strips of the first panel are superimposed with the corresponding side and end framing strips of the second panel with the closure sheets of both panels between them and the panels are sealed together along contiguous side and end edges of the container through the closure sheets. At least one, and preferably both, of the closure sheets are permanently distended outwardly in the space between the side framing strips of the individual panels to form the above-referred-to collapsible chamber for containing liquids. Means communicating with the collapsible chamber is provided for dispensing the liquid from the container and, preferably, opposed framing strip portions of the container with their corresponding closure sheets are separable from one another at one edge of the container to provide a filling opening therefore.

In a preferred form of this invention, the end framing strips are located only at the top of the container so that the container is framed only along its sides and across the top thereby exposing the exterior of the closure sheet, or sheets, forming the collapsible chamber directly to the bottom of the container. In one application, the container stands on end when filled, utilizing the expansion of the collapsible chamber at the bottom of the container as a stabilizing factor.

It also is preferred that the side and end framing strips of each panel are formed from a single piece of sheet material and that supporting members formed from the same piece are foldably connected to opposed portions of the framing members. These supporting members may be

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used to support the container for standing the container on one end or as handles, or for similar purposes. In fact, the side and end framing strips of both panels may be formed from the same piece of sheet material along with the supporting members for both panels by forming corresponding side and top end framing members at opposite ends of a single blank and then folding the blank to superimpose its halves and form the container. In this case, each half of the blank acts as one of the panels of the container. In all of these forms of the invention, the supporting members may be struck from the framing material located between the side and end framing members, thereby utilizing material which otherwise would be wasted.

In one embodiment of this invention, wherein the supporting members are adapted to be used as standards, a filling opening is provided at the top of the container, and a dispensing opening for connection to flexible tubing is provided at the bottom of the container; the container of this invention is particularly adapted for use as a disposable enema dispenser.

In another embodiment of this invention, wherein the supporting members are adapted to be folded over one end of the container and interlocked for use as a handle for holding the container and for retaining closed a filling opening located at that end of the container, and dispensing means is provided in the form of a teat formed in the closure sheet at the bottom of the container; the container of this invention is particularly adapted to be used as a disposable nursing bottle.

Other and further advantages of this invention will occur to one skilled in the art from the following description and claims taken together with the drawings wherein:

FIG. 1 is a partly broken away front elevational view of a disposable liquid container according to one embodiment of this invention, showing the container filled;

FIG. 2 is a side elevational view of the container of FIG. 1;

FIG. 3 is a view partly in section and partly in plan taken along the line 3—3 of FIG. 1;

FIG. 4 is a view in perspective of the top of the container of FIG. 1 showing the container being filled;

FIG. 5 is a somewhat reduced plan view of the blank from which the container of the preceding figures is formed, partly broken away to show its structure more clearly;

FIG. 6 is an enlarged sectional view taken along the line 6—6 of FIG. 5;

FIG. 7 is an enlarged sectional view taken along the line 7—7 of FIG. 1;

FIG. 8 is a front elevational view of another embodiment of a disposable liquid container of this invention, showing the container empty and unsealed at the top;

FIG. 9 is a similar front elevational view of the container of FIG. 8 showing the container full of liquid and closed at the top, and partly broken away to show the construction of the nursing teat or nipple at the bottom of the container;

FIG. 10 is a side elevational view of the filled container of FIG. 9;

FIG. 11 is a greatly enlarged sectional view taken along the line 11—11 of FIG. 9 and showing the way in which the top of the container of FIGS. 8 and 9 is closed and sealed and then locked in position by the supporting members forming the handle of the container;

FIG. 12 is a plan view of the blank from which the container of FIGS. 8 and 9 is formed, partly broken away to show its structure more clearly;

FIG. 13 is a view in perspective of the top portion of the container of FIGS. 8 and 9 with the locking portions thereof removed and showing how the top framing mem-

ber is scored to facilitate the folding and opening of the container for filling;

FIG. 14 is an enlarged sectional view taken along the line 14—14 of FIG. 9;

FIG. 15 is a schematic front elevational view of the top of a container of a somewhat different embodiment of this invention, partly broken away for descriptive purposes.

