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(54) Liquid detergent dosing and dispensing device for washing machines.

(57) The device (11) comprises a cylindrical hollow body (111) with rounded edges or corners, closed at one end by a bottom wall (114) and provided at its other end with a recessed cylindrical mouth piece (113) closed at the bottom by a bottom wall (114) formed with through holes or perforations (115).

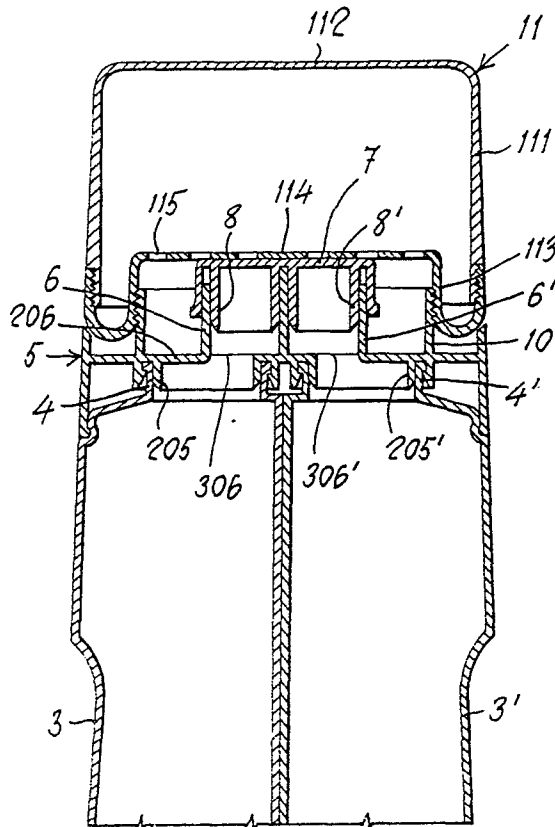


Fig. 2

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Liquid detergent dosing and dispensing device for washing machines

This invention relates to a device for dosing and dispensing liquid detergent for washing machines. More particularly, the invention relates to a device for dosing an amount of liquid detergent delivered from a suitable containing vessel or container, and for example the bottle-like container disclosed in the Italian Utility Model application No. 15143B/86 filed March 26, 1986 in the name of the same Applicant, said device being adapted to be introduced successively, together with the dose of detergent therein, into the washing machine, into close contact with the linen to be washed, for successively dispensing and distributing said detergent during the washing cycle.

According to a characteristic feature of the invention, this device comprises a cylindrical hollow body with rounded edges closed at one end by a bottom wall and provided at its other end with a recessed cylindrical mouth piece closed at the bottom by a bottom wall formed with through holes or perforations.

Advantageously, when not in use in the washing machine, this device may be fitted over the closure cap of a dispensing container containing the detergent to be dosed.

Further objects and advantages of the device according to this invention will be best understood in the course of the following description of a practical embodiment thereof, made with reference to the accompanying drawings, wherein:

Figure 1 is a side view of a detergent-containing container fitted with the dosing and dispensing device according to a preferred embodiment of this invention; and

Figure 2 is an enlarged sectional of the detergent dosing and dispensing device according to the preferred embodiment of the invention, fitted on the neck portion of the container shown in Figure 1.

With reference to the drawings, 1 is a container-like container for a liquid detergent. The container shown has a substantially can-like shape and has incorporated a handle 2. Of course, it might have any other suitable shape. Advantageously, though not necessarily, said container is made of plastics material.

In the illustrated embodiment, the container 1 comprises two hollow bodies, shown by numerals 3 and 3' in Figure 2, symmetrical to each other in a mirror-image manner and adapted to be united.

Each hollow body 3,3' is formed at the top thereof with a cylindrical neck 4,4'. 5 is a coupling member comprising a cylindrical skirt embracing both necks 4,4', and closed at the top thereof by a wall 206. Said wall 206 comprises, in registry with

the mouths of said necks 4 and 4', two openings 306 and 306', and the face of the wall 206 directed towards the mouths of said necks 4,4' is provided, around the periphery of said openings 306,306', with respective annular rims 205,205' which may be sealingly inserted into the respective mouths of the necks 4,4'. Two pouring spouts 6,6' stem upwards from the opposite face of said wall 206 at the periphery of said openings 306 and 306', respectively.

