# United States Patent [19]

**Schmit**

[11] **3,809,290**

[45] **May 7, 1974**


[54] **LIQUID CONTAINING AND DISPENSING DEVICE**


[75] Inventor: **Justin M. Schmit,** Pompano Beach, Fla.

[73] Assignee: **Artic Pac, Inc.,** Pompano Beach, Fla.



[22] Filed: **Oct. 12, 1972**

[21] Appl. No.: **296,834**

[52] **U.S. Cl.** ..... **222/88,** 222/90, 222/541

[51] **Int. Cl.** ..... **B67b 7/28**

[58] **Field of Search** ..... 222/83.5, 86, 88, 89, 90, 222/105, 106, 107, 183, 460, 566, 569, 570, 541, 572, 465



[56] **References Cited**

UNITED STATES PATENTS

| | | | |
|---|---|---|---|
| 2,275,842 | 3/1942 | Clem | 222/88 |
| 2,947,653 | 8/1960 | Fohr | 222/541 X |
| 3,128,913 | 4/1964 | Specketer | 222/541 X |
| 2,571,798 | 10/1951 | Urch | 222/89 X |



*Primary Examiner*—Stanley H. Tollberg
*Assistant Examiner*—Larry Martin
*Attorney, Agent, or Firm*—Schroeder, Siegfried, Ryan & Vidas



[57] **ABSTRACT**

A liquid containing and dispensing device consisting of a flexible sealed liquid-containing pouch mounted within the confines of a rigid wall container having a pouring spout characterized by a bayonet-ended tubular element constructed and arranged to perforate a portion of the side wall of the pouch which is secured to and extends across the open end of a tubular member disposed within the confines of the pouch, to thereby facilitate dispensation of its contents. The pouch is capable of being readily removed and replaced with a similar pouch.


