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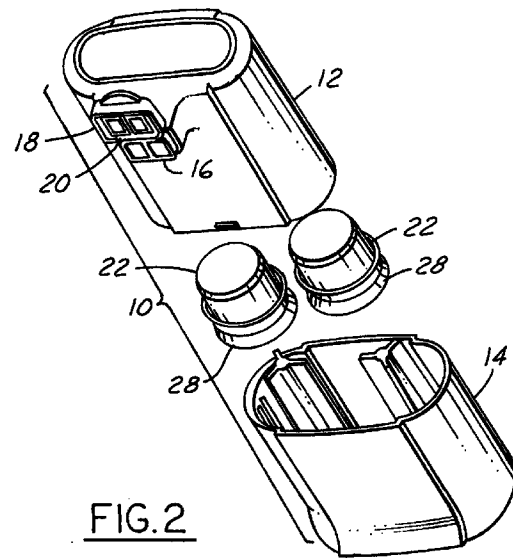
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(54) Multiple cavity dispensing package

(57) A multiple cavity dispensing package including a first upper hollow plastic body (12 or 12a) having an open lower end and a second lower hollow plastic body (14 or 14a) having an open upper end. Interengaging parts in the first plastic body and the second plastic body defining plural pumps. The first hollow plastic body is a one-piece molded plastic body and includes an integral spout (16 or 16a) having dual outlets (26 or 26a). An integral cap (18) is hinged to the spout and closes the outlet. Integral product chambers (24 or 24a) and integral passages in the first plastic body extend from the chambers to the outlets of the spout. The dispensing package is operable upon relative movement of the first plastic body toward the second plastic body to dispense the contents of the chambers through the spout.



EP 0 873 945 A1

Description

This invention relates to multiple cavity pump dispensing packages.

Background and Summary of the Invention

Multiple cavity dispensing packages of the pump type are shown in U.S. Patents Nos. 5,020,694, 5,289,949 and 5,332,124.

In U.S. Patent No. 5,289,949, there is disclosed a package comprising an upper housing on which a nozzle is snapped into position and a closure snapped onto the nozzle. The upper housing is slidably received in a lower housing which supports dual pistons such that when the upper housing is depressed dual streams of two materials are dispensed. Such a package is shown in the prior art. Such a package comprises a dispensing pump including an upper shroud with two integral cylinders, which slidably accommodate pistons fixed on a lower shroud. The cylinders contain the product which is to be dispensed. The upper shroud includes dual outlets extending laterally of the upper shroud with two passages connected to the two cylinders. A dual outlet assembly snaps into the upper shroud and has dual passages communicating with the dual outlets and extending laterally of the upper shroud. A nozzle snaps on the dual outlet assembly and engages the dual outlets. A cap is hinged to the nozzle. The cap is provided with a septum for maintaining the two products to be dispensed separate and are not intermixed when the cap is closed.

Among the objectives of the present, invention are to provide a multiple cavity dispensing package which is less complex, which uses a minimum number of parts, which is less costly to manufacture by using fewer molds, and which is easier to assemble.

In accordance with the invention, the multiple cavity dispensing package comprises a first hollow plastic body and a second hollow plastic body that interengage to define dual pump. The second plastic body is molded in one piece and includes an integral lateral nozzle with a cap integrally hinged thereto. The first plastic body includes integral pistons. The second plastic body includes integral cylinders, integral tubes extending through the integral nozzle. The cap includes dual sealing plugs which seals against the internal peripheral surfaces of the dual outlets of the nozzle.

Description of the Drawings

Fig. 1 is a perspective view of a multiple cavity dispensing package embodying the invention.

Fig. 2 is an exploded perspective view, showing the cap in open position.

Fig. 3 is a top plan view.

Fig. 4 is a part sectional view taken along the line 4-4 in fig. 3.

Fig. 5 is a sectional view taken along the line 5-5 in Fig. 4.

Fig. 6 is a sectional view taken along the line 6-6 in Fig. 3.

5 Fig. 7 is a fragmentary sectional view at the circle 7 in Fig. 4.

Fig. 8 is a top plan view of the lower plastic body in Figs. 1 and 2.

