United States Patent [19]

Mason

[11] **3,917,116**

[45] **Nov. 4, 1975**

[54] **PACKAGE**

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[73] Assignee: **Mason Keller Corporation,** Roseland, N.J.

[22] Filed: **Feb. 1, 1974**

[21] Appl. No.: **438,530**

Related U.S. Application Data

[63] Continuation of Ser. No. 190,104, Oct. 18, 1971, abandoned.

[52] **U.S. Cl.** **222/92;** 206/498; 222/107; 222/187; 222/541

[51] **Int. Cl.**[2] **B65D 47/10;** B65D 65/32; B67D 3/00

[58] **Field of Search** 222/107, 187, 215, 541, 222/92; 206/484, 498

[56] **References Cited**

UNITED STATES PATENTS

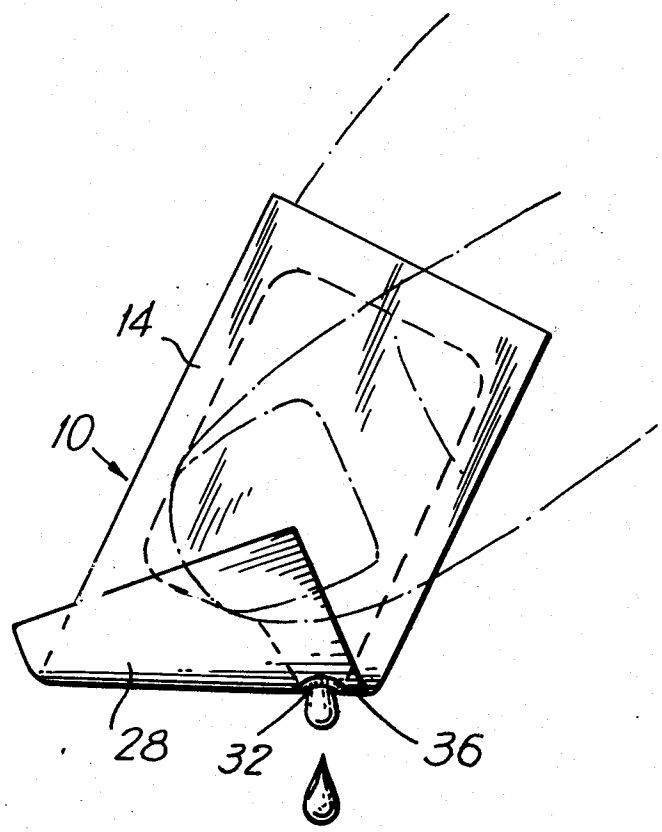
2,248,266	7/1941	Abrams	206/498 X
2,648,463	11/1953	Scherer	222/107
2,705,579	4/1955	Mason	222/107
2,956,710	10/1960	O'Connor	222/107
2,998,880	9/1961	Ladd	206/484 X
3,036,756	5/1962	Lieschke	229/66
3,342,326	9/1967	Zackheim	222/541 X
3,412,907	11/1968	Faso	222/187

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[57] **ABSTRACT**

Controlled flow liquid disposable unit package for single use packaging and dispensing of liquid commodities and which may be autoclaved and which are easily opened to provide an aseptic opening.

