

- [54] CONTAINER FOR LIQUIDS
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Related U.S. Application Data

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- [52] U.S. Cl. 222/183, 222/143, 222/465, 222/540
- [51] Int. Cl. **B67d 5/06**
- [58] Field of Search. 222/183, 143, 540, 222/541, 107, 465, 81-91; 215/1 R, 1 C, 10

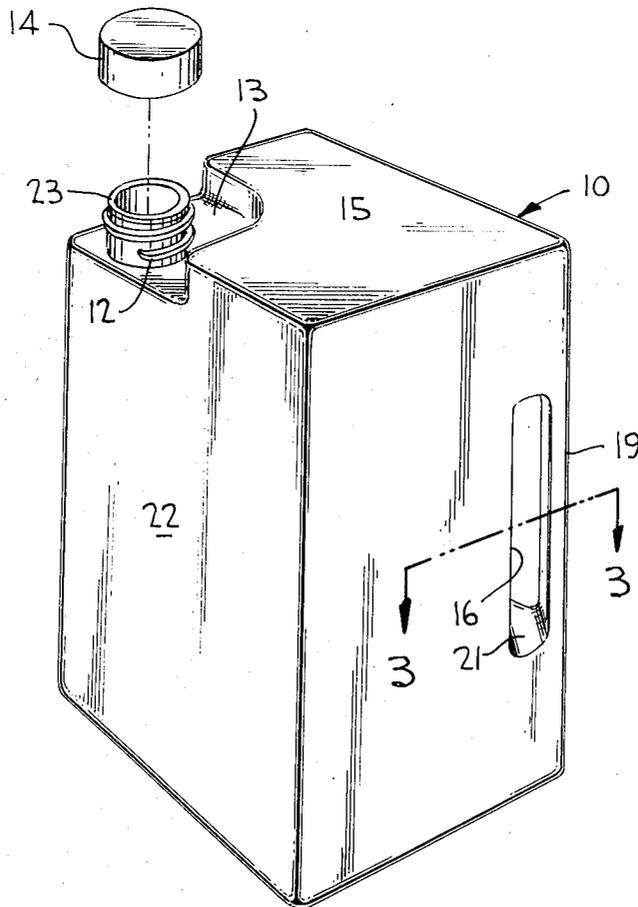
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[57] **ABSTRACT**

A container for liquids which comprises a plastic case having a configuration suitable for easy stacking, a handle disposed within the outer dimension of the case, and a plastic bag inside the case which may be filled at its open end and emptied at its opposite end after being opened through an open neck portion at said opposite end.