10 Fig. 9 is a fragmentary front elevational view on an enlarged scale with the cap in open position.

Fig. 10 is a sectional view taken along the line 10-10 in Fig. 9.

15 Fig. 11 is a part sectional elevational view similar to Fig. 4 showing a modified form of a multiple cavity dispensing packages.

Fig. 12 is an elevational view of a portion of the package shown in Fig. 11.

20 Fig. 13 is a sectional view taken along the line 13-13 in Fig. 12.

Fig. 14 is a sectional elevational of the second lower part of the package shown in Figs. 12 and 13.

Detailed Description of the Preferred Embodiment

25 Referring to Figs. 1-10, the multiple cavity dispensing package 10 comprises a first upper hollow plastic body 12 and a second lower hollow plastic body 14 that interengage to define a dual pump. The first plastic body 12 is molded in one piece and includes an integral lateral nozzle 16 having dual outlets with a cap 18 integrally hinged by hinge 20 to body 12. The second plastic body 14 includes pistons 22. The first plastic body 12 includes integral cylinders 24 that define product chambers and integral outlets 26 extending through the integral nozzle 16. As in the aforementioned patents 30 5,020,694, 5,289,949 and 5,332,124, incorporated by reference, when product is placed in the cylinders and the first part 12 is depressed, the product is dispensed.

35 Further, in accordance with the invention, the cap includes integral plug seals which engage the complementary inner surfaces of the outlets 26 in integral nozzle 16.

40 In a modified form shown in Figs. 11-14, the seals are made integral with the pistons 22a which are, in turn, fixed on the lower body 14a. Corresponding parts are designated with a suffix "a".

45 In each of the forms, the product to be dispensed is introduced into the cylinders 24, 24a and the body 12 and 14 are assembled. In order to dispense the products, the cap 18, 18a is opened and the body 12, 12a is depressed to dispense the two products through the passages 26, 26a in nozzle 16, 16a.

50 It can thus be seen that there has been provided a multiple cavity dispensing package which is less complex, which uses a minimum number of parts, which is less costly to manufacture by using fewer molds and which is easier to assemble.

Claims

1. A multiple cavity dispensing package comprising
- a first upper hollow plastic body (12 or 12a) 5
having an open lower end,
- a second lower hollow plastic body (14 or 14a)
having an open upper end, 10
- interengaging means (22, 24 or 22a, 24a) in
said first plastic body and said second plastic
body defining plural pumps, 15
- said first hollow plastic body (12 or 12a) com-
prising a one-piece molded plastic body. 20
- said first plastic body including an integral
spout (16 or 16a) having dual outlets (26 or
26a), an integral cap (18) hinged to said spout
and closing said outlets, 25
- said interengaging means including integral
product chambers (24 or 24a) and integral pas-
sages in said first plastic body extending from
said chambers to said outlets of said spout, 30
- said dispensing package being operable upon
relative movement of said first plastic body
toward said second plastic body to dispense
the contents of said chambers through said
spout. 35
2. The multiple cavity dispensing package set forth in
claim 1 wherein said integral spout (16 or 16a) 40
extends laterally from said first plastic body (12).
3. The multiple cavity dispensing package set forth in
claim 2 wherein said interengaging means com-
prises piston (22 or 22a) means in said second
plastic body associated with said chambers (24 or
24a) in said first plastic body. 45
4. The multiple cavity dispensing package set forth in
claim 3 wherein said piston means (22 or 22a) com-
prises separate pistons, said chambers including
integral cylinders (24 or 24a) in which said pistons
are located. 50
5. The multiple cavity dispensing package set forth in
claim 3 wherein said piston means (22 or 22a) are
integral with said second plastic body (14 or 14a). 55
6. The multiple cavity dispensing package set forth in
claim 5 wherein said hinge cap (18 or 18a) com-
prises a snap hinge (20 or 20a).
7. The multiple cavity dispensing package set forth in
- any one of claims 1-6 wherein said cover (18 or
18a) comprises integral separate sealing plugs (36
or 36a) having a configuration complementary to
the dual outlets (26 or 26a).
8. A method of making a multiple cavity dispensing
package comprising
- forming a first hollow plastic body (12 or 12a)
having an open lower end comprising a one-
piece molded plastic body ,
- forming a second hollow plastic body (14 or
14a) having an open upper end,
- forming integral interengaging means (22, 24
or 22a, 24a) in said first plastic body and said
second plastic body defining plural pumps,
- forming an integral spout (16 or 16a) on said
first plastic body having an outlet (26 or 26a),
an integral cover (18 or 18a) hinged to said
spout and closing said outlet,
- forming integral product chambers (24, 24a)
and integral passages in said first plastic body
extending from said chambers to the outlet of
said spout,
- such that said dispensing package is operable
upon relative movement of said first plastic
body toward said second plastic body to dis-
pense the contents of said chambers through
said spout.
9. The method set forth in claim 8 wherein said step of
forming said spout (16) is such that said integral
spout extends laterally from said first plastic body.
10. The method set forth in claim 9 wherein said step of
forming interengaging means comprises forming
piston means (22 or 22a) in said second plastic
body associated with said chambers (24 or 24a) in
said first plastic body.
11. The method set forth in claim 10 wherein said step
of forming said piston means (22 or 22a) comprises
forming separate pistons, said step of forming said
first plastic body (12) including integral cylinders
(24 or 24a) in which said pistons are located.
12. The method set forth in claim 10 wherein said step
of forming said piston means (22 or 22a) comprises
forming pistons integral with said second body (14
or 14a).
13. The method set forth in claim 8 wherein said step of
forming said hinged cover comprises forming a