1 Claim, 7 Drawing Figures



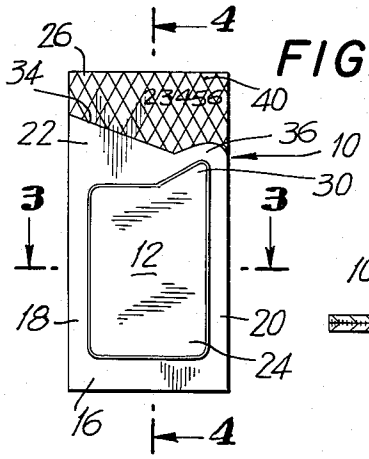


FIG. 1

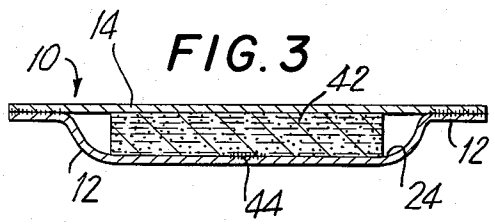


FIG. 3

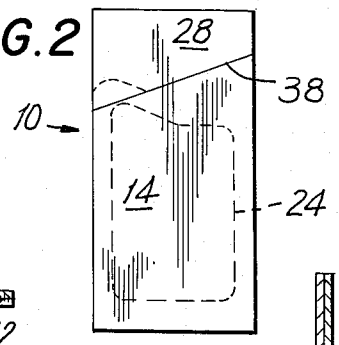


FIG. 2

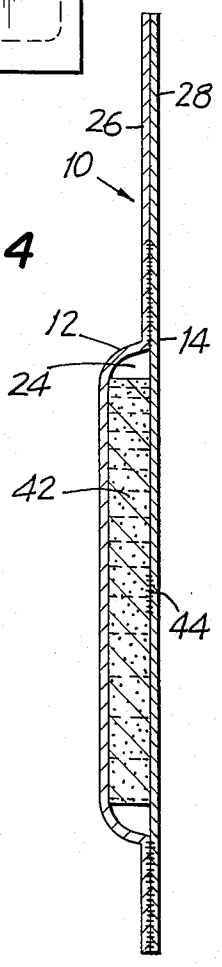


FIG. 4

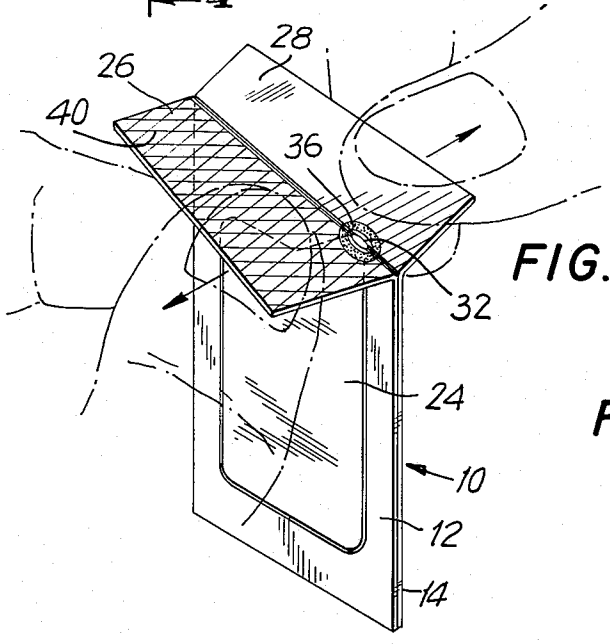


FIG. 5

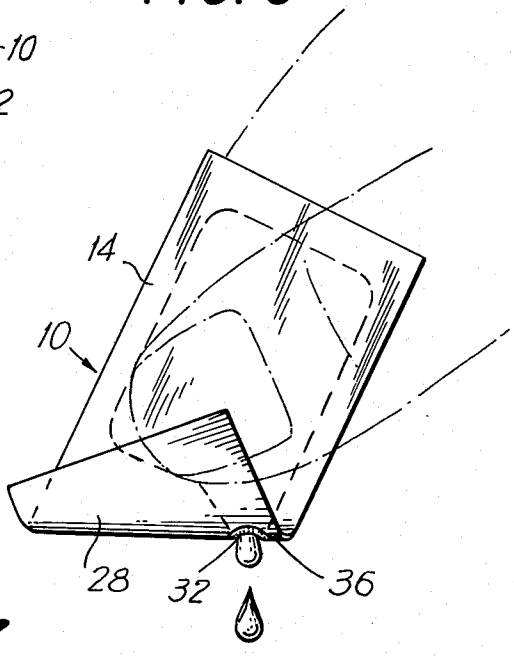


FIG. 6

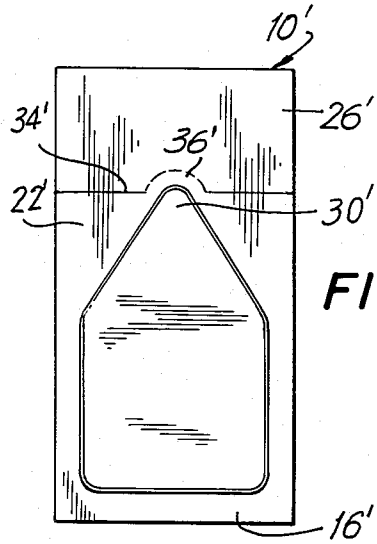


FIG. 7

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PACKAGE

This is a continuation of application, Ser. No. 190,104 filed Oct. 18, 1971 and now abandoned.

The present invention relates generally to packages and, more particularly, to disposable unit packages for liquid products.

The *Packaging Institute, Glossary of Terms*, copyright 1955, 2d Edition, contains the following definitions:

Disposable

1. Easy to destroy or get rid of.
2. Not intended for re-use, as an inexpensive package like a paper bag, metal can, etc.

Package, Unit

1. Generally, a package which constitutes a unit of sale of a product at the consumer level.
2. A package which contains a single portion or dose of a product.
3. A unit-of-sale package in which single portions of the product are individually compartmented.

A primary object of the present invention is the provision of novel and improved disposable unit packages.

Another primary object of the present invention, in addition to the foregoing object, is the provision of such disposable unit packages particularly adapted for providing a controlled flow of a liquid commodity.

Still another primary object of the present invention, in addition to each of the foregoing objects, is the provision of such packages providing an aseptic opening so that the package contents will not become contaminated.

Yet still another primary object of the present invention, in addition to each of the foregoing objects, is the provision of such packages that can be autoclaved to assure sterility of the contents.

Yet still further, it is another primary object of the present invention, in addition to each of the foregoing objects, to provide such packages wherein the contents may be controllably dispensed, drop by drop or more rapidly.