Referring to FIGS. 1-7 of the drawings there is shown a laminated container according to one embodiment of the invention which is particularly suitable for use as an enema dispenser or for dispensing another liquid by gravity for a different purpose. This container comprises a first panel 21 and a second panel 22 formed by folding a single blank about a centrally located fold line A-B to superimpose the halves of the blank which then become the respective panels 21 and 22. Each of the panels comprises a pair of side framing strips 23 spaced from one another and connected at one end by an end framing member strip 24 integral therewith. At the other end of the container, the side framing strips 23 of one panel also are integral with the side framing strips 23 of the other panel and connected to one another at the fold A-B by which the panels are superimposed. Outwardly foldable supporting members 25 also are stamped or cut from the same blank or piece of material from which the framing strips 23 and 24 are formed. There are four of these supporting members 25, two in each panel. Each of the supporting members 25 is integral with one of the side framing strips 23 and connected thereto by a fold. As will be seen most clearly in FIGS. 1, 2 and 5, the bottom edges of the supporting members 25 extend horizontally and parallel with the bottom edges of the side framing strips 23 so that when the supporting members are folded outwardly toward a position in which they are perpendicular to the side framing strips 23 they act as standards for assuring that the container will stand on one end when filled.

A relatively limp and thin transparent closure sheet 26 is applied to the framing strips 23 and 24 of each panel in such a way as to face the inside of the panels 21 and 22. As shown most clearly in FIG. 5, the closure sheet is applied to the inside surface of the blank from which the framing strips 23 and 24 and supporting members 25 are formed, before the halves of the blank are folded to superimpose the panels. The closure sheet 26 may be sealed to the inside surfaces of the framing strips by the application of adhesive between the sheet and the strips, or by heat sealing if the closure sheet is thermoplastic, or the like. Preferably, the closure sheet 26 is distended by physically displacing the central portion of the sheet through the opening formed between the side and end framing strips 23 and 24, respectively in such a way as to permanently deform the sheet and form a pocket extending through the opening between the framing strips. This may be done cold or with the application of heat to facilitate changing the shape of the sheet and to set the sheet in its new configuration. If the closure sheet 26 is formed from polypropylene, for example, it may be cold worked for this purpose. Other plastics such as vinyl sheeting may require the use of heat. After the closure sheet 26 has been distended as described, the blank is folded to superimpose the panels 21 and 22 and heat sealed together to form the container. In this folding and heat sealing operation sufficient heat is applied by induction or other means to heat seal the closure sheet 26 of one panel to the closure sheet 26 of the other panel between the side framing strips 23, as shown at 20 in FIG. 1. The closure sheets 26 between the end framing strips 24 purposely are left unsealed, as illustrated most clearly in FIG. 4, to provide a filling opening 27 for the container. A core, not shown, preferably is used during the folding operation to shape the lower end of the framing strips 23 at one side of the container to form dispensing means, or structure, 28 defining a dispensing opening

29 which will receive one end of a length of flexible tubing 31 adapted to be secured to the container. The tubing may be inserted in the dispensing opening prior to heat sealing and sealed thereto during the heat sealing operation. However, some additional adhesive may be necessary to assure that no leakage will occur around the outside of the tubing.

It will be seen that in the container of this embodiment, the closure sheets 26 between the side and end framing members are distended to form a collapsible chamber 32. The sheets 26 may be collapsed to allow empty containers to be packed tightly in a small space or for other reasons, and then are adapted to be expanded to receive the desired amount of liquid when the container is filled through the filling opening 27 in the top of the container, as illustrated in FIG. 4 wherein a faucet 30 is inserted through the opening for this purpose. The container when filled is adapted to stand on its bottom end as illustrated in FIGS. 2 and 3. The supporting members 25 normally tend to assume their original position parallel with the surfaces of the framing strips 23. However, as the collapsible chamber 32 is filled, the chamber presses against the supporting members and swings them outwardly, as best illustrated in FIG. 3, until they assume definite outward positions which help maintain the container upright if it is placed upon a table. Thus, the container of this embodiment may be used for dispensing an enema or other liquid while standing on a table, shelf, or other surface, or it may be hung upon a hook through openings 33 provided in the top framing strips 24 for that purpose. Opposed tabs 34 are provided above the hanging openings 33 to facilitate separating the top portions of the panels for filling purposes and for providing additional strength during hanging. When the container of this embodiment is used for dispensing enema, the tubing 31 may be formed from a flexible rubber or plastic and may have a pinch valve 35 for controlling flow in the conventional manner.

