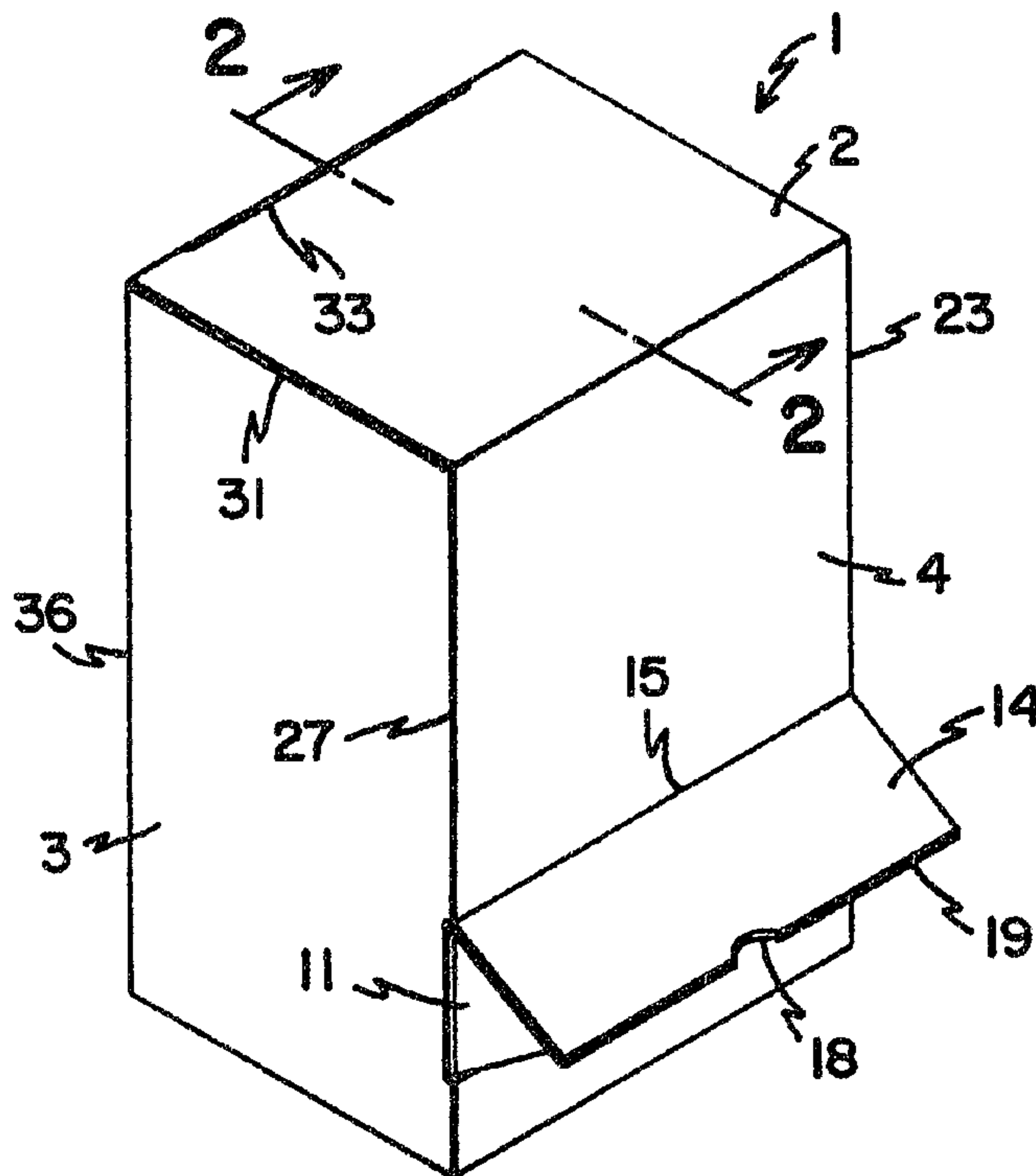




(86) Date de dépôt PCT/PCT Filing Date: 1992/08/04
 (87) Date publication PCT/PCT Publication Date: 1993/03/18
 (45) Date de délivrance/Issue Date: 2003/12/02
 (85) Entrée phase nationale/National Entry: 1994/01/24
 (86) N° demande PCT/PCT Application No.: US 1992/006496
 (87) N° publication PCT/PCT Publication No.: 1993/004936
 (30) Priorité/Priority: 1991/09/09 (756,458) US