**13 Claims, 5 Drawing Figures**

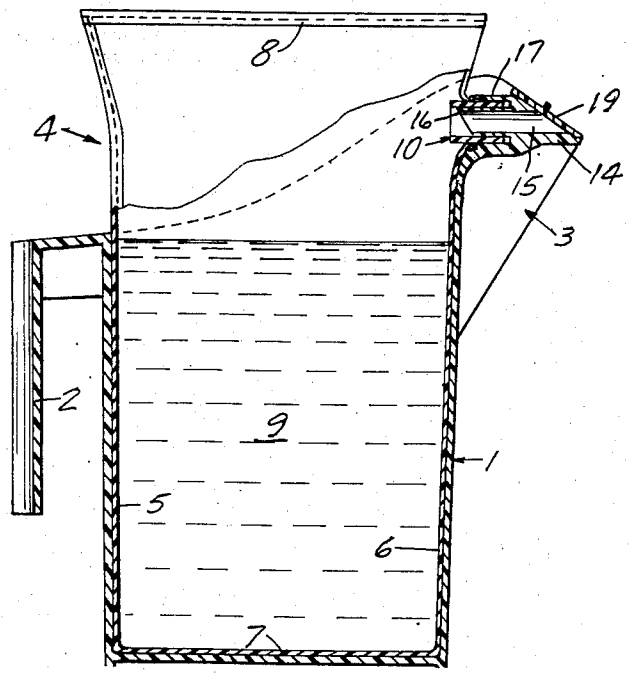


FIG. 1

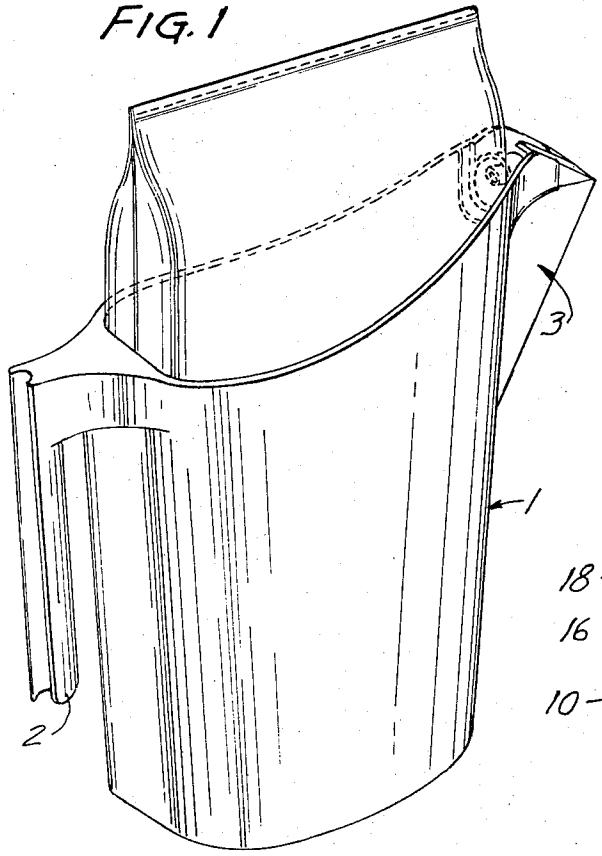



FIG. 4

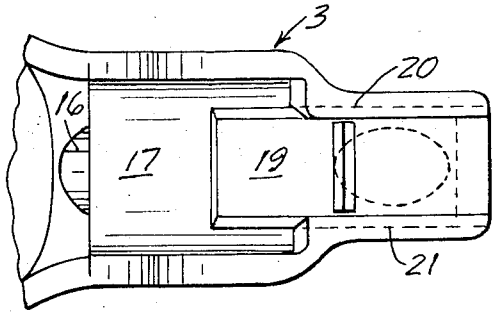



FIG. 5

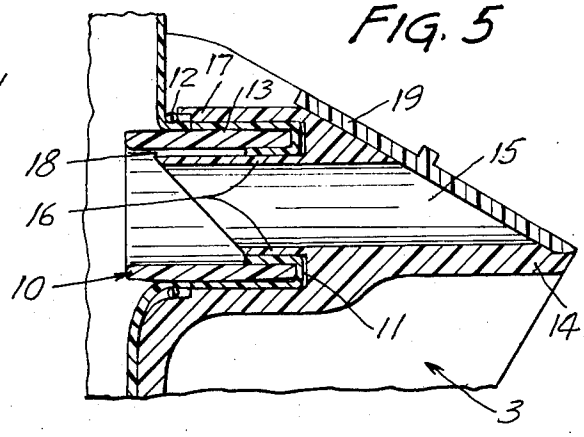



FIG. 2

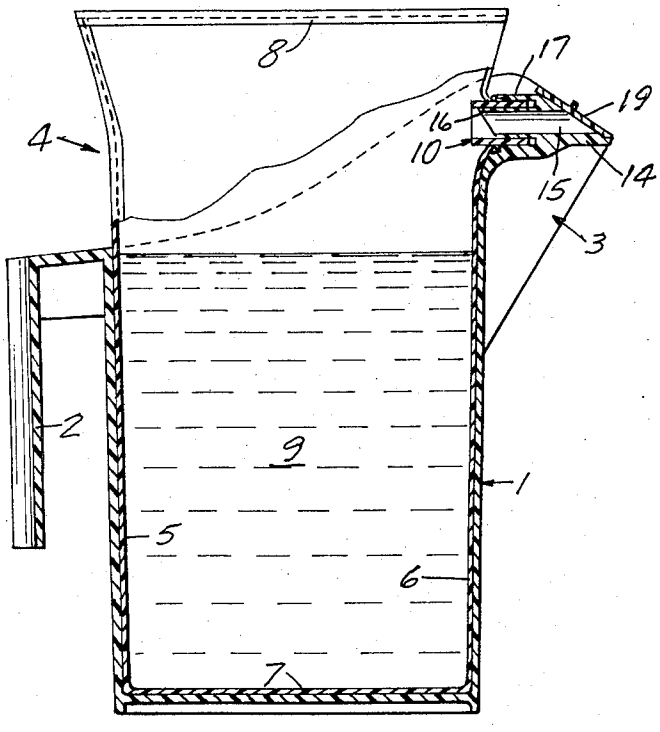
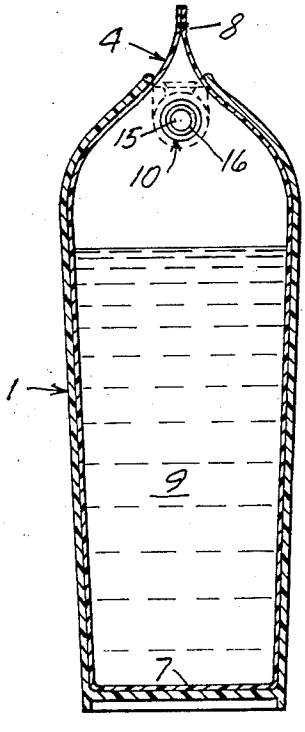