Yet another and still further primary object of the present invention, in addition to each of the foregoing objects, is the provision of such packages which may be completely hermetically sealed.

A yet further and still another primary object of the present invention, in addition to each of the foregoing objects, is the provision of such packages which may be readily and easily opened.

Yet another and still further primary object of the present invention, in addition to each of the foregoing objects, is the provision of such packages readily adapted to incorporate control or lot numbers.

It is a yet still further primary object of the present invention, in addition to each of the foregoing objects, to provide such packages fabricated of coated foil, or the like.

It is still another primary object of the present invention, in addition to each of the foregoing objects, to provide such packages having a pocket containing a pad for containing a liquid commodity.

Still another and yet further primary object of the present invention, in addition to each of the foregoing objects, is the provision of such packages wherein such pad is sealed to the foil.

Another and yet still further primary object of the present invention, in addition to each of the foregoing objects, is the provision of such packages which are economical to manufacture, handle, store and use.

The invention resides in the combination, construction, arrangement and disposition of the various component parts and elements incorporated in improved packages constructed in accordance with the principles of this invention. The present invention will be better understood and objects and important features other than those specifically enumerated above will become apparent when consideration is given to the following details and description, which when taken in conjunction with the annexed drawing describes, discloses, illustrates and shows a preferred embodiment or modification of the present invention and what is presently considered and believed to be the best mode of practicing the principles thereof. Other embodiments or modifications may be suggested to those having the benefit of the teachings herein, and such other embodiments or modifications are intended to be reserved especially as they fall within the scope and spirit of the subjoined claims.