(51) Cl.Int.⁵/Int.Cl.⁵ B65D 5/72, B65D 81/26
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(54) Titre : DISTRIBUTEUR D'ARTICLES CONDITIONNES SENSIBLES A L'HUMIDITE
 (54) Title: DISPENSER FOR MOISTURE-SENSITIVE PACKAGES



(57) Abrégé/Abstract:

A unit dose package dispenser (1) including a drawer (13) and ramp (7) such that unit dose packages are urged through an aperture (10) and into the drawer (13). The ramp (7) is elevated from the bottom region (6) of the container (1) so as to isolate the contents of the container from moisture. A cover (14) formed integrally with the container front wall (4) tends to protect the contents of the drawer (13) from moisture in the surrounding environment.



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

<p>(51) International Patent Classification ⁵ : B65D 5/72</p>	<p>A1</p>	<p>(11) International Publication Number: WO 93/04936</p> <p>(43) International Publication Date: 18 March 1993 (18.03.93) 2114116</p>
<p>(21) International Application Number: PCT/US92/06496</p> <p>(22) International Filing Date: 4 August 1992 (04.08.92)</p> <p>(30) Priority data: 756,458 9 September 1991 (09.09.91) US</p> <p>(71) Applicant: ECOLAB INC. [US/US]; Ecolab Center, St. Paul, MN 55102 (US).</p> <p>(72) Inventors: FRITZ, Barbara, L. ; 15048 Portland Avenue South, Burnsville, MN 55337 (US). GLADFELTER, Elizabeth, J. ; 1754 Arona Street, Falcon Heights, MN 55113 (US). OUTLAW, Tina, O. ; 3849 East 78th Street, Inver Grove Heights, MN 55076 (US).</p>		<p>(74) Agents: ROTHFUS, Joel, A. et al.; Merchant, Gould, Smith, Edell, Welter & Schmidt, 1000 Norwest Center, 55 East Fifth Street, St. Paul, MN 55101 (US).</p> <p>(81) Designated States: AU, CA, FI, JP, NO, European patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, SE).</p> <p>Published <i>With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i></p>
<p>(54) Title: DISPENSER FOR MOISTURE-SENSITIVE PACKAGES</p> <p>(57) Abstract</p> <p>A unit dose package dispenser (1) including a drawer (13) and ramp (7) such that unit dose packages are urged through an aperture (10) and into the drawer (13). The ramp (7) is elevated from the bottom region (6) of the container (1) so as to isolate the contents of the container from moisture. A cover (14) formed integrally with the container front wall (4) tends to protect the contents of the drawer (13) from moisture in the surrounding environment.</p>		

DISPENSER FOR MOISTURE-SENSITIVE PACKAGESBackground of the Invention1. Field of the Invention

5 The present invention relates to a method of and device
for dispensing moisture-sensitive unit dose packages. More
particularly, the invention is concerned with a method of and
a device for storing and dispensing multiple unit dose
10 packages from a central location in a humid or moist
environment over a period of one to four weeks.

2. Description of Related Technology

Unit dose packages are packages containing a single
premeasured amount of a product which is used in some
subsequent process, such as cleaning. In that case, a
15 package of detergent, formed into a tablet, a packet of
powder or granules, or perhaps a gelatin material is added to
a given amount of water to create a cleaning solution having
the appropriate concentration of active cleaning ingredient.

Unit dose packages must be protected from their
20 environment and kept dry in order to be functional. The
product must be kept chemically functional and physically
usable during its shelf life. If unit dose, moisture-
sensitive products absorb an unacceptable amount of moisture,
which is typically a very small amount of moisture, the
25 product may not meet functional claims and may not be
removable from the package. A unit dose package dispensing
device which permits moisture to be introduced into the
package may spoil or render useless a large percentage of the
package's contents, thus discouraging a customer from buying
30 a similar product in the future. Thus, the marketability of
moisture-sensitive unit dose products is protected and
enhanced by a storage and dispensing device that preserves a
dry environment for the product even when the package is
stored in moist surroundings, such as in a kitchen or
35 bathroom.

Moisture can also be introduced into a package by the wet
hands of a user attempting to withdraw one of the unit dose
containers. Also, since the user's hands may be wet, it is
impractical for them to unscrew or manipulate a complicated

packaging device in order to obtain the unit dose package, since their hands are slippery and cannot grip a complicated container easily.

