Aug. 2, 1938. L. L. SALFISBERG 2,125,318

POWDER DISPENSING UNIT

Filed Sept. 20, 1937 2 Sheets-Sheet 1

Fig. 1

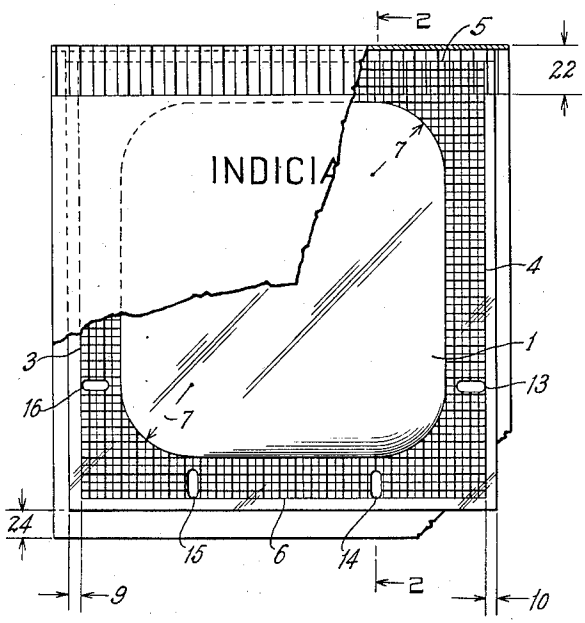


Fig. 2

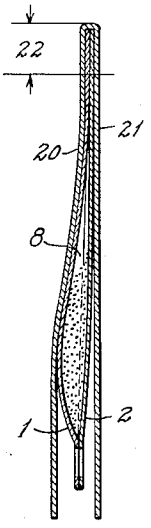
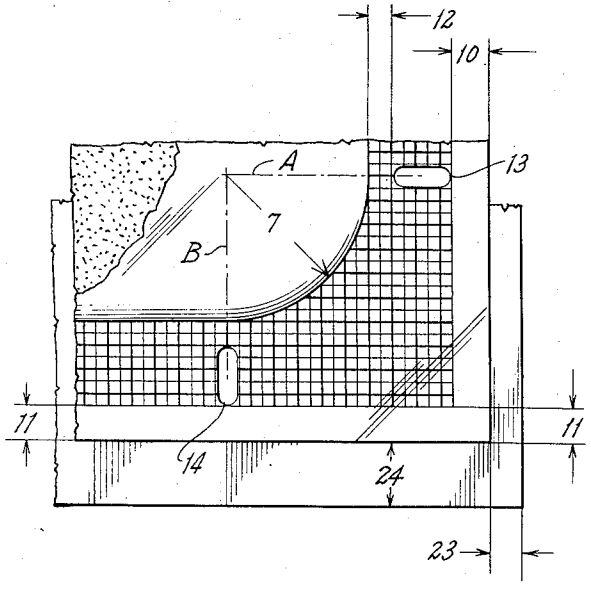


Fig. 3



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Filed Sept. 20, 1937 2 Sheets-Sheet 2