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4 Claims, 7 Drawing Figures



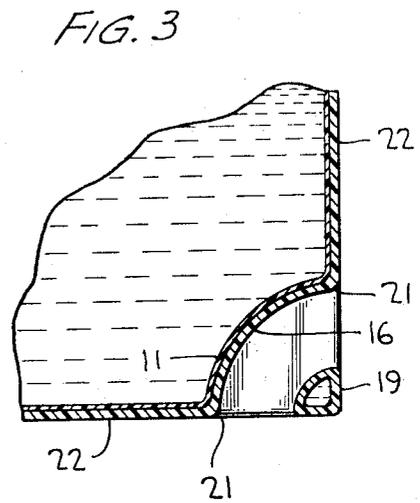
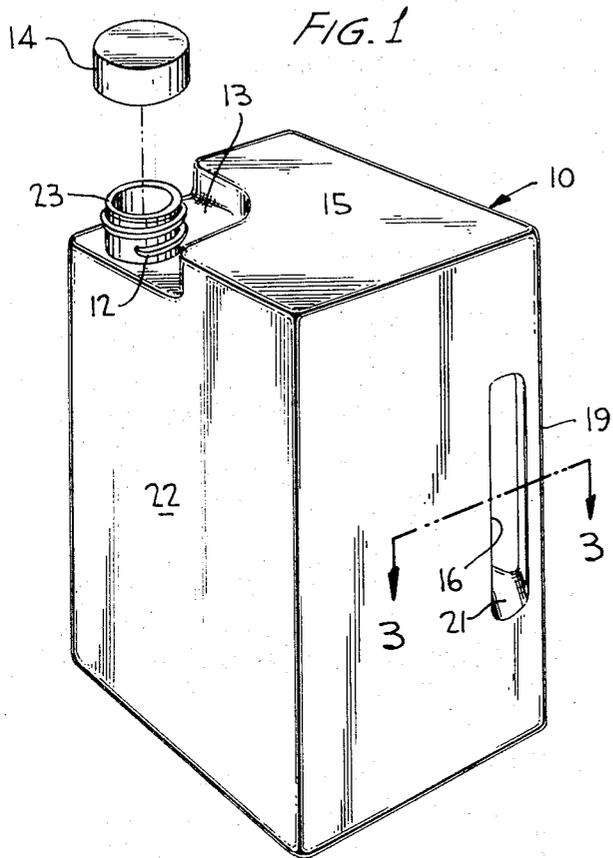
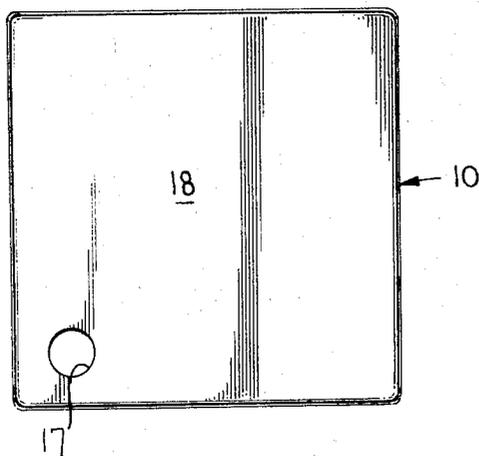
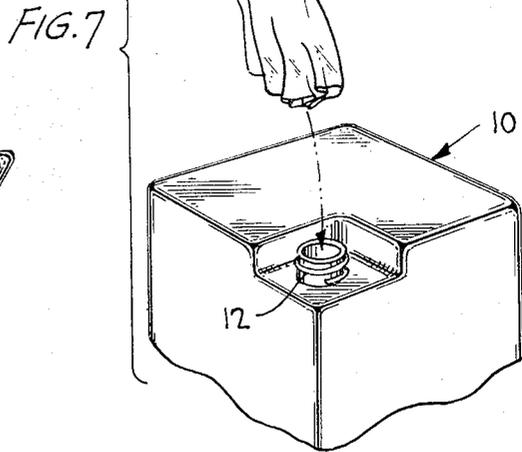
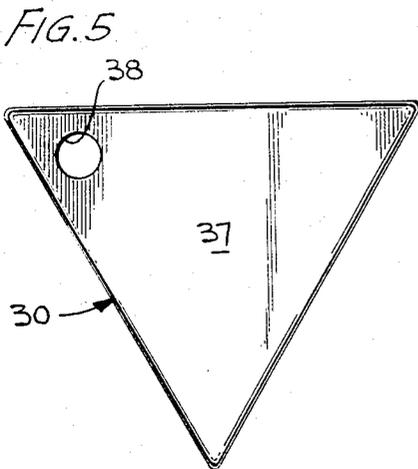
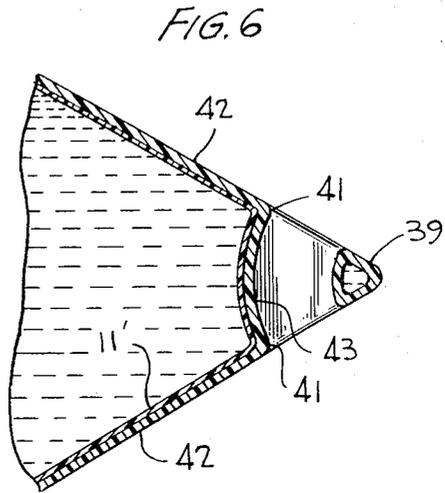
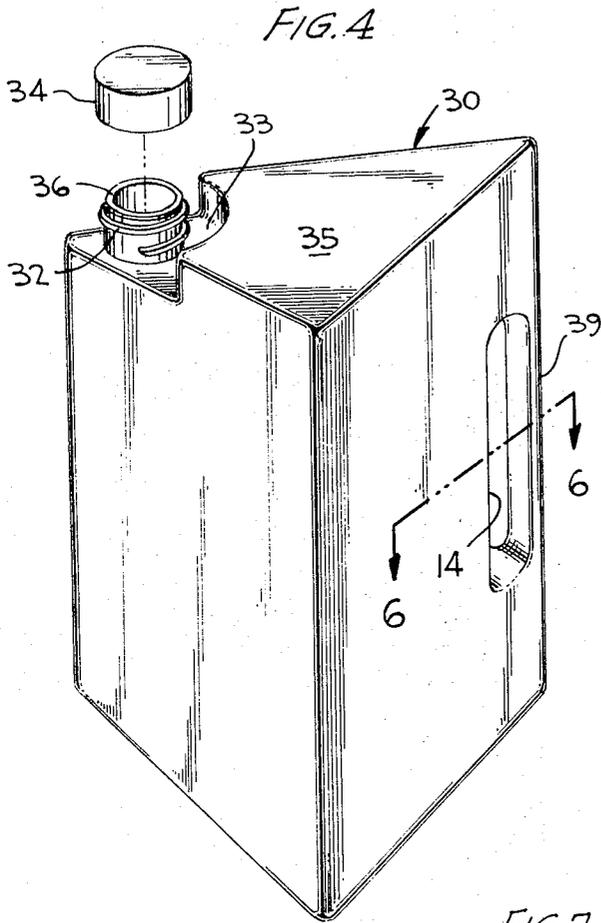


