

17073 - USA

MULTIPLE CAVITY DISPENSING PACKAGE

This invention relates to multiple cavity pump dispensing packages.

Background and Summary of the Invention

5 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.

10 15 20 25 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

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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
5 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.
10 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
15 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
5 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
10 Fig. 4.

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

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
15 Figs. 1 and 2.

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
20 in Fig. 9.

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
25 package shown in Fig. 11.

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

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 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.

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.

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".

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.



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.

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Claims:

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1.

1 A multiple cavity dispensing package comprising
2 a first upper hollow plastic body (12 or 12a) having an open lower end,
3 a second lower hollow plastic body (14 or 14a) having an open upper end,
4 interengaging means (22, 24 or 22a, 24a) in said first plastic body and said
5 second plastic body defining plural pumps,
6 said first hollow plastic body (12 or 12a) comprising a one-piece molded
7 plastic body,
8 said first plastic body including an integral spout (16 or 16a) having dual
9 outlets (26 or 26a), an integral cap (18) hinged to said spout and closing said outlets,
10 said interengaging means including integral product chambers (24 or 24a)
11 and integral passages in said first plastic body extending from said chambers to said
12 outlets of said spout,
13 said dispensing package being operable upon relative movement of said first
14 plastic body toward said second plastic body to dispense the contents of said chambers
15 through said spout.

2.

1 The multiple cavity dispensing package set forth in claim 1 wherein said
2 integral spout (16 or 16a) extends laterally from said first plastic body (12).



3.

1 The multiple cavity dispensing package set forth in claim 2 wherein said
2 interengaging means comprises piston (22 or 22a) means in said second plastic body
3 associated with said chambers (24 or 24a) in said first plastic body.

4.

1 The multiple cavity dispensing package set forth in claim 3 wherein said
2 piston means (22 or 22a) comprises separate pistons, said chambers including integral
3 cylinders (24 or 24a) in which said pistons are located.

5.

1 The multiple cavity dispensing package set forth in claim 3 wherein said
2 piston means (22 or 22a) are integral with said second plastic body (14 or 14a).

6.

1 The multiple cavity dispensing package set forth in claim 5 wherein said
2 hinge cap (18 or 18a) comprises a snap hinge (20 or 20a).

7.

1 The multiple cavity dispensing package set forth in any one of claims 1-6
2 wherein said cover (18 or 18a) comprises integral separate sealing plugs (36 or 36a)
3 having a configuration complementary to the dual outlets (26 or 26a).

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8.

1 A method of making a multiple cavity dispensing package comprising
2 forming a first hollow plastic body (12 or 12a) having an open lower end
3 comprising a one-piece molded plastic body,
4 forming a second hollow plastic body (14 or 14a) having an open upper
5 end,
6 forming integral interengaging means (22, 24 or 22a, 24a) in said first
7 plastic body and said second plastic body defining plural pumps,
8 forming an integral spout (16 or 16a) on said first plastic body having an
9 outlet (26 or 26a), an integral cover (18 or 18a) hinged to said spout and closing said
10 outlet,
11 forming integral product chambers (24, 24a) and integral passages in said
12 first plastic body extending from said chambers to the outlet of said spout,
13 such that said dispensing package is operable upon relative movement of
14 said first plastic body toward said second plastic body to dispense the contents of said
15 chambers through said spout.

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1 The method set forth in claim 8 wherein said step of forming said spout (16)
2 is such that said integral spout extends laterally from said first plastic body.

10.

1 The method set forth in claim 9 wherein said step of forming interengaging
2 means comprises forming piston means (22 or 22a) in said second plastic body associated
3 with said chambers (24 or 24a) in said first plastic body.

11.

1 The method set forth in claim 10 wherein said step of forming said piston
2 means (22 or 22a) comprises forming separate pistons, said step of forming said first
3 plastic body (12) including integral cylinders (24 or 24a) in which said pistons are
4 located.

12.

1 The method set forth in claim 10 wherein said step of forming said piston
2 means (22 or 22a) comprises forming pistons integral with said second body (14 or 14a).

13.

1 The method set forth in claim 8 wherein said step of forming said hinged
2 cover comprises forming a snap hinge (20 or 20a) on said cover (18 or 18a).

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14.

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

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