Fig. 4

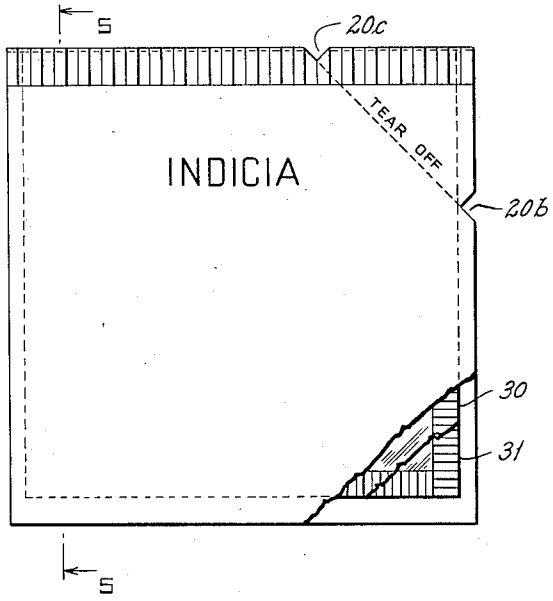


Fig. 5

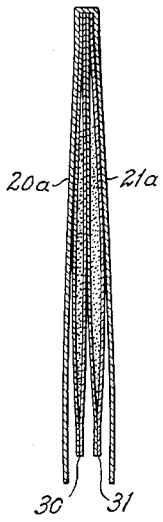
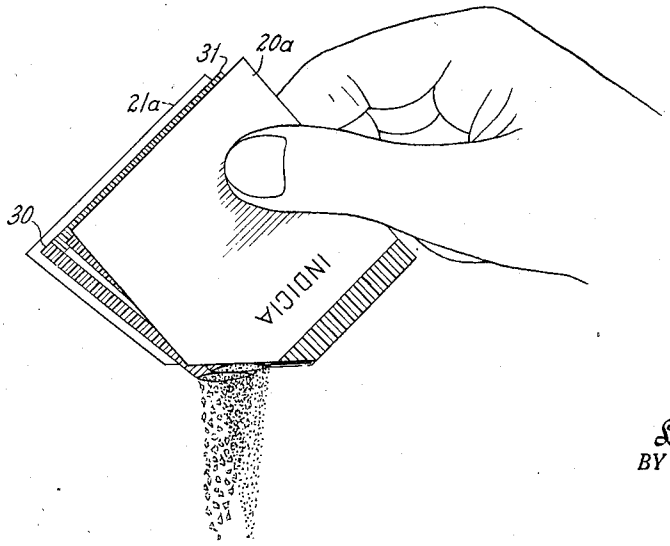


Fig. 6



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Patented Aug. 2, 1938 2,125,318

UNITED STATES PATENT OFFICE

2,125,318

POWDER DISPENSING UNIT

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Application September 20, 1937, Serial No. 164,689

9 Claims. (Cl. 221—61)

This invention pertains in general to packages for individual quantities of commodities and particularly to packages adapted to contain fluids and the like.

In packaging individual quantities of fluids, such as powders, pastes, liquids, and other flowing substances, there are various problems to be met which are not met with in the packaging of other types of commodities. Fluid packages must be constructed so that there will be no leakage; so that there will be no opening of the seals due to stresses resulting from forces exerted by the contained fluid; and the package must be easily and effectively opened for convenient discharge of the fluid without spilling.

The principal object of the invention comprises providing a package for dispensing individual quantities of fluids having a seal with a guided tearing arrangement for permitting opening of a corner of the commodity containing enclosure to dispense the contained commodity.

Another object comprises providing a fluid containing package including a commodity pocket formed by sealing flanges having a guide arrangement for forming controlled openings in the package.

A further object of the invention consists in providing a package including an envelope and a cover therefor arranaged to permit opening of the envelope through the cover for discharge of the contained commodity.

A still further object of the invention comprises providing a multiple unit package with an arrangement for opening all of the multiple units in a single operation.

These and other objects will be apparent from the following, reference being had to the accompanying drawings in which like reference numerals designate corresponding parts and in which:

Fig. 1 is a view of a dispensing unit in accordance with the invention with parts broken away to show the details of construction;

Fig. 2 is a sectional view taken along the line 2—2 of Fig. 1;

Fig. 3 is an enlarged view of a corner portion of the representation of Fig. 1, showing a guided tearing arrangement in accordance with the invention;

Fig. 4 is a view of a multiple package in accordance with the invention showing a tearing arrangement for opening the multiple packages with a single tearing operation.

Fig. 5 is a sectional view taken along the line 5—5 of Fig. 4; and

Fig. 6 is a view showing the use of the package depicted in Fig. 4.

The invention contemplates fabricating a plurality of layers of packaging material in a manner such as to produce a completely enclosed pocket containing structure for a fluid commodity and adapted to prevent leakage of the commodity and opening of the seals of the package due to forces exerted by the contained fluid, while at the same time permitting facile opening of the package to provide for the discharge of the contained fluid commodity. As one of the features of the invention, several distinct commodities which are intended to be mixed, may be commonly discharged by a single tearing operation to open the package.

Specifically, the invention provides a pocket structure formed by sealing flanges enclosing the fluid commodity and having radii joining the rectilinear boundaries of the package so as to equalize stresses produced in the walls of the package by forces exerted by the contained fluid which otherwise have a tendency to open the seals of the package. The pocket structure defined by the sealing flanges is contained within guard sheets, and the flanges are provided with a tearing arrangement so that the pocket may be effectively opened for the discharge of the contained commodity without spilling.

Referring to the drawings in detail, there are provided two opposed sheets of packaging material 1 and 2 having side sealing flanges 3 and 4 and top and bottom sealing flanges 5 and 6. The material 1 and 2 may be composed of various substances such as transparent regenerated cellulose having a thermo-setting coating, thermally sealable rubber, paper, and the like. The flanges 3—6 comprise sealing areas within which the walls of the material 1 and 2 are sealed together and at the same time mechanically interlocked by virtue of sealing dies which produce an interdigitation of the walls of the material. The sealing flanges are of rectilinear configuration but have the sides of the inner boundaries of the vertical flanges 3 and 4 connected, by radii 7, with the rectilinear sides of the inner boundaries of the horizontal top and bottom sealing flanges 5 and 6.

The flanges 3—6 produce and define an inner pocket 8 in which the fluid commodity is dispensed. The fluid commodity is contained within the pocket by the sealing flanges and the radii configuration of the inner rectilinear boundaries of the pocket produce an even distribution of the stresses in the walls of the packaging ma-

terial as produced by the forces exerted by the contained freely flowing commodity, thus avoiding any tendency to open the seals.

