

(19)



Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) Publication number:

0 395 152
A2

(12)

EUROPEAN PATENT APPLICATION

(21) Application number: **90200995.0**(51) Int. Cl.⁵: **D06F 39/02**(22) Date of filing: **20.04.90**(30) Priority: **28.04.89 GB 8909778**(43) Date of publication of application:
31.10.90 Bulletin 90/44(64) Designated Contracting States:
AT BE CH DE DK ES FR GB GR IT LI LU NL SE(71) Applicant: **THE PROCTER & GAMBLE**
COMPANY
One Procter & Gamble Plaza
Cincinnati Ohio 45202(US)(72) Inventor: **Lowery, Colin James**
8 Marquis Avenue, St. Johns, Westerhope
Newcastle Upon Tyne NE5 1YF(GB)

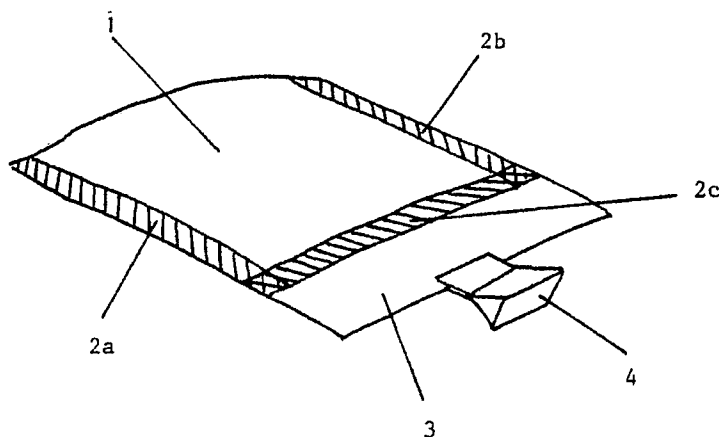
Inventor: **Dickenson, Haydn Guy William**
8 Hillside, Killingworth Village
Newcastle Upon Tyne NE12 0BJ(GB)
Inventor: **Heiner, Volker Ludwig**
Hofstätter Weg 6
D-6521 Dittelsheim-Hessloch(DE)
Inventor: **Watts, Dennis Edward**
1 Knivestone Court, Killingworth
Newcastle Upon Tyne NE12 0ST(GB)

(74) Representative: **Canonici, Jean-Jacques et al**
Procter & Gamble European Technical
Center N.V. Temselaan 100
B-1820 Strombeek-Bever(BE)(54) **Fabric-treatment sachets with handling device.**

(57) The present invention provides sachets containing a fabric treatment product which are equipped with a permanent handling device.

The handling device preferably consists in a loop of a rigid or semi rigid material, having a triangular cross section.

Fig. 1A



EP 0 395 152 A2

FABRIC-TREATMENT SACHETS WITH HANDLING DEVICE

Technical Field

5 The invention relates to single-dose articles which are suitable for treating fabrics in a washing machine, and which contain a fabric-treatment composition such as a detergent composition.

Background of the Invention

10

Although the marketing of detergent compositions packaged in bulk is common practice, it has been found that single-dose devices containing detergent compositions offer a number of advantages in terms of convenience of use and product efficiency.

15 In particular, these devices improve dosage control and considerably reduce loss of detergent composition caused by retention in the dispensers of washing machines.

Several kinds of single-dose detergent products have already been described in the art; a common property of these devices is their ability to discharge the detergent composition they contain during the wash cycle : bags which are made of water-soluble material have been disclosed, as well as bags made of
20 water-insoluble material fitted with a water soluble seal, as in GB 1.483.082, or a mechanically-weak seal, as in EP-B-0 040 931.

Sachets equipped with a rigid stud are disclosed in EP-A-249439.

However, such sachet-type products are not fully satisfactory in terms of their handling both before and after the wash; in most cases, a certain number of sachets are packed together in boxes and it may be
25 difficult to take a single sachet out of a box; further, because of a rather unpleasant feel, it is desirable to avoid holding the sachets in the hand.

After the wash cycle, the empty sachets are flat or in the form of sheets, so that they offer even less grip than in the initial form; moreover, the sachets are wet and often stick to the drum of the washing machine, which makes them uneasy to locate and grip.