Ideally, the container should be made of an inexpensive material, such as cardboard, and should provide some protection for the contents when not in use. The dispenser should not present a serious impediment to obtaining the product when desired so as to waste time or require undue manual dexterity.

Cardboard cartons bearing some similarity to the present invention are known. For example, U.S. Pat. No. 1,000,624, issued to Pexton, discloses a cardboard carton having a trough that extends outwardly from a bottom portion of the carton. The Pexton device, however, does not disclose any method of protecting the contents of the trough from moisture once the trough is extended into a dispensing position.

U.S. Pat. No. 4,752,029, issued to Buford, discloses a display carton for bulk items which has a separate, insertable platform insert. The carton has a front bin wall which is pivotable to an open position when a tear strip is removed. When the bin is in its open position, there is no means by which the contents of the container are protected from moisture.

U.S. Pat. No. 1,645,771, issued to Pillsbury, discloses a combined container and dispenser having an outwardly extending trough near a bottom portion of the container. However, the Pillsbury device does not disclose a method of protecting the contents to be dispensed from moisture when the dispensing trough is extended into its dispensing position.

U.S. Pat. No. 2,556,707, issued to Rendall et al., discloses a convertible shipping carton and self-feeder which contains a plurality of troughs near a bottom region of the container. However, the Rendall et al. disclosure does not teach or suggest a method of protecting the contents of the trough from moisture when the troughs are extended into a dispensing position.

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U.S. Pat. No. 2,847,153, issued to Guyer et al.,
discloses a dispenser box having a lower trough extending
5 across the width of the container. However, Guyer et al.
does not disclose a means of protecting the contents of the
trough from moisture.

U.S. Pat. No. 4,138,052, issued to Torigian, discloses a
multi-layer tray dispensing package, which includes a series

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of trays stacked vertically, and which may be removed from the dispenser package by removing a portion of the end panel itself, thereby forming a sort of lid. However, the Torigian disclosure assumes that the product to be dispensed is
5 already in a waterproof container, and so the lid formed by the end panel is in a horizontal or higher position whenever a tray is removed far enough to allow the product to be accessible. The horizontal position of the end panel lid does not encourage the efficient runoff of moisture should it
10 impinge the surface of the box, and similarly, the Torigian device requires both the lifting of the lid and the removal of the tray in order to gain access to the product being dispensed.

Finally, U.S. Pat. No. 4,186,866, issued to Zicko,
15 discloses a dispenser container with a cover. Zicko discloses a trough having a hinged lid, but the trough is located at the extreme bottom of the container, thereby providing no protection against a moist surface upon which the container may rest, should water seep through the
20 cardboard bottom. Similarly, Zicko does not anticipate protection from a moist environment insofar as apertures are included in the sides of the box for viewing its contents. Zicko also does not anticipate the need for insertion and withdrawing of the trough itself, since no means is provided
25 for easily gripping the trough lip to withdraw it from the container housing.

Summary of the Invention

The present invention has been achieved after full consideration of the foregoing problems.

30 Accordingly, the present invention includes a corrugated carton having a two-piece design including a dispensing feature intended for moisture sensitive unit dose packages. The material used is preferably an "E-FLUTE" corrugated bleached board. The carton has a self-contained drawer that
35 pulls out from the main carton body to become the sole access point for the product to be dispensed. There is an integral awning feature or cover that automatically closes off the

drawer opening whenever the product is not being dispensed. The dispensing feature includes a ramp that is located near the bottom of the carton, but elevated some distance above the bottom to provide for protection from moist surfaces.

5 The slanted ramp near, but elevated above, the bottom of the interior of the carton aids in moving the unit dose packages into the drawer residing beneath the awning. Once the package is empty, it may be easily crushed and recycled.

The dispensing feature protects multiple, water-sensitive
10 unit dose packages from moisture by limiting the amount of product exposed to the outside environment at any one time. This is accomplished first by limiting the number of unit dose packages present in the drawer, and secondly by using an integral awning that covers the product being held in the
15 drawer between dispensing events.