FIG. 2



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CONTAINER FOR LIQUIDS

This is a continuation, of application Ser. No. 111,581 filed Feb. 1, 1971.

This invention relates generally to improved containers for the filling or emptying of liquids and, more particularly, to a novel container construction which is especially designed for stacking or storing, which is light and attractive in design, which is economical to manufacture and which is provided with an interior sealed fluid container bag of plastic material, arranged so as to permit adequate protection for the liquid contained inside it during handling and while it is in storage, which permits an easy visual inspection of the contents while the container is in a closed position, and which meets present requirements for ease of handling and safety.

While the container of this invention is particularly suited for containing and storing milk, it can also be used advantageously to contain and store other liquids and food products including, without limitation, such products as fruit juices, nongaseous beverages, etc. Milk containers made of cardboard with suitable coatings have been widely used for a number of years due to their low unit cost and the fact that they give reasonable protection to the milk under normal conditions of use. Although these containers are generally satisfactory, it has been recognized that they possess a number of disadvantages and inherent limitations.

Also, such cardboard containers do not always have sufficient resistance and rigidity under load conditions and consequently often break during handling. And, because of the composition of such containers, printing thereon becomes difficult. As a result, printed labels must be applied to each container. This proves to be quite expensive and is reflected by substantial increases in the manufacturing costs and sale prices of said containers.

Moreover, cardboard containers, often once being used, are not refillable, but must be discarded.

In recent years, an effort has been made to develop and promote the use of milk containers constructed entirely of plastic. While the major part of such plastic containers are sufficiently sturdy and rigid, they are quite expensive and thus are not economically competitive with cardboard containers.

As will be obvious to persons skilled in the art from the hereinafter detailed description and the accompanying drawings, the containers for liquids constructed according to this invention avoid the objections and difficulties mentioned above and, at the same time, retain all the desirable attributes and characteristics of said containers. Further, the present containers for liquids, by using a synthetic plastic suitable for certain parts and another material for other parts, constructed and arranged in the manner described below, are economically competitive and give rise to numerous benefits and valuable advantages in comparison with conventional containers.

The main object of this invention is to provide a container having improved characteristics in design and construction.

Another object of this invention is to provide an improved container which is commercially competitive and avoids the objections of similar known containers.

A further object is the provision of a container for filling or emptying liquids which comprises a plastic case with a configuration suitable for stacking or stor-

ing and having a plastic bag inside which is easily separable from said case with the advantage that it can be used, or be filled again by using, a new plastic bag, along with an apparatus which fills and closes said bag.

On the other hand, the container of the invention possesses the feature that, once used, it can only be used again with said bag and apparatus since, having an orifice in the base, it is not usable for filling with other liquids.

A still further object of this invention is to provide a container of the character described which is light and attractive in its design, strong and durable in its construction, reasonable in manufacturing cost, capable of being easily stacked in piles in an open and empty or closed and filled condition, and can satisfactorily perform all the tasks for which it is made.