30 The present invention provides single-dose fabric treatment products, in the form of sachets, which are easy to manipulate both before and after the wash cycle.

The present invention provides sachets containing a fabric-treatment product which are equipped with a permanent handling device.

35

Detailed description of the invention

The sachets of the present invention are preferably rectangular, and formed either from two rectangular
40 sheets of flexible material bonded together at their four edges, or from a single sheet of flexible material folded over and with the remaining three edges bonded together.

The sachets of the present invention are characterized in that a handling device is permanently attached to the sachet.

The handling device consists of a rigid or a semi rigid component of such a shape so as to allow it to
45 be gripped easily. Preferably, the rigid or semi rigid material is selected from polyethylene or polypropylene.

The handling device may be a full or hollow moulded component, but in a preferred embodiment, it consists in a loop formed by a rigid or semi rigid material; Preferably, such loop has a triangular cross section.

50 In the case where the handling device consists of a hollow, moulded component, it will preferably have a ring or doughnut shape.

The handling device may consist of a component directly attached to the sachet; in such case, any adhesive compound can be used but preferably, the component will be attached using an ultrasonic welding technique.

In the case where the component has a ring or doughnut shape, it is suitable to use sachets which have

at least one perforation on an extended fin or an edge, in which the ring or doughnut component may be permanently fastened.

In another embodiment, the handling device contains a rigid or semi-rigid component indirectly attached to the sachet; in such a case it is necessary to provide a means to attach the rigid or semi rigid component to the sachet. In a preferred embodiment, such means consist in a thread made of rigid or flexible material, and the rigid or semi-rigid component is of a shape such as to be held easily in the hand; for instance, a spherical shape is appropriate.

The handling device has several different possible locations on the sachet :

In one embodiment of the invention, the handling device is attached to one edge of the sachet, but in a preferred embodiment, the handling device is attached to an integral fin extending outward from one of the edges of the sachet or to an integral fin extending outward from one surface of the sachet.

The handling device according to the invention may be colored, printed or embossed by any means such as to make them easy to locate and/or identify by a logo or a brand name.

The present sachets can be non-opening, in which case, the sheet material is such as to allow water to pass through and dissolve the detergent composition, which is then released.

It is preferred, in the context of the present invention, that said sachets contain at least one opening side, i.e. a side which, while being closed by closing means before use of the sachet, opens up when in use in a washing machine, and allows dispensing of the fabric-treatment composition contained in it.

Most preferred in the present context, are sachets which are formed of a single sheet of flexible material folded over, and with the three remaining edges being opening sides, such as defined above. After the wash cycle, such sachets are in the form of a sheet.

The closing means of the opening sides contain preferably water-soluble seals, although mechanically-weak seals or combinations of water-soluble and mechanically-weak seals can be used.

Suitable water-soluble adhesives can, for example, be based on polysaccharides such as starch or dextrin, synthetic polymers such as polyvinyl alcohol, or alkali metal silicates or polyethylene oxide. Small amounts of plasticizers, for example ethylene glycol, can be added to the water-soluble adhesives, if desired.

The flexible sheet materials which are used to form the sachets herein, can be made of paper, of woven, knitted or non-woven fabrics, or of plastic film material.

The materials should be water-insoluble and can be either water-permeable or water-impermeable.

The materials used to form the sachets are required to have a high wet strength, so as not to disintegrate during the washing process. The preferred sheet material for forming the bags is paper or thin non-woven fabric made out of synthetic fibres; synthetic fibres include fibres made out of the following materials : Polyethylene, polypropylene, polyester, polyamide, polyacrylate, cellulose acetate, polyacrylonitrile, and any mixture thereof.

Alternatively, cellulosic materials can be used to make the non-woven fabrics herein, alone or in admixture with either synthetic or natural fibres. If natural fibres are used, it is desirable to include a proportion of long fibers such as manilla hemp, in order to improve the strength of the sheet material, and polymeric coating is also desirable for increasing wet strength.

It may be desirable to form the sachets of sheet material made from oxidation-resistant fibres, or to treat the sheet material before or after forming the sachets with a coating to improve oxidation resistance.

If water-insoluble, water-impermeable thermoplastic materials are used, including perforated materials such materials may advantageously be selected from polyolefins such as polyethylene, polypropylene, polystyrene; polyesters especially polyethylene terephthalate; vinyl polymers such as insoluble polyvinyl acetate and polyvinyl acrylate, polyvinyl chloride, and polyvinylidene chloride; polyamides and polyacrylonitrile; and other thermoplastic sheet materials having similar physical properties.