Since the drawer feature is located near the bottom of the container and is the only access point, hand access is limited. With water-sensitive unit dose products, it is critical that they be protected from wet hands. In the
20 present invention, since only a partial length of a human finger can gain access into the drawer, it reduces the chance that a unit dose product, other than the one being removed at the time, will get wet. Also, since the user must reach in from the bottom, rather than the top, moisture is kept from
25 dripping down into the entire carton of unit dose product. Furthermore, the slanted ramp near the bottom of the carton moves unit dose packages forward into the dispensing drawer while limiting hand access into the remainder of the package.

Finally, the package is easy to use since the awning may
30 be lifted by one hand and the unit dose package removed with the same hand as needed.

Brief Description of the Drawings

FIGURE 1 is a perspective view showing a dispensing apparatus constructed according to the principles of the
35 present invention;

FIGURE 2 is a sectional view, taken along lines 2-2, of the apparatus depicted in Fig. 1;

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FIGURE 3 is a plan view of a cut and scored blank of cardboard or the like for forming the apparatus depicted in Fig. 1; and

FIGURE 4 is a plan view of a cut and scored blank of paperboard or the like for forming the pivoting drawer contained in the apparatus depicted in Fig. 1.

Detailed Description of the Preferred Embodiments

Referring to Fig. 1, an apparatus constructed in accordance with the principles of the present invention is shown generally at 1. The apparatus is formed generally in the shape of a rectangular solid, and includes cover 2, left side wall 3, and front surface 4.

As may be seen in Fig. 2, the dispenser 1 also includes a rear wall 5 and a bottom surface 6.

Placed within the box can be a variety of unit dose items, such as tablets, pellets or the like (not shown). Typically, such unit dose packages are water-soluble and must be protected from moisture until the time of intended use. When protected from moisture, the shelf life of the unit dose packages may be typically on the order of months.

Within container 1 is a ramp 7 which is supported between a first region 8 of rear wall 5 and a relatively lower die cut second region 9 of front wall 4. Unit dose packages coming into contact with the ramp will therefore be urged in a direction towards the front wall 4 of container 1.

Immediately above region 9 of front wall 4 is an opening 10 within front wall 4, typically extending across the entire width of front wall 4 and being of sufficient height to permit access to the unit dose packages within container 1.

Pivotably mounted within box 1 is a drawer 13 including side wall 11 which pivots at its base along die cut region 9 of front wall 4, through an angular displacement defined by angle 12. Angle 12 must be chosen to be large enough so that access to the unit dose packages within container 1 is possible, yet need be no larger than is necessary to permit the retrieval of one or two of the unit dose packages at one time.

When drawer 13 is fully extended from container 1, the drawer 13 assumes an angle of between approximately 30° and 70° with relation to front wall 4. When drawer 13 is fully withdrawn or closed within container 1, drawer 13 is

5 substantially flush with front wall 4 of container 1. Side wall 11 is shown in its withdrawn position as 11' in Fig. 2.

Cover 14 pivots about score line 15 of front wall 4, permitting cover 14 to travel through an angular displacement at least equal to angle 16, the upward movement of cover 14

10 being restrained by the position of wall 4 and the downward movement of cover 14 being restrained by the position of drawer 13. When drawer 13 and its associated side wall 11 is withdrawn to position 11', cover 14 may travel through the additional angular displacement of angle 17, thereby

15 permitting cover 14 to be substantially flush with front wall 4. The drawer 13 may have perforations (not shown) in a bottom region in order to facilitate drainage.

In order to facilitate manipulation of cover 14, indentation 18 is formed along leading edge 19 of cover 14.

20 Similarly, as shown in Fig. 4, indentation 20 is formed within leading edge 21 of drawer 13 in order to facilitate inserting and withdrawing of trough 11 with relation to the interior of container 1.

The actual construction of container 1 may best be

25 envisioned by reference to Fig. 3. Side wall 22 is joined to front wall 4 along score line 23 while bottom flap 24 forms a portion of bottom member 6. Upper flap 25 is folded along score line 26 to reside beneath top 2.

Similarly, side flap 3 joins front wall 4 along score

30 line 27, while bottom flap 28 is folded along score line 29 to form part of bottom member 6. Upper flap 30 is folded along score line 31 to reside opposite upper flap 25 and beneath cover 2. Upper flaps 25 and 30 are held in place beneath cover 2 by means of flap 32 which is folded along

35 score line 33.

Lower flap 34 folds along score line 35 to form a portion of bottom member 6.