The sealing flanges include marginal areas 9, 10 and 11 in which no interdigitation occurs. The remainder of the sealing area of the flange may be of an oxidized and embrittled nature, whereas, if desired, the areas 9—11 may retain their tougher resiliency so as to serve as guard lines for the remainder of the sealing flanges, thereby further assisting in preventing opening of the flanges. Between the marginal guard areas 9—11 and an inner reserved area 12, perforation loops 13—16 are provided as shown. These perforation loops are disposed along axes 15 and 16 which originate at the center point of the radius 7. Axes 15 and 16 intersect the points of tangency of the radius 7 with respect to the inner rectilinear boundaries of the pocket 8.

The perforation loops 13—16 permit either corner of the package to be opened along the axes A and B. The opening of the package is accomplished by tearing through the guide margin 10 at a point adjacent either of the loops 13 and 14, the loops effecting the controlled opening of the corner defined by the radius 7. From this corner, the contained fluid may then be exuded by application of pressure to the side walls of the pocket 8.

The upper flange 5 of the package is provided between folded over sheets 20 and 21 comprising a cover. A transverse interdigitated heat seal is provided within the area 22 which interlocks the flange 5 with the walls of material 20 and 21. The walls of material 20 and 21 have side guide areas 23 and 24 which further protect the envelope guard areas 9—11 to prevent opening of the sides of the package. The sheet 8 may be provided with indicia such as printed instructions and/or advertising with respect to the contained commodity.

In another arrangement of the invention, the corner tearing detail shown in Fig. 3 may be provided in the package at the upper right hand corner, and outer cover sheets 20*a* and 21*a* may be provided with notches 20*b* and 20*c* with an interconnecting perforated tearing guide line in the covers 20*a* and 21*a*. In this arrangement, the corner of the entire package structure can be torn off for the opening of the package envelope structure.

In the embodiment shown in Fig. 3, a pair of fluid containing envelopes 30 and 31, is sealed between the cover sheets 20*a* and 21*a*. These envelopes 30 and 31 are of a construction similar to the inner envelope depicted in Figs. 1 and 2. As shown in Figs. 4 and 5, the inner envelopes contain dissimilar pharmaceutical commodities adapted to be united in use. In using such dual-contained commodities, the package structure is torn off between the notches 20*b* and 20*c* and the contents of both of the envelopes 30 and 31 may be simultaneously discharged at the corners thereof, as depicted in Fig. 6, the user exerting exudation pressure through the cover sheets 20*a* and 21*a*.

Although a preferred form of dispensing unit has been disclosed, it will be recognized that various changes and equivalent structures can be made without departing from the scope of the invention. Therefore, no limitation is intended except as pointed out in the appended claims.

What is claimed as new and original to be secured by Letters Patent of the United States is:

1. A fluid dispensing unit comprising layers of packaging material bonded together in a sealing flange, said flange forming a substantially rectangular inner fluid pocket with round corners for distributing the stresses of the contained fluid.

2. The fluid dispensing unit in accordance with claim 1 including a weakened tearing guide-line in said sealing flange and extending across one of rounded corners for opening the walls of said material at said rounded corner to permit of the exudation of the contained fluid commodity.

3. A fluid dispensing unit in accordance with claim 1 including cover sheets attached to both sides of said combined layers to permit the unit as a whole to be grasped and handled by said cover sheets.

4. A fluid dispensing unit in accordance with claim 1 including a guard sheet structure attached to said combined layers and having the edges thereof extending beyond the edges of said flange to form an encircling protective guard margin therefor.

5. A fluid dispensing unit in accordance with claim 1 in which said sealing flange is crimped but including an outer uncrimped edge margin for guarding said sealing flange.

6. A dispensing package unit comprising, layers of packaging material sealed together to form an envelope structure having sealing flanges enclosing a commodity containing pocket structure, and a guard structure for the edges of said envelope comprising sheet material attached to said envelope and having parts projecting around the edges of said sealing flanges.

7. A dispensing package comprising, a commodity containing envelope structure having a guard cover provided with a tearing guide line extending across a corner of said cover whereby the composite package including envelope structure and cover may be torn through to open said envelope structure without completely detaching the same from said cover so that the contained commodity may be exuded through the torn opening with the envelope held through said cover.

8. The dispensing package in accordance with claim 7 in which said envelope package comprises a plurality of pockets containing dissimilar commodities adapted to be conjointly combined in exudation through said torn opening.

9. A dispensing package comprising a plurality of commodity envelopes disposed one above the other within a cover having a tearing guide extending across a portion thereof whereby said plurality of envelopes can be opened by a common tearing operation for the discharge of a commodity.

LEROY L. SALFISBERG.