The fabric-treatment compositions which are contained in the sachets of the present invention are in particulate form, and are usually detergent compositions, i.e., a composition containing at least a surfactant and a builder is suitable for use in the present context; as an alternative, the sachets of the present invention can contain any particulate ingredient which is active during the wash and rinse cycles : bleaches, bleach activators, fabric softeners, perfumes, whitening or brightening agents, stain removal agents, enzymes and the like. It can be appropriate to keep certain of these ingredients separate during storage, and therefore executions of the present invention can be conceived, wherein the present sachets contain at least two separate compartments;

For ease-of-manufacturing and packaging reasons, it may be appropriate to have a certain number of sachets linked together; in this execution of the invention each of these sachets is detachable from the others and each sachet has an individual handling device according to the invention.

Examples

The following examples illustrate some of the possible executions of the invention, but are not intended to limit the scope of the application; further, the drawings to which the examples refer are not meant to

In the three following examples, the sachets contain the following particulate detergent composition.

Ingredients	Percent by weight
Anionic surfactant	8.0%
Nonionic surfactant	5.0%
Sodium tripolyphosphate	24.5%
Sodium perborate monohydrate	14.0%
Bleach activator	4.0%
Enzyme	0.8%
Sodium silicate	8.0%
Sodium carborate	11.0%
Minors and water	balance to 100

Example 1

This example refers to Fig. 1A and Fig. 1B; Fig. 1A represents the sachet before use, and Fig. 1B represents the sachet during the wash cycle.

The sachets consist of a sheet 1 of polyethylene oxide which is folded in two unequal parts; the three remaining edges 2a, 2b, 2c are bounded together, using a water soluble adhesive such as high molecular weight polyethylene oxide; these seals are represented by the hachured regions in Fig. 1A.

A fin 3 extends outward from the seal 2c and the handling device 4 is fixed on said fin; the handling device consists of a loop of polypropylene, such loop has a triangular cross section and is 15 mm long. The dimensions of the sachet are in this case : 2c = 110 mm and 2a = 2b = 90 mm.

During the wash (Fig. 1B), the three seals of 2a, 2b, 2c are dissolved and the sachets opens up and discharges the contained detergent composition described above.

The zones which were initially sealed are shown by the dotted lines.

Example 2

This example refers to Fig. 2A and 2B which represent, respectively, the sachet before and during the wash.

This sachet consists of a sheet 1 which is folded three times, as illustrated in Fig. 2B. The three edges 2a, 2b and 2c are bonded, using high molecular weight polyethylene oxide as a water soluble adhesive; the three seals are represented by the hachured regions in Fig. 2A.

This sachet has a fin 3 extending outwards from the middle seal in 2c and a handling device 4 is attached to said fin.

The handling device 4 consists of a loop of polypropylene having a triangular cross section; the handling device is 15 mm long and the dimensions of the sachet are : 2c = 120 mm and 2a = 2b = 100 mm.

During the wash (Fig. 2B), the three seals of 2a, 2b, 2c are dissolved and the sachets opens up and discharges the contained detergent composition, described above.

The zones which were initially sealed are shown by the dotted lines.

Example 3

This example refers to Fig. 3A and 3B which represent, respectively, the sachet before and during the wash.

This sachet consists of a sheet 1 which is folded three times, as illustrated in Fig. 3B. The three edges 2a, 2b and 2c are bonded, using high molecular weight polyethylene oxide as a water soluble adhesive; the three seals are represented by the hachured regions in Fig. 3A.

The sachet has a handling device 4 which is fixed at one extremity of one of the lateral seals 2a or 2b.

- 5 The handling device 4 consists of a loop of polypropylene having a triangular cross section; the handling device is 15 mm long and the dimensions of the sachet are :2c = 130 mm and 2a = 2b = 110 mm.

During the wash (Fig. 3B), the three seals of 2a, 2b, 2c are dissolved and the sachets opens up and discharges the contained detergent composition, described above.

The zones which were initially sealed are shown by the dotted lines.