7 21 14 1 16

Finally, rear wall 5 is folded into place along score line 36, while lower flap 37 is folded along score line 38 to form the remainder of bottom portion 6. Side flap 39 is folded along score line 40 to be secured to side wall 22 by a suitable adhesive, staples or the like.

Typically, the container 1 is constructed of an "E-FLUTE," corrugated bleached board, but may be constructed of any material providing sufficient rigidity and resistance to moisture. In the case of some paperboard materials, the interior of the container 1 may be coated or lined with a plastic or other moisture barrier material (not shown), and a desiccant material (not shown) may be placed within the interior of container 1.

Referring to Fig. 4, the construction of the drawer 13 may be visualized. The drawer 13 is formed integrally with left side member 41, which thereafter becomes side wall 11 along score line 42 and is formed integrally with right side member 43 along score line 44. Ramp 7 is integrally formed with drawer 13 along score line 45. To the rear of ramp 7 is vertical support member 46 which joins ramp 7 along score line 47.

Left side panel 48 is formed integrally with ramp 7 along score line 49, with left side panel 48 being bent along split score line 50. Adjoining split score line 50 is support panel 51 which is bent along score line 52 to create vertical support flap 53, which is glued or otherwise fastened so as to overlay a portion of vertical support member 46.

Similarly, right side panel 54 adjoins ramp 7 along score line 55 and adjoins panel 56 along split score line 57. Panel 56 is integrally formed with vertical support flap 58 along score line 59, vertical support flap 58 being glued or otherwise fastened so as to overlie a portion of vertical support member 46. As with the rest of the container, the drawer structure 13 may be constructed of any suitably rigid material such as paperboard, cardboard, plastic, metal or the like. In the case of potentially water permeable materials, the drawer structure 13 may be coated with a suitable water

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impervious material, plastic liner or the like.

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WHAT IS CLAIMED IS:

1. A method of dispensing and storing moisture-sensitive packages from a filled container (1), comprising
5 the steps of and characterized in that:

(a) urging at least some of the packages toward a substantially covered exit aperture (10) which is formed within the container (1) by supporting said packages upon an inclined ramp (7), the entire ramp being spaced above
10 a bottom surface (6) of the container (1) and which has a lower portion proximate said aperture (10);

(b) pivoting a wall (13) which is formed integrally with the ramp (7), the wall (13) substantially completely obstructing the aperture (10) in a first position and
15 permitting access through the aperture (10) to the packages within the container (1) when the wall (13) is pivoted to a second position;

(c) lifting a cover (14) so as to permit access through the aperture (10) into the container (1), wherein
20 the cover (14) is formed integrally with a surface of the container (1) which contains the aperture (10), the cover (14) being capable of substantially obstructing the aperture (10); and

(d) releasing the cover (14) so as to substantially
25 cover the aperture (10) automatically subsequent to removal of one of said packages from the container (1) through the aperture (10).

2. The method claim 1, wherein a region (9) where the
30 wall (13) and the ramp (7) are joined is perforated, thereby permitting moisture reaching the region (9) to drain through the perforations and away from the packages.

3. The method of claim 1, wherein an edge of the cover
35 (14) includes a cover indentation (18), thereby facilitating lifting of the cover (14).

4. The method of claim 3, wherein a leading edge of the wall (13) includes a wall indentation (20), thereby facilitating insertion and withdrawal of the wall (13).

5

5. A dispenser and container (1) for moisture-sensitive packages, having front (4), rear (5) and side (3) container walls interconnected along parallel fold lines (27) and defining an open ended enclosure, there being a total of at least three container walls, the dispenser and container (1) having flap elements (2, 6) which form a closure for an upper end and a lower end of said open ended enclosure, thereby forming an enclosed rectangular volume, characterized in that:

15 (a) a drawer structure, the drawer structure being elevated above the lower end of the container, the drawer structure including an inclined ramp (7), the entire ramp (7) being spaced above a bottom surface (6) of the container (1), the ramp (7) being integral with and pivotable with respect to a front drawer wall (13) of the drawer structure;

20 (b) an aperture (10), the aperture (10) being formed within the front wall (4) of the container (1), the aperture (10) being located adjacent to the drawer structure and a lower portion of the ramp (7); and

25 (c) an aperture cover (14), the aperture cover (14) being defined by a transverse score line (15) in the front wall (4) of the container, such that the aperture cover (14) is foldable relative to the front wall (4) by folding the cover (14) along the transverse score line (15), the cover (14) being capable of substantially obstructing the aperture (10).