A cover member or cap 7 comprises two cylindrical plug members 8,8' depending from its bottom wall and adapted to penetrate said spouts 6,6' in the closed condition of said cap 7.

By numeral 10 a cylindrical collar is denoted extending upwards from said wall 206 and on the said collar 10 the detergent dosing and dispensing device 11 according to the invention is fitted, by either a screw or a forced fitting.

The device 11 comprises, as shown, a hollow cylindrical body 111 which is closed at one end thereof by a wall 112 and is provided at the other end thereof with a recessed mouth piece comprising an annular member 113 having a U-shaped cross section, the outer edge of which merges with the free edge of the cylindrical body 111, while the inner edge of which merges with a bottom wall 114 provided with holes or perforations 115 freely communicating with the internal room of the hollow body 111.

The outer surface of the inner ring of said member 113 is provided with means for connection to the cylindrical collar 10 in an easily removable manner, such as by press-insertion means or, as shown, by screw means.

The edges of the device 11 are carefully rounded, as clearly shown in the Figures.

The operation of the described dosing and dispensing device will be apparent.

In use, the device 11 will be disconnected from the collar 10 of the container 1 and, after opening said container 1, the required dose of detergent is poured from the container 1 into the interior of the body 111 through the perforated bottom wall 114, using the large recessed mouth piece 113 as a funnel during the pouring operation. Advantageously, the device 11 may be made of transparent and/or translucent plastics, and suitable level markings (not shown) may be provided on its wall. Thereafter, said device with the dose of detergent therein is introduced into the washing chamber of a washing machine, together with the linen to be washed.

On completion of the washing cycle in the washing machine, said device is recovered and may be re-used.

Of course, though the device 11 has been illustrated as associated with a container comprising twin coupled bodies, it may obviously be associated with a container comprising a single body containing the liquid detergent.

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Claims

1. A liquid detergent dosing and dispensing device (11) for washing machines, characterized by the fact that it comprises a cylindrical hollow body (111) with rounded edges closed at one end by a bottom wall (112) and provided at its other end with a recessed cylindrical mouth piece (113) closed at the bottom by a bottom wall (114) formed with through holes or perforations (115).

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2. A device according to claim 1, characterized in that said recessed cylindrical mouth piece comprises an annular member (113) having a U-shaped cross section, the outer edge of which are connected to the free edge of said cylindrical body (111), while the inner edge of which merges the perforated bottom wall (114).

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3. A device according to claims 1 or 2, characterized by the fact that said dosing and dispensing device (11) is provided at its mouth piece with means for connecting it in an easily disconnectible manner, to the neck or to a portion associated with the neck of a container for a liquid detergent.

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4. A device according to any one of claims 1 to 3, characterized by the fact that at least the hollow body (111) of said device (11) is made of transparent or translucent plastics material, and is provided with level markings.