- 10 After having discharged the fabric treatment composition, the sachet is in the form of a sheet, but remains folded, since the handling device is positioned on a seal and, therefore, holds together a portion of the two edges.

15 Claims

1. A sachet of flexible sheet material with a fabric-treatment composition enclosed in it, for use as a single-dose fabric treatment article in a washing machine, characterized in, that a handling device is permanently attached to the sachet.

- 20 2. A sachet in accordance with claim 1 wherein the handling device consists of a rigid or semi-rigid component of such a shape so as to allow it to be gripped easily, said component being directly attached to the sachet.

3. A sachet in accordance with claim 2 wherein the handling device consists of a strip of rigid or semi-rigid material formed into a loop.

- 25 4. A sachet in accordance with claim 3 wherein the loop formed by the rigid or semi-rigid material is of a predetermined geometrical shape.

5. A sachet in accordance with claim 4 wherein said geometrical shape is a hollow triangle.

6. A sachet in accordance with claim 3 wherein the rigid or semi-rigid material is selected from the group of propylene, and polyethylene.

- 30 7. A sachet in accordance with claim 1 wherein the handling device consists of a rigid or semi-rigid component and a means to indirectly attach said component to the sachet.

8. A sachet in accordance with claim 7 wherein said means to indirectly attach the component to the sachet, is a thread made of rigid or flexible material.

- 35 9. A sachet in accordance with claims 1 - 8 wherein the handling device is attached to one edge of the sachet.

10. A sachet in accordance with claim 9, wherein the handling device is attached to an integral fin extending outwardly from one of the edges of the sachet.

11. A sachet in accordance with claims 1 - 8 wherein the handling device is attached to one surface of the sachet.

- 40 12. A sachet in accordance with claim 11 wherein the handling device is attached to an integral fin extending outwardly from one of the surfaces of the sachet.

13. A sachet according to any of the preceding claims characterized in that it comprises at least two compartments containing different ingredients.