30
35 Wherein the front drawer wall (13) is positionable between first and second positions, wherein the first position substantially obstructs the aperture (10) and the second position permits access through the aperture (10) to the packages on the ramp (7).

6. The dispenser and container (1) of claim 5, further comprising a moisture impermeable liner, the moisture impermeable liner residing within an interior of the container.

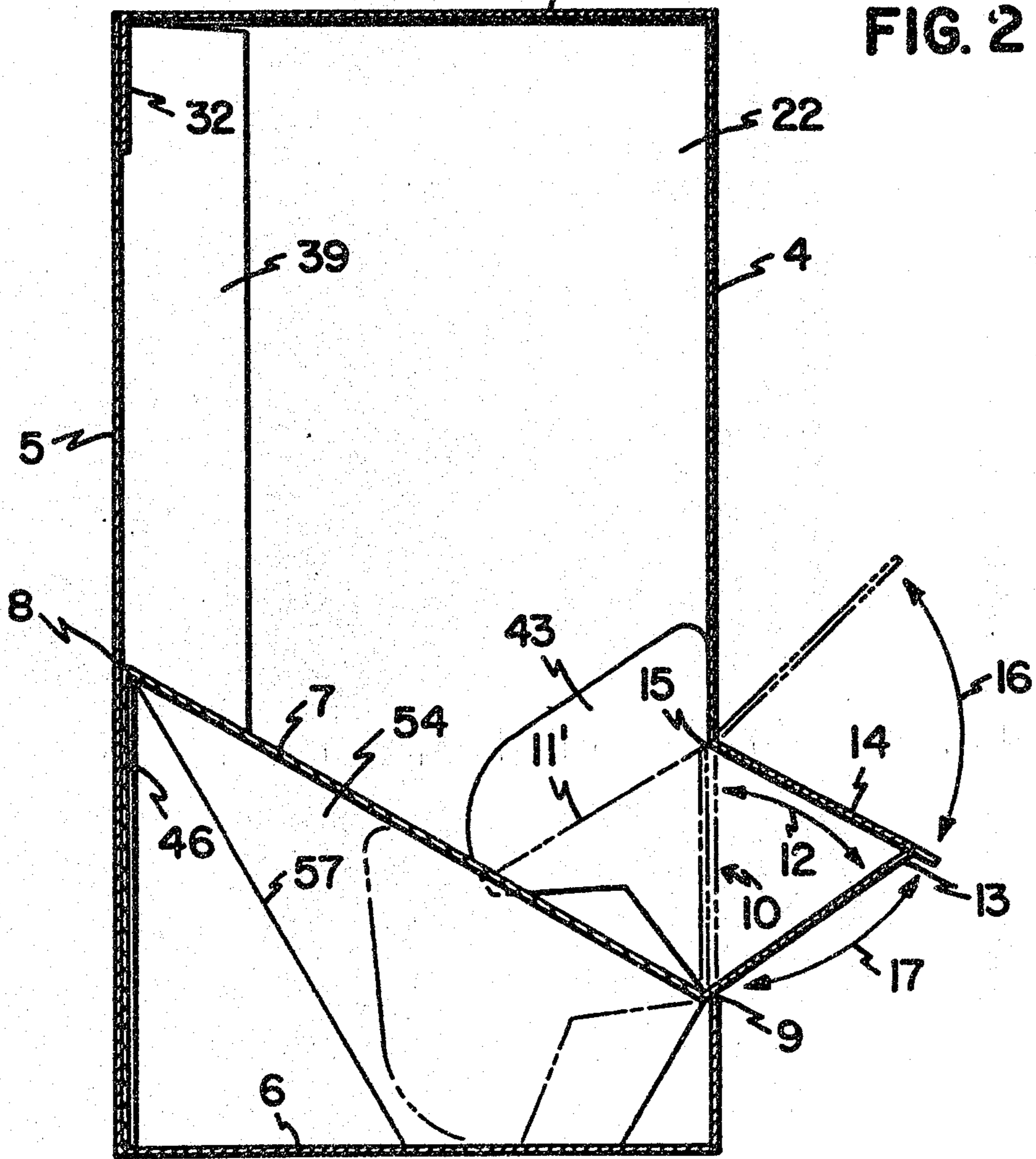
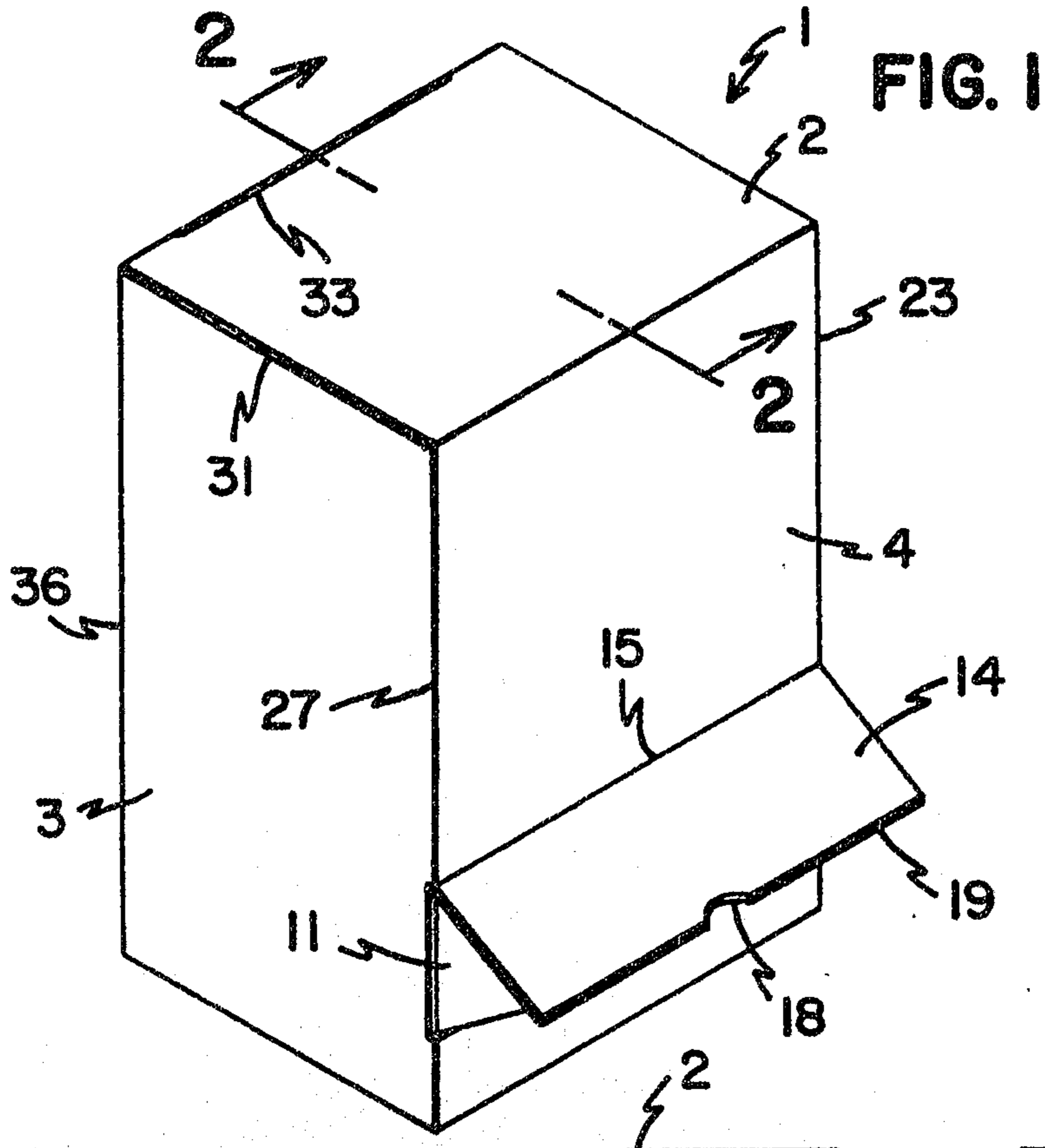
7. The dispenser and container (1) of claim 5, further comprising an indentation (18) formed within a leading edge of the aperture cover (14), the indentation (18) facilitating movement of the cover (14).

8. The dispenser and container (1) of claim 7, wherein an indentation (20) is formed in the front wall (13), thereby facilitating movement of the front drawer wall (13).

9. The dispenser and container (1) of claim 5, wherein the plurality of moisture-sensitive packages each contain a detergent which can be added to a solvent to form a cleaning solution.