FIG. 3



# LIQUID CONTAINING AND DISPENSING DEVICE

It is a general object of my invention to provide novel, improved, and inexpensive means of packaging and dispensing liquids.

A more specific object is to provide a novel and improved means for packaging and dispensing liquids whereby the dispensing means may be used repeatedly with successive similarly constructed packages of liquids.

Another object is to provide structure which will make it possible to effect a more convenient inexpensive economical and practical method of packing, distributing, selling and dispensing liquids.

Another object is to provide a more economical means of packaging and distributing liquids in a package from which dispensation of the liquid can be accomplished in a quick, simple, inexpensive, and practical manner.

These and other objects and advantages of my invention will more fully appear to those skilled in the art in view of this disclosure.

FIG. 1 is a perspective view of the preferred embodiment of my invention;

FIG. 2 is a vertical sectional view of the device shown in FIG. 1;

FIG. 3 is a vertical sectional view of the device shown in FIG. 1 taken at right angles to that shown in FIG. 2 and looking toward the pouring spout;

FIG. 4 is a fragmentary top plan view of the pouring structure of the container; and

FIG. 5 is a fragmentary vertical sectional view taken longitudinally through the pouring spout of the container.

The preferred embodiment of my invention as shown in FIGS. 1–5 includes a container identified generally by the numeral 1 having a bottom and rigid side walls which support a handle member 2 and pouring structure indicated generally by the numeral 3. Carried within the interior of the container 1 is a pouch member 4 which is characterized by its flexible side walls and a rigid tubular member 10 secured thereto and carried within the confines of the pouch.

The pouch 4 is formed from a pair of sheets of flexible material capable of being secured to each other through the application of heat upon their registering surfaces. The pouch 4 shown in FIGS. 1–3 is formed from two sheets or panels by heat sealing the two sheets at their registering side edges and at their upper and lower registering edges to thus provide side walls 5 and 6, a bottom wall 7, and a top wall or seam 8. The upper end of the pouch is sealed at the seam 8 by a heat sealing treatment well-known in the art after the pouch has been filled with the liquid 9.

The preferable material for making the pouch disclosed herein is that as set forth in my copending U.S. Pat. application Ser. No. 145,609 now abandoned filed by me on May 20, 1971, and entitled FLEXIBLE LIQUID CONTAINER. The rigid tubular member 10 may be secured to the side wall of the pouch 4 in any one of the appropriate manners disclosed in said application, Ser. No. 145,609. The preferred method which I utilize involves applying the tubular member to the inner surface of the side wall of the pouch 4 and forcing it outwardly so as to draw the flexible side wall portion of the pouch tightly around the one end and exterior of the tubular member 10 in preparation for securing the same to the side wall as hereinafter described.



The tubular member 10 is a relatively rigid construction and its external diametrical diemnsions are slightly greater at points intermediate its end as at 13. As best shown in FIG. 5, the side wall portion 11 which extends across the end of the rigid tubular member 10 seals off that end and is subsequently perforated when the tubular member 10 is moved into the position shown in FIG. 5. A resilient ring member 12 is applied exteriorly of the tubular member 10 and the surrounding wall portion of the pouch 4 to a position adjacent the inner end portion of the tubular member 10 as best shown in FIGS. 2 and 5. The use of the retaining ring 12 is a safety feature which may or may not be required depending upon the manner in which the tubular member 10 is applied to the side wall of the pouch 4. In other words, under some conditions the retaining ring 12 may not be required whereas under other conditions it may serve a useful purpose to insure against possible dislodging of the tubular member 10 from proper position.