IN THE DRAWING

FIG. **1** is an elevational side view of a package constructed in accordance with the principles of the present invention;

FIG. **2** is an elevational view similar to FIG. **1** taken from the opposite side;

FIG. **3** is an enlarged cross-sectional plan view taken along line **3—3** of FIG. **1;**

FIG. **4** is an enlarged elevational cross-sectional view taken along line **4—4** of FIG. **1;**

FIG. **5** is a perspective illustration of a step in the opening of a package in accordance with the present invention;

FIG. **6** is another perspective illustration of a further step in the opening and in the utilization of packages of the present invention; and

FIG. **7** is a side elevational view similar to FIG. **1** of another package constructed in accordance with the principles of the present invention.

With reference now to the drawing, there is shown and illustrated a unit package constructed in accordance with the principles of the present invention and designated generally by the reference character **10.** The package **10** may be made of two webs **12** and **14** sealed together along an end portion **16,** along major portions **18** and **20** of the sides and along an intermediate transverse portion **22** extending between the side portions **18** and **20** at the ends thereof remote from the end **16** thereby providing a sealed pocket **24** completely contained by the peripherally sealed ends **16** and **22** and sides **18** and **20.** The remaining portions of the web **12** and **14** are preferably unsealed from each other to define a pair of flap portions **26** and **28** at the end portion of the package remote from the end **16.**

The pocket **24** may be drawn in the web **12,** as by fluid pressure prior to formation of the peripheral seals **16, 18, 20** and **22** and the webs **12** and **14** may comprise a metallic foil, such as aluminum foil previously coated on the adjacent surfaces with a heat activatable adhesive, such as a thermoplastic so that, upon assembly and pressing between mating heated dies defining the seal area **16, 18, 20** and **22,** the package will be formed as aforesaid.

The pocket **24** may be, as shown, of substantially any desired configuration such as, for example, the generally rectangular configuration shown and illustrated

and is provided with a spout portion **30** extending peripherally outwardly thereof which, upon opening of the package as set forth hereinafter defines a nozzle opening **32** as shown in FIG. **5.**

The spout portion **30** extends peripherally outwardly of the remainder of the pocket **24** towards the flaps **26** and **28** and generally into the intermediate transverse seal area **22.** Further, the spout portion **30** extends into the seal area **22** a sufficient distance as to extend beyond an outer edge **34** defining the seal area **22** so that a continuation of the outer edge **34** of the seal area passes through the spout portion **30.** A closure sealing extension **36** of the seal area **22** provides for sealing of the spout **30** prior to manual opening thereof.

On the web **14,** means, such as an indicating line **38** may be provided corresponding to the outer edge **34** of the seal area, including the extension thereof intersecting the spout portion **30.** Then, if the flaps **26** and **28** are folded outwardly along the edge **34** and line **38,** the seal closure portion **36** being separated down to the line **38,** then the opening **32** will be developed as shown in FIG. **5.**

As an aid in causing separation of the flaps **26** and **28,** one or more of the flaps, such as the flap **26** may be provided with knurling **40,** as shown, to provide a slight separation between the flaps **26** and **28** at all times.

Since the area immediately surrounding the opening **32** comprises a portion of the interior of the spout **30** and a portion of the closure sealing portion **36,** an aseptic opening is formed to prevent any contamination of material being exuded through the opening **32,** as the pocket **24** is squeezed, as shown in FIG. **6.**

To aid in containing a liquid material within the pocket **24,** to aid in preventing inadvertent rupture of the pocket **24,** and as an aid in enabling the control of exudation of liquid outwardly through the opening **32,** an absorbent pad **42** may be positioned within the pocket **24** and saturated with a liquid material to be packaged such as, by way of example only, and without limitation, food flavorings, medication drops, vitamin drops, cosmetics, condiments, topical medications, and the like. The pad **42** may comprise substantially any suitable material as will be readily apparent to those who may be skilled in the art, including cellulose pads, fabric pads, non-woven textile pads, plastic fibrous mats, foamed plastic, and the like and may be freely positioned within the pocket **24** or may be secured therewith, as at a zone **44** by heat sealing, adhesive sealing, and the like.