snap hinge (20 or 20a) on said cover (18 or 18a).

- 14. The method set forth in any one of claims 8-13 wherein said step of forming said cover (18 or 18a) comprises forming integral separate sealing lugs (36 or 36a) having a configuration complementary to the passages through said outlet on said plugs.

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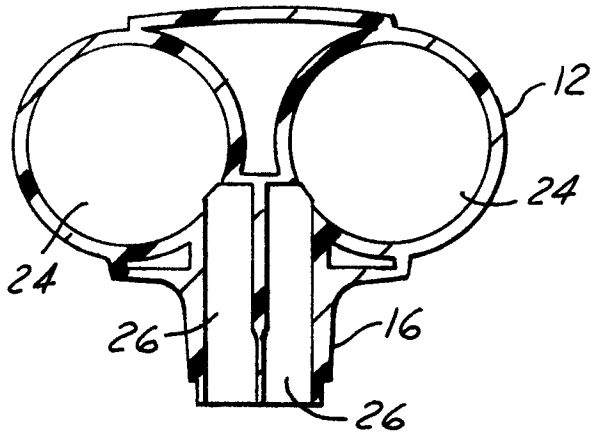


FIG. 5

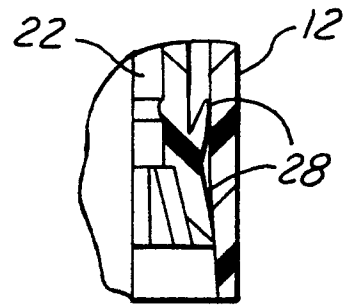


FIG. 7

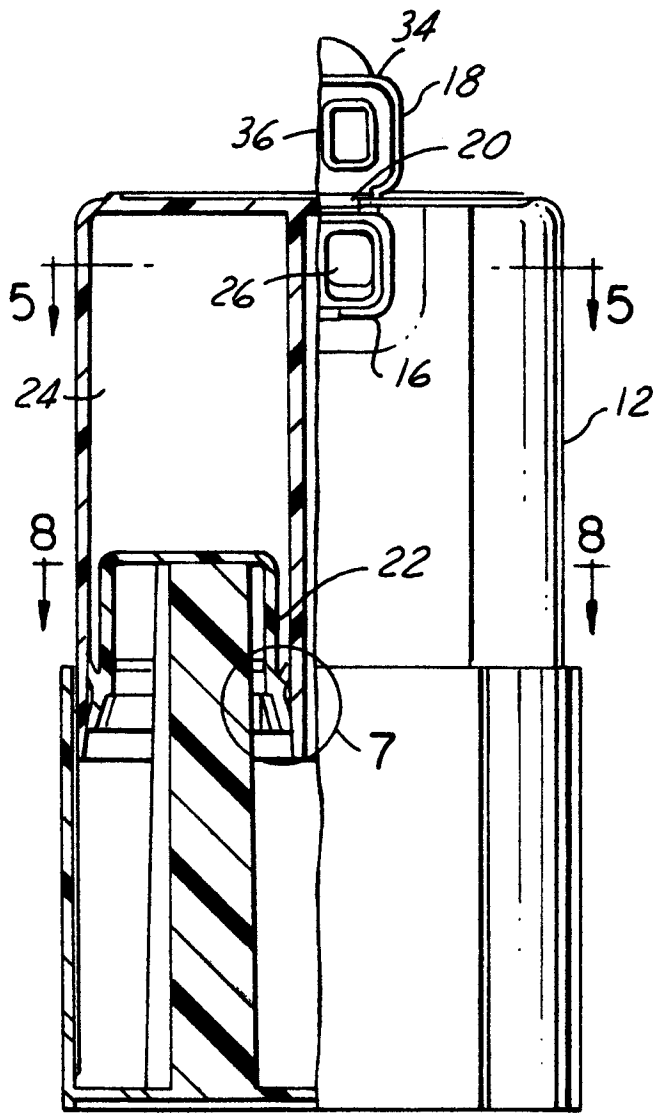


FIG. 4

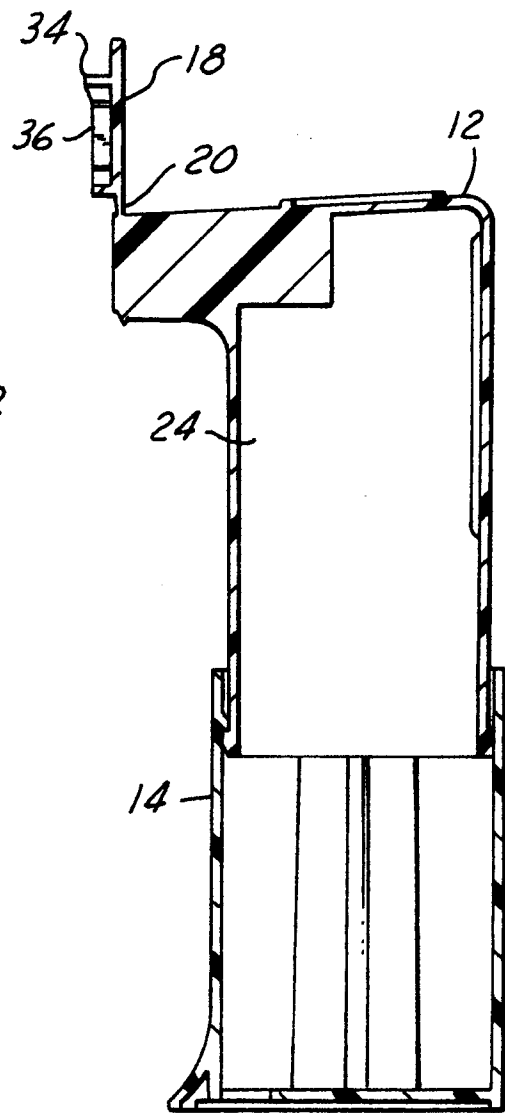


FIG. 6

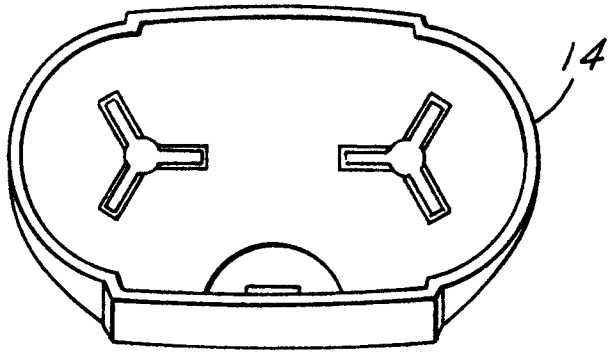


FIG. 8

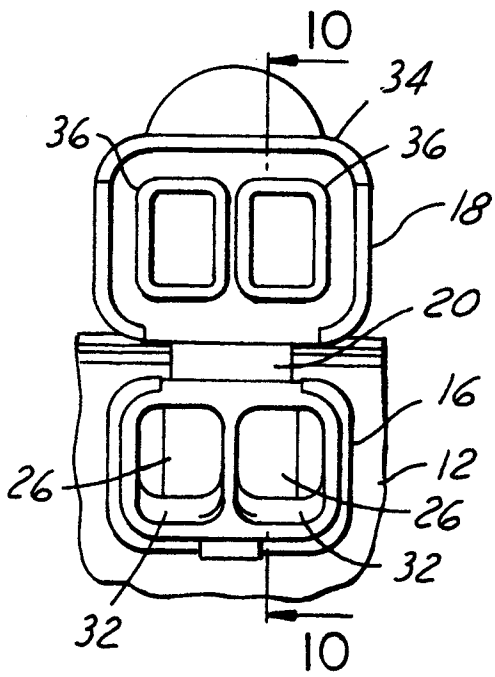


FIG. 9

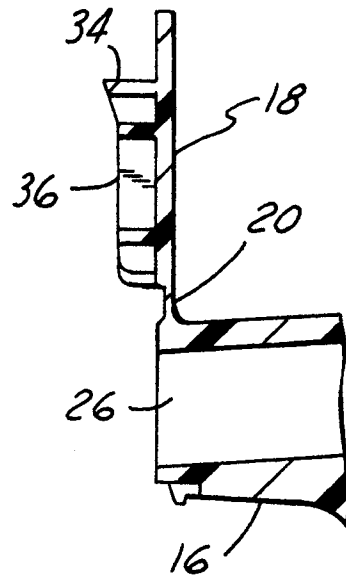


FIG. 10

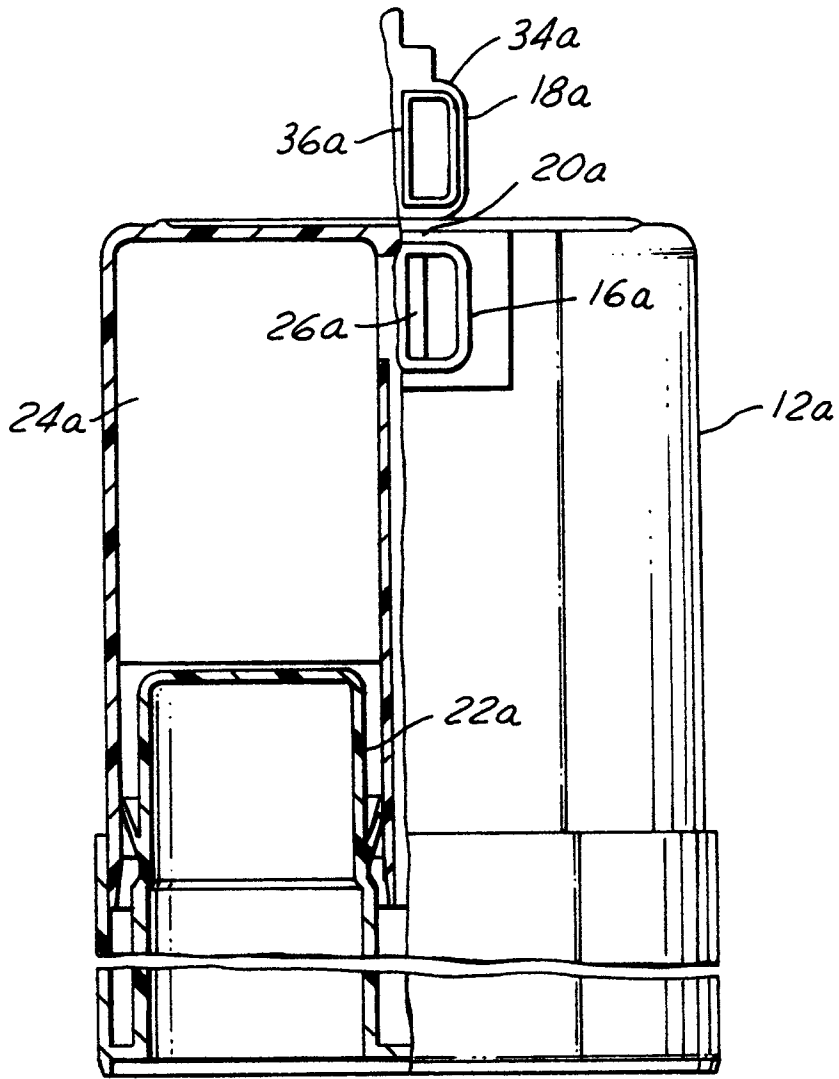


FIG. 11

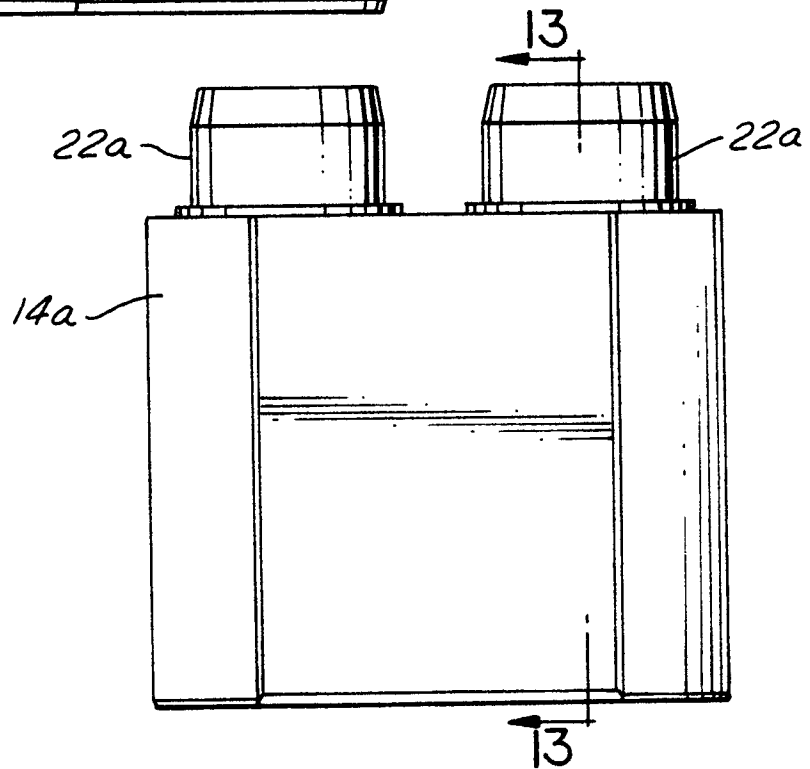