The pouring structure 3 includes a pouring spout 14 which has a bore 15 and which supports a tubular piercing element 16 at its inner surface. It also supports an annular wall structure 17 which extends around the tubular piercing element 16 and defines therewith an annular recess 18 adapted to receive and retain therewithin the tubular member 10 and its surrounding portion of the wall structure of the pouch 4.

The pouring spout 14 also includes a slide closure 19 which is slidably mounted within two opposed ways 20 and 21. The closure member 19 can be moved between open and closed position.

In practice a plurality of pouches such as the pouch 4 are filled with the liquid desired to be packaged, sold, or dispensed in the manner hereinbefore described, each pouch being characterized by the rigid tubular member 10 secured to the inner surface of the wall structure of the pouch, preferably adjacent its upper end and necessarily within the confines of the pouch wall structure. The wall structure thus extends across the outer end of the tubular member 10 and the liquid 9 is free to flow into the tubular member 10 through its inner end. When it is desired to dispense the liquid 9 the pouch is inserted within the interior recess of the container 1. It will be noted that the interior surfaces of the rigid wall structure of the container 1 are of similar configuration and dimensions with the exterior surface of the pouch 4 when the latter is filled to the desired level with the liquid 9. The tubular member 10 is then forced into the recess 18 defined by the piercing element 16 and the annular wall 17. As the tubular member 10 is wedged into this recess 18, the tubular element 16 pierces the portion of the wall structure which extends across the outer end of the tubular member 10 and extends into the interior of the tubular member 10 so as to bring the bore 15 into communication with the interior of the pouch 4. Henceforth the liquid 9 can be dispensed as desired through the bore 15 of the spout 14. The slide closure 19 may be moved between open and closed position with respect to the bore 15 to control the flow therefrom.

It will be readily appreciated that when a pouch 4 has been emptied it is a simple and easy matter to remove the pouch 4 by removing the tubular member 10 from the recess 18 and substituting therefor a new pouch

within the interior of the container **1** and by forcing the tubular member **10** of the new pouch into the recess **18** so as to pierce the side wall of the replacing pouch and bring its interior into communication with the bore **15** of the pouring spout **14.** Thus the container **1** may be utilized indefinitely and the advantages of the relatively simple and inexpensive packaging of the liquid in the pouch **4** may be fully utilized and appreciated. I have found that liquids may be packaged, handled, distributed and dispensed much more economically and practically in accordance with my invention.

It will, of course, be understood that various changes may be made in the form, details, arrangements and proportions of the parts without departing from the scope of my invention which consists of the matter shown and described herein and set forth in the appending claims.

I claim:

**1.** In a liquid containing and dispensing device,

a. a sealed liquid-containing pouch having flexible side and end walls;

b. a rigid tubular member positioned within the confines of said pouch and within one of said side walls of said pouch and secured thereto with said side wall sealing off and extending across one end of said tubular member, said tubular member and said side wall extending outwardly beyond the general physical outline of said pouch;

c. a container having relatively rigid side walls and an interior with configuration and dimensions generally complementary to the exterior of said pouch and receiving said pouch therewithin in supporting relation;

d. a pouring spout carried by the side walls of said container and including a tubular piercing element, said spout being constructed and arranged to receive said tubular member therewithin in close fitting engaging and supporting relation with said piercing element extending inwardly in piercing relation through said portion of said flexible wall extending across the end of said tubular member and in communication with the interior of said pouch to thereby facilitate pouring of the liquid contents of said pouch therefrom through said piercing element and said spout;

e. said pouring spout also including wall structure defining an annular recess around said piercing element and surrounding said tubular member and said portion of said side wall which seals off said tubular member in close-fitting supporting relation.