By appropriate selection of the heat-sensitive foil coating to be compatible with the product, packages constructed in accordance with the present invention provide complete hermetic sealing with zero transmission of moisture and contamination. Further, by appropriate selection of the coating, packages in accordance with the present invention may be autoclaved so as to be thereby rendered sterile and as heretofore pointed out, when the flaps **26** and **28** are folded backwardly, as shown in FIGS. **5** and **6,** an aseptic opening is provided.

As heretofore pointed out, pockets of other shapes and having nozzle portions disposed in other than a corner relationship may be utilized in the present invention. For example, and again, without limitation, there is shown and illustrated in FIG. **7** another package constructed in accordance with the principles of the present invention, wherein like reference characters are used as for the package **10,** with the reference characters being primed. Hence, the nozzle portion **30'** of the package **10'** is disposed generally at the center line thereof, with the closure sealing portion **36'** thereof extending above the generally transversely extending seal edge **34'** with the transverse sealing portion **22'** being also generally symmetric about the center line of the package. Hence, when the flaps **26'** and **28'** of the package **10'** are folded downwardly towards the end **16',** an aseptic opening will be formed.

While the invention has been described, disclosed, illustrated and shown in terms of an embodiment or modification which it has assumed in practice, the scope of the invention should not be deemed to be limited by the precise embodiments or modifications herein described, disclosed, illustrated or shown, such other embodiments or modifications as may be suggested to those having the benefit of the teachings herein, being intended to be reserved especially as they fall within the scope and breadth of the claims here appended.

What is claimed is:

1. Package for shipping, storing and controlled dispensing of a unit or single use quantity of liquid, comprising, in combination, an absorbent resilient pad of a size easily compressed between the thumb and forefinger of a user and of a material which is nonreactive with such liquid; a unit or single use quantity of liquid absorbed within said pad; a pair of flexible generally rectangular sheets of metallic foil superposed one over the other one of said sheets having a recess pre-formed therein defining a generally rectangular pocket only slightly larger than said pad for containing said pad therewithin without compression to maintain such liquid absorbed within said pad during shipment and storage, the other of said sheets defining a cover extending across and covering said recess enabling compression of said pad and controlled expressing of said liquid from said pad by squeezing thereof between a user's thumb and forefinger without contaminating said liquid, said pad and said sheets being of sufficient resilience and flexibility to enable expansion of said pad, enlargement of said pocket and cessation of expression of liquid from said pad upon release of such user compression thereof, said recess further comprising a portion defining an elongated and narrow spout portion extending generally outwardly of said pocket, and means in the nature of a heat activatable coating hermetically sealing said sheets together peripherally completely around said pocket and spout portion to protect said pad and liquid from contamination and being manually peelable in the region of said spout to enable manual peeling back of said sheets in the region of said spout to a controlled extent less than the length of said spout portion to provide a restricted opening near the outboard end of said spout portion and an aseptic annular rim defined by a portion of said peeled sheets so that during expression of said liquid through said opening said liquid only touches material theretofore previously sealed to retain said liquid sterile as it is expressed outwardly through said spout portion and said opening and enabling the dispensed liquid to be readily visually observed during such dispensing by the user, said means for sealing forming a stop line which defines a generally straight line edge obliquely disposed relative the longitudinal axis of said pocket and generally perpendicular to the longitudinal axis of said spout portion, said spout being narrow and tapered outboard thereof to define a restricted dispensing nozzle upon outward bending of said outboard end portions of said

sheets and parting of said sealed portion from the end of said spout portion to said straight line edge so that the outboard end portions of said sheets, upon being folded backwardly thereto, extend upwardly of said spout and out of the visual line to said opening to thereby provide further enhanced visual observation and control of the dispensing.

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