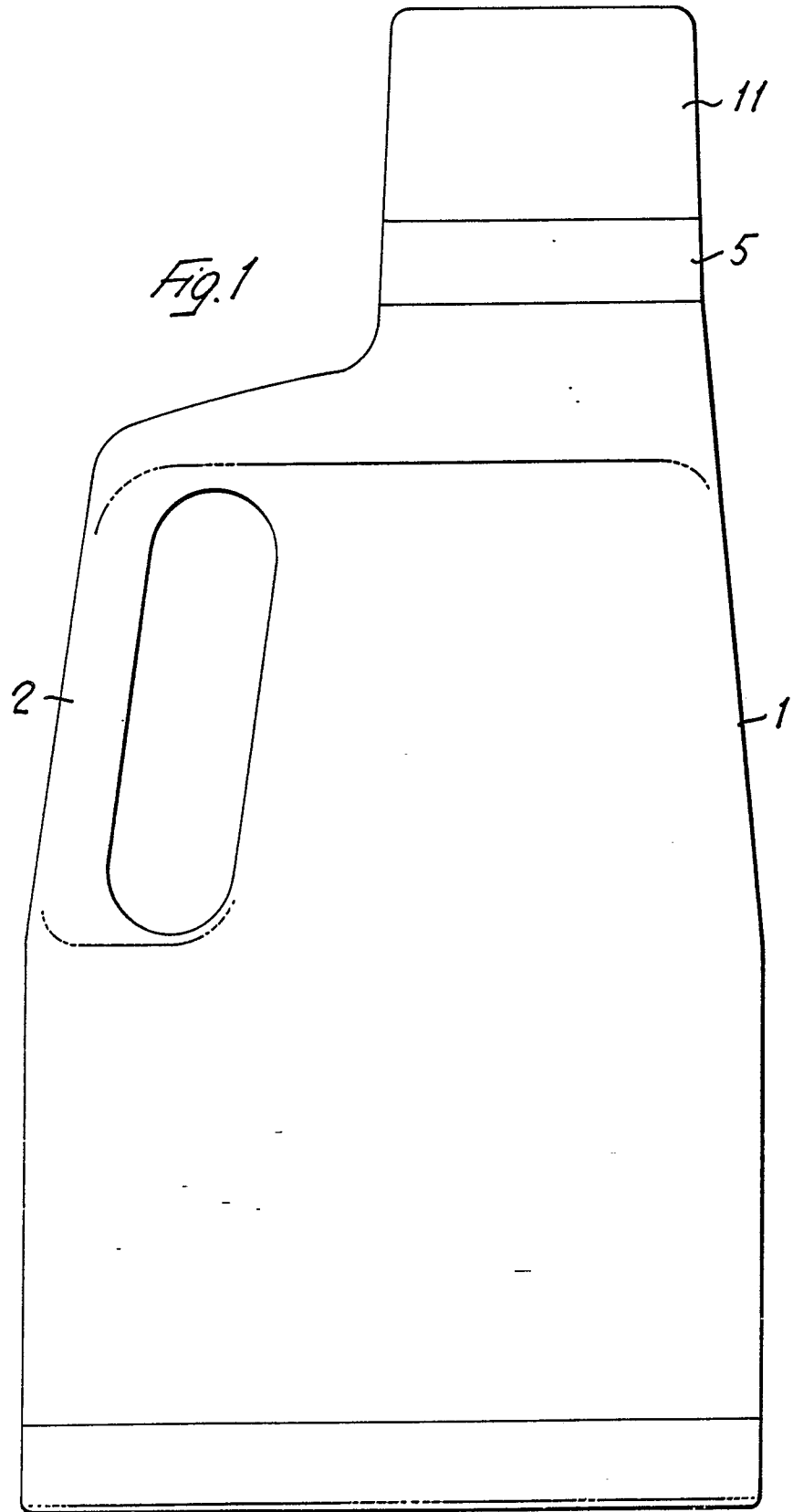
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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.4)
X	EP-A-0 109 704 (THE PROCTER & GAMBLE CO.) * Figures 1-4,6; claim 10 *	1,3	D 06 F 39/02 B 65 D 41/26
A		2,4	
X,P	EP-A-0 201 376 (PROCTER & GAMBLE FRANCE) * Figures 10-13 *	1	
A		2-4	
X,P	FR-A-2 592 001 (PROCTER & GAMBLE FRANCE) * Figures 1-4; claims *	1	
A		2-4	
A	US-H- 993 001 (THE PROCTER & GAMBLE CO.) * Figures *	1	
A	US-A-3 095 722 (FOX) * Figures 5-7 *	1	
A	EP-A-0 152 359 (THE PROCTER & GAMBLE CO.) * Figure 8; abstract *	1,4	
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 16-09-1987	Examiner COURRIER, G. L. A.
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	