**2.** In a liquid containing and dispensing device,

a. a sealed liquid-containing pouch having at least one flexible wall portion;

b. a relatively rigid tubular member positioned within said pouch and its said flexible wall portion and extending outwardly therewith beyond the general physical outline of said pouch;

c. an open-top container having relatively rigid side walls surrounding said pouch in supporting relation and having an interior with configuration and dimensions generally complementary to the exterior of said pouch; and

d. a pouring spout fixedly carried by said container and including a tubular piercing element and receiving said tubular member in engaging and axially telescoping relation with said piercing element extending inwardly through said flexible wall portion of said pouch into said tubular member and in communication with the interior of said pouch whereby to facilitate pouring of the liquid contents of said pouch therefrom through said piercing element and said spout.

**3.** In a liquid containing and dispensing device,

a. a sealed liquid-containing pouch having at least one flexible wall portion;

b. a relatively rigid tubular member positioned within said pouch and its said flexible wall portion and being secured to said wall portion with the latter extending across one end of said tubular member in sealing relation;

c. a container having relatively rigid side walls surrounding said pouch in supporting relation and having an interior with configurations and dimensions generally complementary to the exterior of said pouch;

d. pouring structure carried by said container and including a tubular element, said pouring structure receiving said tubular member in engaging and supporting relation with said tubular element extending inwardly through said flexible wall portion of said pouch into said tubular member and in communication with the interior of said pouch to thereby facilitate pouring of the liquid contents of said pouch outwardly through said tubular element and said pouring structure; and

e. said pouring structure including annular wall structure surrounding said tubular element and defining an annular recess thereinbetween in which said tubular member and its surrounding flexible wall portion are received in tight fitting relation.

**4.** In a liquid containing and dispensing device,

a. a sealed liquid-containing pouch having at least one flexible wall portion;

b. a relatively rigid tubular member positioned within said pouch and its said flexible wall portion and being secured to said wall portion with the latter extending across one end of said tubular member in sealing relation;

c. an open-top container having relatively rigid side walls surrounding said pouch in supporting relation and having an interior with configurations and dimensions generally complementary to the exterior of said pouch; and

d. pouring structure fixedly mounted on the side walls of said container and including a tubular-member-receiving element which receives and positively engages said tubular member in interlocking relation, said pouring structure piercing said flexible wall portion of said pouch at the end of said tubular member when the latter is so received and thereby bringing the same into fluid commuication with the interior of said pouch to facilitate pouring of the liquid from said pouch outwardly through said pouring structure.

**5.** The structure defined in claim **4** wherein said tubular-member-receiving element receives said tubular member in positive interlocking telescoping relation.

**6.** The structure defined in claim **4** wherein the entire wall structure of said pouch is comprised of a flexible liquid-impervious material.

**7.** The structure defined in claim **4** wherein said container has the general configuration of a pitcher.

8. The structure defined in claim 4 wherein the portions of said tubular member intermediate its ends have a slightly increased diameter relative to its end portions.

9. The structure defined in claim 8, and

e. a resilient ring surrounding said tubular member and said flexible wall portion adjacent the inner end portion of said tubular member and securing the latter to said flexible wall portion with said flexible wall portion extending across the outer end of said tubular member.

10. The structure defined in claim 4 wherein said tubular element of said pouring structure is constructed and arranged to readily pierce said flexible wall portion extending across the end of said tubular member and thereby facilitate communication between the interiors of said tubular element and said pouch when said pouring structure is brought into engaging and supporting relation with said tubular member.

11. The structure defined in claim 10 and a slide closure member slidably carried by said pouring structure and constructed and arranged to open and close one end of said tubular element whereby to control the dispensation of liquid through said tubular element.

12. The structure defined in claim 4 wherein said pouring structure includes a pouring spout disposed exteriorly of the general outline of the side walls of said container.

13. The structure defined in claim 4 wherein said pouch is readily removable and replaceable with a similar pouch.

* * * * *