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EUROPEAN PATENT APPLICATION

⑰ Application number: **89305782.8**

⑸ Int. Cl.⁴: **D 06 F 39/02**
B 65 D 41/26

⑱ Date of filing: **08.06.89**

⑳ Priority: **09.06.88 GB 8813685**

㉔ Date of publication of application:
13.12.89 Bulletin 89/50

㉕ Designated Contracting States:
AT BE CH DE ES FR GB GR IT LI NL SE

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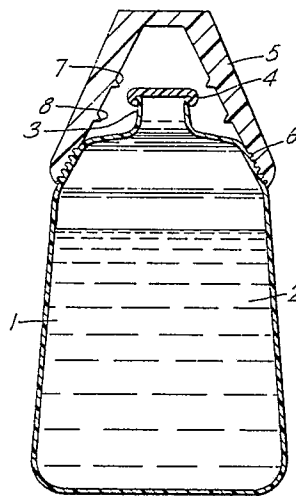
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⑤④ **Washing process.**

⑤⑦ A process of washing fabrics in a washing machine comprises introducing a quantity of a liquid detergent (2) into an open topped vessel (5) through the open top, placing the vessel (5) containing said liquid detergent and fabrics to be washed in said washing machine, carrying out a washing process in the presence of the said vessel without either wholly or partly closing the open top or securing the vessel to any part of the washing machine, and removing said vessel from the washing machine after the washing process.



Description

Washing Process

This invention relates to a washing process.

It is known to wash fabrics in washing machines introducing perforated containers containing materials such as detergents, bleaches and conditioners into the washing machine. The introduction in this way of bleach or other powders is disclosed in US patent 3,400,808, of aqueous solutions of surface active synthetic anionic non ionic or cationic fabric conditioning agents is disclosed in US patent 4,014,105 and of detergent formulations is disclosed in UK patent specifications 2,157,718 and 2,157,717.

Whereas there is a benefit in the slow release of bleaches in order to avoid undue concentrations it is a disadvantage with detergents in that the early part of the washing process may be carried out with insufficient detergent available. The problem is more serious with comparatively viscous liquid detergents, whereas liquid detergents of low viscosity may leak through the holes in a container quite quickly. Viscous liquid detergents may however be difficult to introduce into washing machines by certain conventional washing machine mechanisms, and a simple method of introduction which avoids slow release and renders unnecessary the use of complex plastics containers is desirable.

This invention comprises a process of washing fabrics in a washing machine, which may be for example a top loading washing machine but is suitably a front loading washing machine, preferably an automatic washing machine, which comprises introducing a quantity of a liquid detergent into an open topped vessel through the open top, placing the vessel containing said liquid detergent and fabrics to be washed in said washing machine, carrying out a washing process in the presence of the said vessel without either wholly or partly closing the open top or securing the vessel to any part of the washing machine, and removing said vessel from the washing machine after the washing process.

The open topped vessel is suitably a bowl or cup, for example a cap of a bottle of the detergent. It should be made of a material for example a plastics material, which will not break in the washing process.

By leaving the vessel with the fabric during the washing process the detergent is dissolved substantially completely in the wash water.

The vessel may be of any convenient shape. It preferably has no projections which would catch fabrics and suitably has a flattened or upwardly dished base on which it can stand during introduction of the liquid detergent. Suitably the open upper aperture of the vessel is 20% to 40% and more preferably 25 to 35% of the area of the remaining external surface area of the vessel. It is suitably calibrated to show suitable quantities of detergent for use.

The process is particularly suitable for liquid detergents of more than 300 preferably more than 1000 and more preferably more than 1500 centipoise and suitably at most 20,000 and preferably at most

10,000 centipoise, for example 2,000 to 8,000 centipoise as measured at a low rate of shear for example using a Brookfield RVTD viscometer using a No 4 spindle at 10 revolutions per minute at 20 to 25°C.

One form of the invention will now be described with reference to the accompanying drawing which shows a bottle 1 in cross section which holds a liquid detergent 2 and which is formed with a nozzle 3 closed with a hinged flap 4. A vessel 5 serves as an outer protective cap to the bottle to which it is screwed by screw threads 6. Vessel 5 is calibrated by marks 7 and 8 to show appropriate measures of liquid detergent.

In use, the vessel 5 is unscrewed and preferably placed on its base, the flap 4 lifted and the vessel 5 filled to the desired mark. Flap 4 is then closed and vessel 5 placed in a front loading washing machine with the fabrics to be washed and the washing process carried out.