FIGS. 8-14 illustrate another embodiment of this invention. In this embodiment the laminated disposable container is adapted to be used as a nursing bottle for babies. The container proper is formed in essentially the same manner as the container of FIGS. 1-7 from a single blank, illustrated in FIG. 12, by folding the halves of the blank about a centrally located fold line C-D and sealing them to one another to form a container with opposed first and second panels 41 and 42, respectively. Again, each of the panels comprises a pair of spaced side framing strips 23 and an end framing strip 24 located at the top of the container. These framing strips provide structure and support for a limp and thin closure sheet 26 which is folded over at the bottom of the container and sealed between the side framing strips 23. The closure sheets 26 in each of the panels of the container are distended outwardly between the framing strips 23 and 24, as described in connection with the embodiment of FIGS. 1-7, to form a collapsible chamber 40 for holding the nursing liquid. The container includes dispensing means in the form of a depending teat, or nipple, 43 which is intended to be placed in the baby's mouth for nursing. The teat 44 comprises an outwardly deformed portion 45 of the closure sheet which is maintained in shape by a resilient porous polyurethane plug 46 inserted into the teat from the inside of the container and held therein by a suitable adhesive or heat seal, not shown. The closure sheet is punctured at the bottom of the teat 43 to provide an opening adequate to pass liquid at the desired rate. When the closure sheet is formed from polypropylene film, the teat 43 may be cold formed therein. Otherwise, as explained in connection with the formation of the collapsible chamber of the embodiment of FIGS. 1-7, some heat may be necessary for this purpose.

A flexible locking flange 47 is formed integral with the second, or back, panel of the container of this embodiment. The closure sheet attached to the back panel over-

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laps this flange and is sealed thereto prior to folding. The closure sheet of the front panel has a sealing portion 48 extending beyond the end of the front panel. As shown most clearly in FIGS. 8 and 12, the sealing portion 48 of the closure sheet of the front panel is of roughly the same shape and size as the locking flange 47 on the back panel before the locking flange is folded, and therefore overlies the locking flange when placed into contact therewith. As for the container of FIGS. 1-7, the closure sheets 26 of the front and back panels 41 and 42 are only sealed to one another between the side framing strips 23, so that the end framing strips 24 may be separated from one another to provide a filling opening 49. In fact, the end framing strips 24 have vertical scores 51 located in three places, i.e., in the center of the strip and along the edge of each of the side framing strips 23, to facilitate the opening of this end of the container for filling as shown most clearly in FIG. 13.

After the container is filled with milk, for example, the sealing sheet section 48 of the front panel is pressed into contact with the locking flange 47, as shown in FIG. 8, and the locking flange and sealing section are folded together twice along cut score lines 52 and 53 to make a "druggist's fold" which seals off the filling opening, as shown in FIGS. 9-11.

As explained in connection with the embodiment of FIGS. 1-7, front and back supporting members which in the embodiment of FIGS. 8-15 are in the form of elongated handle portions 55 and 56 are stamped or cut from the same blank as the framing strips 23 and 24 in such a way as to utilize the material between the strips. As shown in FIG. 12, the supporting handle members 55 and 56 remain foldably connected to the front and back end framing strips, respectively, and have the appearance of narrow and fat rabbit ears 55 and 56. The narrow front handle member 55 and the fat back handle member 56 both fold outwardly over the end framing strips 24 at the top of the container in such a way that they include the end framing strips and the folded over locking flange 47 and sealing sheet portion 48 between them. A locking slot 57 wide enough to accommodate the narrow front handle member 55 is provided in the rear handle member 56 beyond the folded locking flange 48 in the folded positions of the supporting handle members. The front member 55 is folded over the locking flange and inserted through the locking slot 57 in such a way that front and back handle members 55 and 56 are interlocked to form a handle for the container which retains the locking flange 47 and the sealing sheet portion 48 in their folded over positions. The manner in which the supporting members are folded back over the end of the container and interlocked also provides a fairly rigid handle structure which facilitates manipulation of the filled container by the hand holding the handle.