The above objects are successfully achieved by means of a plastic case constructed according to the invention and which has a configuration suitable for being stacked or stored to occupy the least storing space. The case is a molded construction of a single piece of plastic, having a bottom, front, back and side part and is provided with a handle shaped on one of the vertical edges which project toward the interior thereof, but without providing any additional protuberance to the design of the container. Further, it has an orifice with a threaded projection arranged to be opened or closed at will, to be filled or emptied of liquids, and this orifice is located on a sunken part of the upper portion of the case so as not to project beyond it, and an orifice in the lower portion of the case corresponding to the base. The container is characterized by having a plastic bag inside the case, which bag is intended to contain liquid inside it and, in addition, the container has an emptying orifice in its upper portion and a filling orifice in its lower portion through which a necked filling orifice of the bag projects.

The case includes a plastic bag with characteristics similar to those fully described in Mexican Pat. No. 97912 granted on Sept. 15, 1967, and which is owned by the applicant herein so that as far as possible a repetition of its description has been avoided.

At one end, the bag contents will be emptied and at its other end, which is open, the bag will be filled. This other end is connected with an orifice in the base of the case and projects beyond it. It is closed by means of application of heat with the aid of an apparatus especially designed for this purpose. The orifices of the bag are so designed that the filling orifice is smaller in diameter than the emptying orifice.

The case and the end parts of the cap are made of a suitable synthetic plastic composition, preferably polystyrene. The case is formed preferably by molding under a vacuum or pressure a sheet of high impact polystyrene to provide resistance, rigidity, homogeneity, etc., as is required. It has been established that cases formed under pressure or vacuum, as indicated and which have a thickness of approximately 0.2 to 1.0 mm, are entirely suitable and represent an economic use of the material.

The various end parts at the emptying end of the container, including the container cap, are preferably made of polystyrene by injection molding and may be made transparent. This will contribute substantially to the rigidity of the cap and made possible visual inspection of the contents of the case with the cap in its closed position.

The filler bag is plastic, generally polyethylene, but can be of any material or mixture of plastics, so as to produce a semi-transparent plastic which can easily be perforated and closed by application of heat.

The foregoing, as well as additional objects and advantages of this invention, will be easily understood by persons skilled in the art from the following detailed description and the accompanying drawings which describe and illustrate two preferred embodiments of the invention.

The characteristic details of the invention are shown in the accompanying drawings in which:

FIG. 1 is a perspective view of an improved container constructed according to this invention, and having a rectangular configuration in horizontal cross-section;

FIG. 2 is a bottom plan view thereof;

FIG. 3 is a sectional view taken along the line 4—4 of FIG. 3;

FIG. 4 is a perspective view of the modified container constructed according to this invention and having a triangular configuration in horizontal cross-section;

FIG. 5 is a bottom plan view of said modified container;

FIG. 6 is a sectional view taken along the line 6—6 of FIG. 4, and

FIG. 7 is a showing of the plastic bag before it is inserted within its casing.

Referring in detail to FIGS. 1, 2 and 3 of the drawings, it will be noted that the container consists basically of a pair of units, namely, an outer case 10 and a bag part 11 housed within said case. The container presents a configuration suitable for stacking or storing, this configuration being generally rectangular in cross-section, as in FIGS. 1, 2 and 3, although it can also be of triangular cross-section as in FIGS. 4, 5 and 6.

In the preferred embodiments of the invention, the case 10 has an externally threaded neck 12 which defines an orifice for filling or emptying of liquids. The neck is located on a depressed area 13 at the upper end 15 of the case so that when the internally threaded cap 14 is applied thereto, the upper surface thereof will be in a common horizontal plane with or below the upper end surface 15 of the container. Upon removal of the cap, puncturing of the sealed bag 11 therewithin will permit dispensing of the bag contents by pouring through the neck.

It is advisable that the neck 14 be of a substantially strong material to avoid accidental perforation of the membrane of the bag.