10. The dispenser and container (1) of claim 5, wherein the dispenser and container (1) is made of a cardboard material.

11. The dispenser and container (1) of claim 5, wherein the front drawer wall (13) is substantially flush with said front container wall (4) when in the first position, and the front drawer wall (13) assumes an angle of approximately 30 degrees to 70 degrees with respect to the front container wall (4) when in the second position.



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FIG. 3

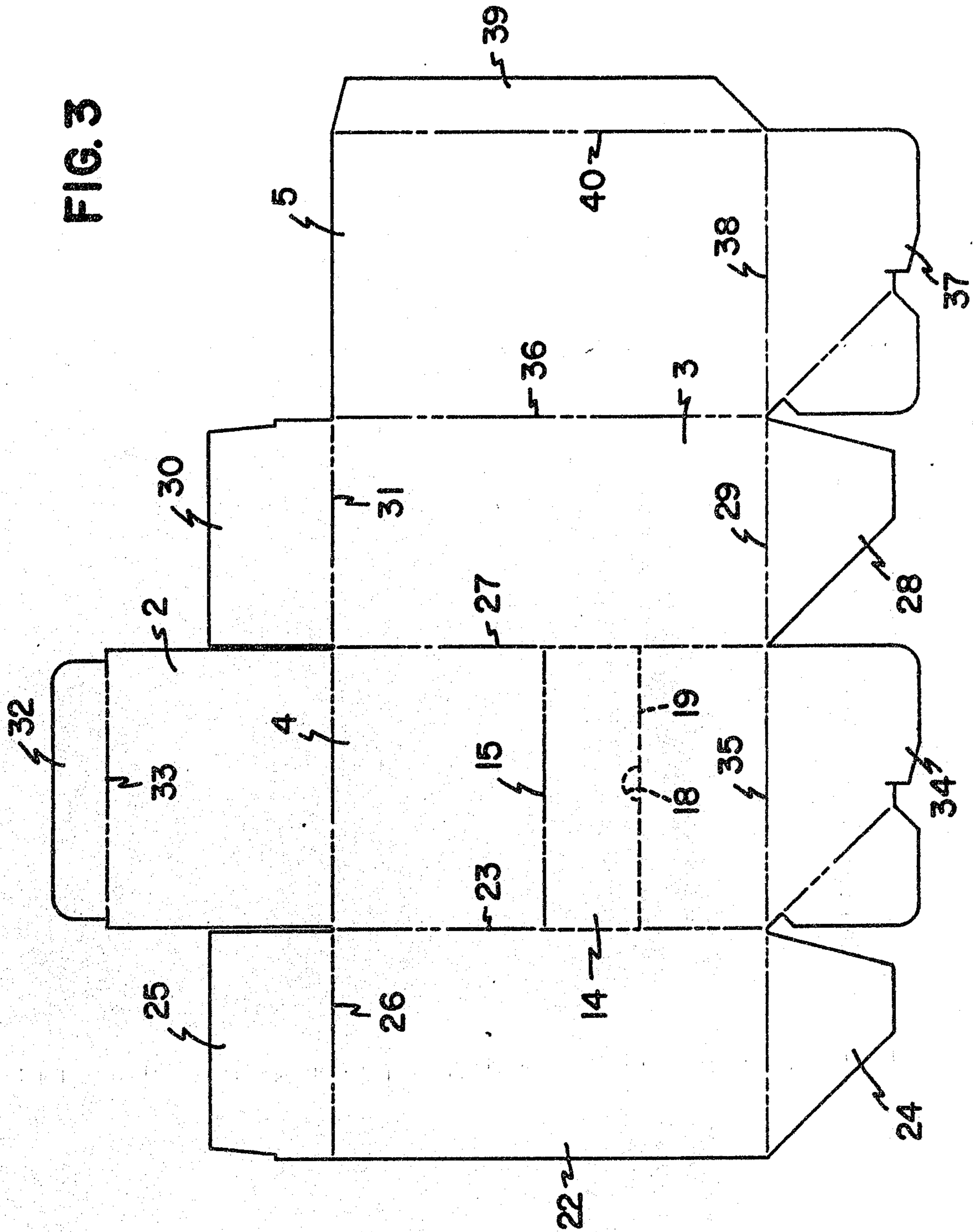


FIG. 4