FIG. 15 illustrates a modification to the embodiment of FIGS. 8-14 wherein the foldable locking flange and sealing sheet portion of FIGS. 8-14 is replaced by a single foldable flap 61 integral with the real panel. The inside surface of this flap and a corresponding portion of the outside of the front panel 41 is coated with a cohesive-adhesive 62, i.e., a cohesive material which will stick to itself but not to any other item which it might normally contact. The flap 61 is prevented from accidentally adhering to the cohesive-adhesive on the front panel 41 by a removable cover sheet 63 applied over the inside surface of the flap. This cover sheet has an overlapping pull tab 65 to facilitate removal therefrom from the flap just before the container is to be sealed.

It will be seen that the framed structure of the laminated disposable liquid container of this invention makes possible the use of relatively thin and inexpensive materials such as lightweight thermoplastic sheeting which may be sealed to itself and easily distended and worked to act as the closure sheet and form the collapsible chamber of the container of this invention. For instance, a

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medium sized enema container of the embodiment of FIGS. 1-7 may be formed from vinyl sheeting approximately 4 mils thick framed with white sulphate paperboard about 25 mils thick. Similarly, a disposable nursing bottle suitable for a single feeding in a hospital nursery may be formed from polypropylene film about 1½ mils in thickness attached to framing strips and handle members cut from the same piece of white sulphate paperboard approximately 20 mils thick. Various other materials may be best suited to form particular containers according to this invention.

Having now described the invention in specific detail and exemplified the manner in which it may be carried into practice, it will be readily apparent to those skilled in the art that innumerable variations, applications, modifications, and extensions of the basic principles involved may be made without departing from its spirit or scope.

The invention claimed is:

1. A laminated disposable liquid container which comprises a first panel and a second panel attached to one another adjacent opposite edges of said panels and unattached to one another centrally thereof; each of said panels comprising an inwardly facing relatively limp and thin closure sheet, relatively rigid side framing strips spaced from one another and attached to the outside of the sheet along opposite side edges of said sheet, at least one relatively rigid end framing strip connecting said side framing strips and attached to the outside of the sheet adjacent an end edge of said sheet, the side framing strips and the end framing strip of the first panel being superimposed with the corresponding side framing strips and end framing strip of said second panel with the closure sheets of both panels between them, said end framing strips with their corresponding closure sheets being separable from one another to provide a filling opening for the container, and being adapted to be folded together to close said opening, and a supporting member foldably connected to and depending from each of said end framing strips overlying said closure sheets, said supporting members being foldable over opposite sides of said end framing members in such a way as to extend beyond the end of the container and being adapted to be interlocked with one another to form a handle, said end framing strips being held in their closed folded position by said supporting members where they are interlocked to form said handle, said closure sheets being sealed to one another along contiguous side edges and at least one end edge of the container; at least one of said closure sheets being distended outwardly between the side framing strips of the individual panels to form a collapsible chamber for containing liquids; and dispensing means communicating with said chamber.

2. A laminated disposable liquid container which comprises a first panel and a second panel attached to one another adjacent opposite edges of said panels and unattached to one another centrally thereof; each of said panels comprising an inwardly facing relatively limp and thin closure sheet, relatively rigid side framing strips spaced from one another and attached to the outside of the sheet along opposite side edges of said sheet, and at least one relatively rigid end framing strip connecting said side framing strips and attached to the outside of the sheet adjacent an end edge of said sheet; the side framing strips and the end framing strip of the first panel being superimposed with the corresponding side framing strips and end framing strip of said second panel with the closure sheets of both panels between them, said closure sheets being sealed to one another along contiguous side and end edges of the container; at least one of said closure sheets being distended outwardly between the side framing strips of the individual panels to form a collapsible chamber for containing liquids; and dispensing means communicating with said chamber, said dispensing means being located in said collapsible chamber spaced from any of said framing strips and being adapted to be

used for nursing purposes to dispense the liquid contents of the container by suction, said dispensing means comprising an outwardly deformed teat portion of one of said closure sheets and a resilient porous body within said teat portion to preserve its shape, said teat having an opening adequate to pass the desired amount of liquid during nursing.

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