The sealed plastic bag 11 is of a completely closed construction which, when completely filled, is in contact with each of the internal surfaces of the case 10, including the angularly related portion 16 shown clearly in FIG. 3. The bag 11 is open at one end and near its other end has secured, as by heat sealing, a flanged collar ring 23 to the outer surface of the bag (see FIG. 7). The ring 23 fits snugly within the neck portion 12, as seen in FIG. 1, after the entire bag has been inserted within the case 10. The open end of bag 11 is thereafter pulled through an aperture 17 provided in the bottom wall 18 of the case so that it may be closed by means of a heat seal, for example, after filling the bag with the contents to be stored.

From FIGS. 1 and 3 it can be seen that a convenient handle bar 19 has been provided for the case 10, the handle being simply defined as a side corner portion of

the case made accessible through cutout portions 21 on adjacent side walls 22. The angularly related portion 16 is, of course, formed integrally with said side walls 22 as seen in FIG. 3 of the drawings. In this way, the bar 19 does not protrude outwardly of side walls 22 so as to interfere with other like cases 10 which may be stacked adjacent one another. Upon lifting of case 10, the user simply grasps the bar 19 with his fingers extending through the cutouts 16.

In FIGS. 4, 5 and 6 a second embodiment of the present invention is shown wherein a case 30, substantially triangular in horizontal cross-section, is the same in all other respects to the case 10 described in the first embodiment. An externally threaded neck portion 32 is provided on a depressed or sunken portion 33 on the top face 35 of the case. An internally threaded cap 34 similar to cap 14 is provided for closing the neck 32 and a flanged collar ring 36 similar in construction to ring 23 and heat sealed to the exterior of a bag 11' (FIG. 7) at one end thereof, fits snugly within the neck portion 32 after the bag 11' is inserted within the case 30. In the bottom wall 37 of case 30 an aperture 38 is provided through which the open end of bag 11' projects so that it may be closed in some convenient manner as by heat sealing after the bag is filled.

As clearly shown in FIG. 6, a handle bar 39 is defined along one corner of the case by means of cutout portions 41 in the side walls 42 of the case 30, the side walls being joined by a wall portion 43. As in the first embodiment, the handle is provided so as not to protrude outwardly of the outer dimensions of case 30 and the neck portion 32 is sufficiently depressed within top wall 35 so that the top of cap 34 will not extend thereabove when threaded thereon. Also, several of the triangular-shaped cases 30 may be conveniently stacked in abutting relation in a minimum of space.

After the bag 11 or 11' is inserted within its case, as hereinabove described, its open end is pulled through the aperture in the bottom wall of the case, the bag is filled and thereafter sealed. The bag portion presented through the neck portion is there simply punched through as with a pointed object, or otherwise opened, so as to permit the bag contents to be poured through the open neck.

From the foregoing, it is believed that the objects, advantages, construction and operation of the present invention will be easily understood by persons skilled in the art, without further description. Although the invention has been shown and described in various practical forms, it is recognized that certain parts or elements thereof are representative of other parts or elements that can be used substantially in the same way to obtain substantially the same results. It should be therefore understood that the invention is not limited to the exact details herein shown and described but is subject to such modifications as fall within the scope of the appended claims.

I claim:

1. A dispensing container for liquids comprising, a case having a top wall, a bottom wall and interconnecting side walls of polygonal cross-sectional configuration suitable for stacking with other like cases in a minimum of space, a handle formed at the intersection of a pair of said side walls, said handle projecting toward the interior of said case without protruding outwardly of the outer dimensions thereof, an externally threaded neck portion defining a dispensing opening located on

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a depressed portion provided on said top wall, an internally threaded cap for threadedly engaging with said neck portion, said neck portion being of such a length that said cap, when threaded thereon, will not extend outwardly of the plane of said top wall, said bottom wall having an aperture therein, a plastic bag for containing liquid insertable within the interior of said case, said bag having a flanged collar ring secured to the exterior thereof at one end having a normally open and closable other end, said other end projecting through said bottom wall aperture and said ring fitting snugly within said neck portion, and said bag being imperfo-

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rate within said collar ring.

2. The container according to claim 1 wherein said case is rectangular in cross-section.

3. The container according to claim 1 wherein said case is triangular in cross-section.

4. The container according to claim 1 wherein said handle is defined by cutout portions in each of said pair of side walls located near said intersection, and a wall portion interconnecting said pair of side walls inwardly of said handle thereby formed.

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