FIG. 12

FIG.13

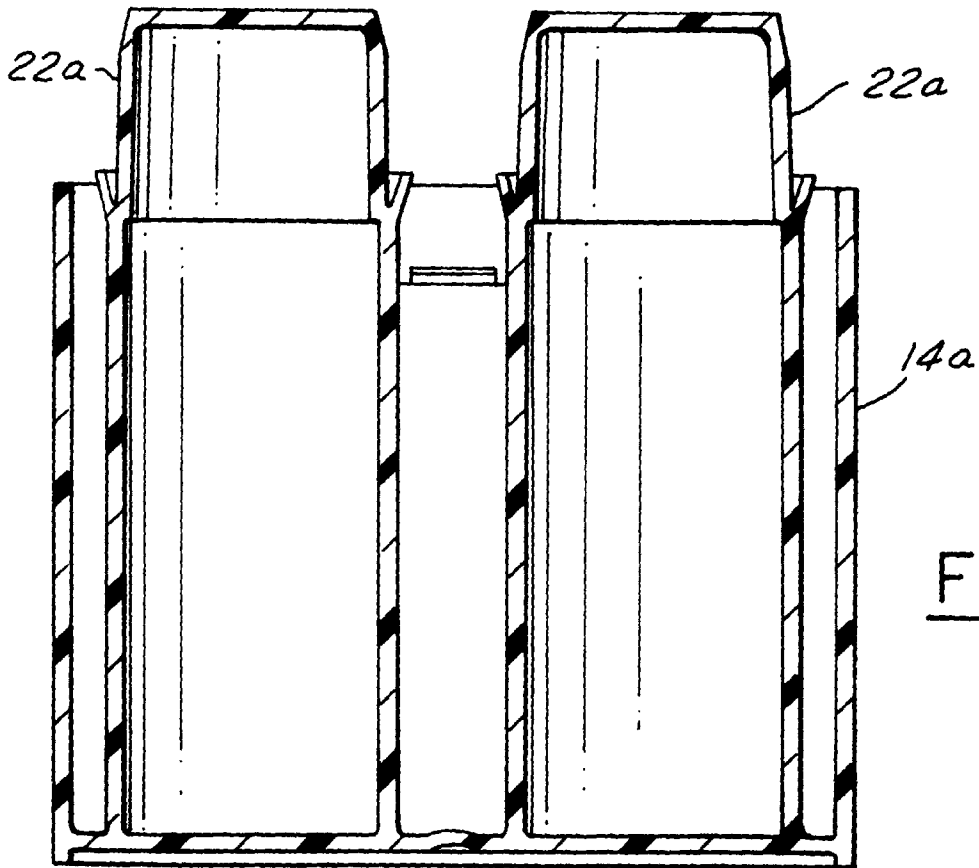
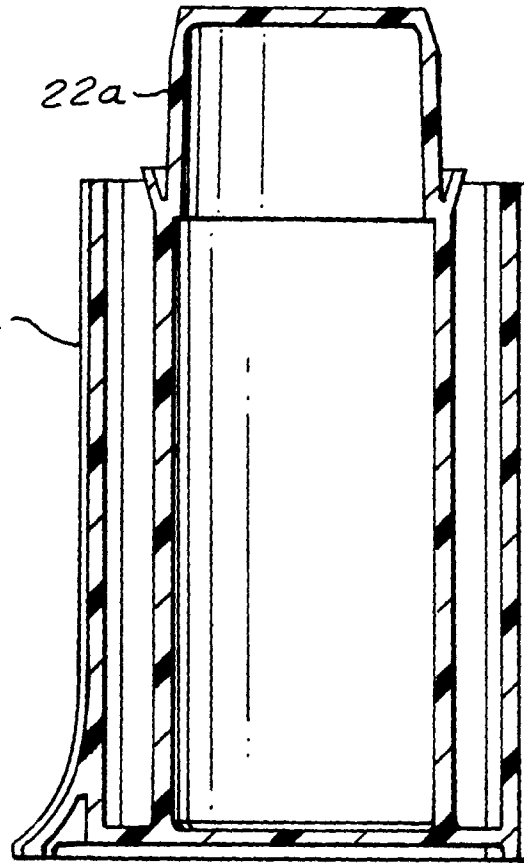


FIG.14

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EUROPEAN SEARCH REPORT

Application Number
EP 98 30 3154

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
P,X	US 5 645 193 A (GENTILE JAMES ET AL) 8 July 1997	1-4, 7-11,13, 14	B65D81/32
P,Y	* column 1, line 8 - line 17 * * column 2, line 16 - line 39 * * column 3, line 17 - line 28 * * column 3, line 50 - column 4, line 49 * * figure ALL *	5,6,12	
Y	EP 0 605 890 A (PACKAGE RESEARCH INC) 13 July 1994 * column 1, line 31 - line 55 * * figures 2,18 *	5,6,12	
A	EP 0 747 299 A (COLGATE PALMOLIVE CO) 11 December 1996 * column 1, line 5 - line 10 * * column 2, line 39 - column 3, line 36 * * column 4, line 10 - column 6, line 10 * * figures 1,2,4,12,16 *	1,8	
A	DE 35 14 134 A (WELLA AG) 23 October 1986 * page 6, line 17 - line 24 * * page 8, line 1 - page 9, line 5 * * figures 5,6 *	1,7,8,14	TECHNICAL FIELDS SEARCHED (Int.Cl.6) B65D B01F
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 26 August 1998	Examiner Papatheofrastou, M
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

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