After the washing process vessel 5 can be recovered and replaced on the bottle.

Claims

1. A process of washing fabrics in a washing machine which comprises introducing a quantity of a liquid detergent into an open topped vessel through the open top, placing the vessel containing said liquid detergent and fabrics to be washed in said washing machine, carrying out a washing process in the presence of the said vessel without either wholly or partly closing the open top or securing the vessel to any part of the washing machine, and removing said vessel from the washing machine after the washing process.

2. A process as claimed in claim 1 in which the vessel is formed with a base on which it can stand during introduction of the liquid detergent.

3. A process as claimed in claim 1 or 2 in which the open upper aperture of the vessel is 20 to 40% of the area of the remaining external surface area of the vessel.

4. A process as claimed in any preceding claim in which the vessel is calibrated to show a suitable quantity of detergent for use and is filled to said calibration.

5. A process as claimed in any preceding claim in which the liquid detergent has a viscosity of 1500 to 10,000 centipoise as measured at a low rate of shear at 25°C.

6. A process as claimed in any preceding claim in which the vessel is a cup without external projections which is made of a breakage-resistant material.

7. A package of liquid detergent for laundry use which comprises a bottle containing a liquid detergent of viscosity of 1,500 to 10,000

centipoise as measured at low shear at 25°C, means to close the bottle and in addition to the said means a vessel which has no external projections, is made of a breakaged resistant material and is calibrated to indicate suitable quantities of detergent for use in a washing machine, detachably secured to the bottle and constituting whilst secured to the bottle a secondary means to close the bottle.

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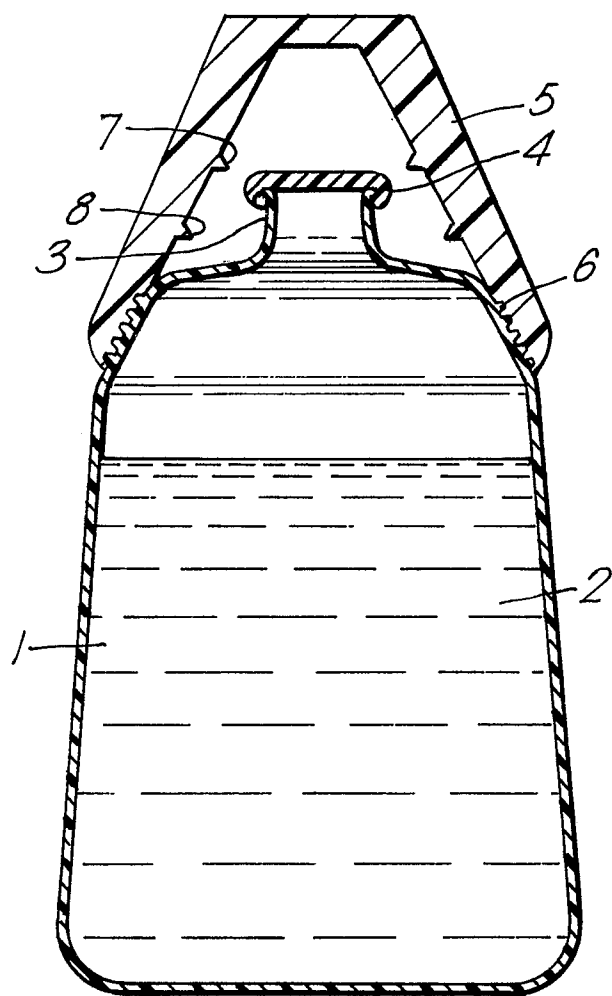
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EP 89 30 5782

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 A	EP-A-216415 (THE PROCTER & GAMBLE COMPANY) * the whole document * ---	1, 2, 4, 6, 7 3, 5	D06F39/02 B65D41/26
X A	EP-A-248341 (MIRA LANZA S.P.A.) * the whole document * ---	1, 2, 4, 6, 7 3, 5	
X A	EP-A-269543 (HENKEL IBERICA S.A.) * the whole document * ---	1, 2, 4, 6 3, 5	
A	US-A-4588080 (MARTIN E. GINN) * abstract; figures - * -----	1, 3, 6	
			TECHNICAL FIELDS SEARCHED (Int. Cl.4)
			D06F
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 15 SEPTEMBER 1989	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			