45

50

55

Fig. 1A

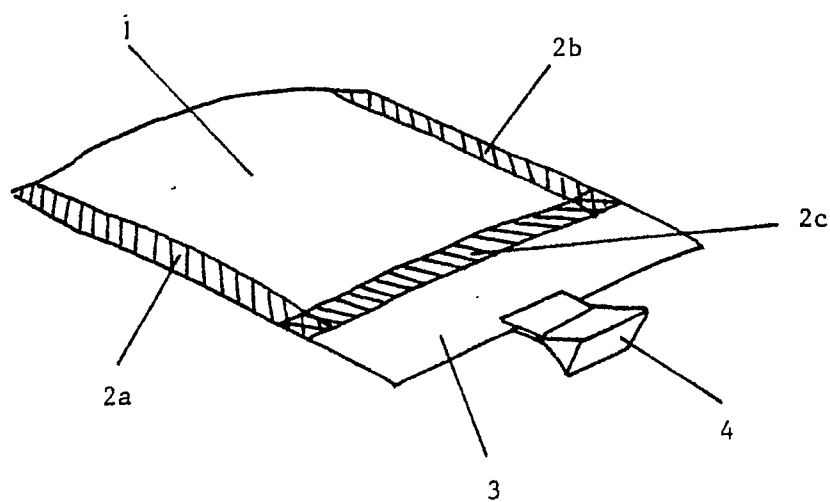


Fig. 1B

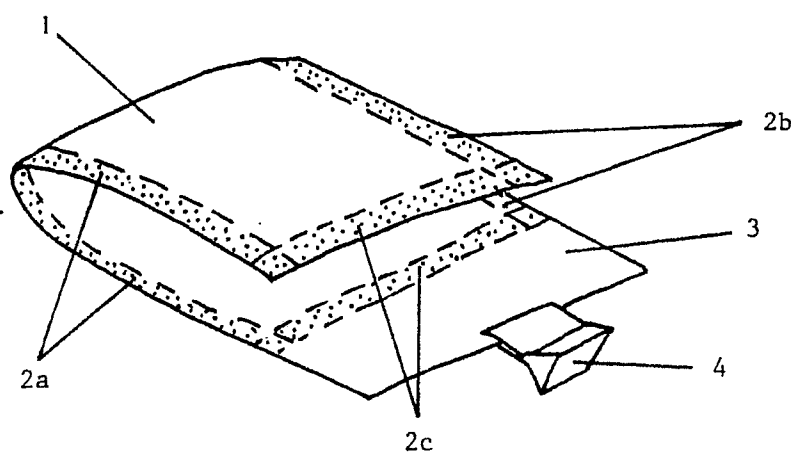


Fig. 2A

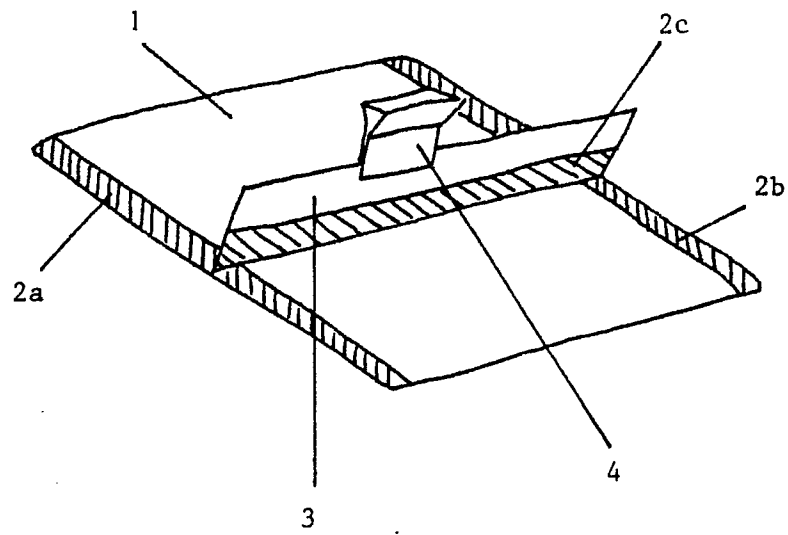


Fig. 2B

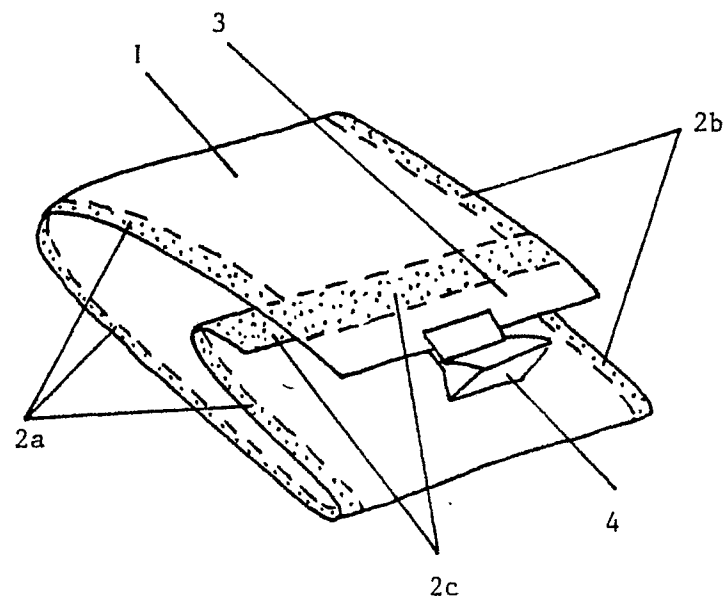


Fig. 3A

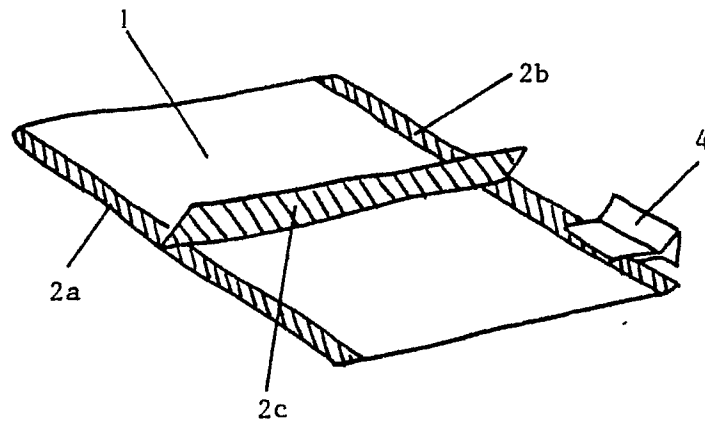


Fig. 3B

