

(19)



(11)

EP 1 755 971 B1

(12)

EUROPEAN PATENT SPECIFICATION

(45) Date of publication and mention of the grant of the patent:
24.04.2013 Bulletin 2013/17

(51) Int Cl.:
B65D 30/06 (2006.01)

(21) Application number: **05745631.1**

(86) International application number:
PCT/NL2005/000352

(22) Date of filing: **10.05.2005**

(87) International publication number:
WO 2005/108223 (17.11.2005 Gazette 2005/46)

(54) **MESH BAG**

NETZBEUTEL

SAC-FILET

(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU MC NL PL PT RO SE SI SK TR

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(30) Priority: **10.05.2004 NL 1026151**

(43) Date of publication of application:
28.02.2007 Bulletin 2007/09

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(56) References cited:
EP-A- 0 405 595 EP-A- 1 388 502
FR-A- 1 406 639 FR-A- 2 746 369
US-B1- 6 416 220

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EP 1 755 971 B1

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Description

BACKGROUND OF THE INVENTION

[0001] The invention relates to a bag, particularly a bag intended to be filled with more or less bulbous articles or crops, such as onions and potatoes.

[0002] Such bags are often used for packaging 25 kg of onions or potatoes, and the like, and comprise a front wall and a rear wall. They can be supplied on a roll or in stacks. Such bags are usually made of material having a more or less open or permeable structure (closed mesh or standard mesh), such as bags of knitted or woven material, particularly so-called gauze bags or net bags but also burlap sacks or the like, or even bags of non-woven material.

[0003] The bags on a roll can be provided in the form of a layer of net-material folded double, which at intermediate distances corresponding to the bag length is provided with transverse seams and at both the longitudinal edges forms a longitudinal seam and a longitudinal fold, respectively. The bags, optionally in a filling machine, are separated from each other next to the transverse seams. This causes the bags to fray, as a result of which they look messy. After use the bags are thrown away as waste.

[0004] The bags in stacks may have a tidier look and as a result are more suitable to be reused. A drawback however may be that when opening the closed opening the bag may be damaged which renders it difficult to re-use the bag. Bags in a stack may also be knitted, due to which they are more easily deformable in their plane. Bags in stacks are often filled by picking them from a stack by hand and then hanging them on a fill machine.

[0005] There are loose bags that can be filled and closed in a fill and closing machine, wherein use is made of a storage holder and supply in the form of a system with support pegs. The bags then have to be provided with apertures for the support pegs (for instance wicket pegs). The bags usually are extended at one of the walls, and form an upper strip at that location in which the apertures have been provided. The bag can be taken off from the support pegs, for instance by tearing the bag from the support pegs, ripping the apertures. Optionally the strip may at a later stage be torn off. An example is described in US-A-6.416.220.

[0006] In the open or permeable material, particularly net bag material, the apertures may be ripped already when on the support pegs or be broadened to such an extent that the position of the bag cannot be relied on any more.

[0007] It is a object of the invention to provide a bag of the type mentioned above that is easy to handle in a fill and closing machine, particularly a fill machine provided with support pegs for the bags.

[0008] A further object of the invention is to provide a bag of the said type that can be automatically supplied and/or hung on a fill machine.

[0009] A further object of the invention is to provide a

bag of the above-mentioned type that is suitable for re-use.

[0010] Another object of the invention is to provide a bag of the above-mentioned type that is versatile in its use.

SUMMARY OF THE INVENTION

[0011] In view of achieving at least one of these objects the invention provides a bag according to claim 1.

[0012] Gauze-like in this case means a more or less open or permeable structure (standard mesh or even more open), particularly a fabric, knitting or cloth (non-woven) having holes optionally in the form of a net.

[0013] Both layers of material ensure stabilisation of the apertures in the bag walls, wherein ripping the gauze-shaped material can be prevented. As a result the bags will indeed be properly suitable to be supplied using a supply machine provided with one or more support pegs and/or to be automatically hung on a fill machine. The bags are carried on both walls. The bags may for that purpose be provided with two apertures in each wall.

[0014] European patent application EP-A-1.388.502, which is considered to be the prior art closest to claim 1 of the invention, discloses a mesh bag having a front mesh wall and a rear mesh wall. The upper end of the bag comprises two weldable material films superimposed on the outer faces of the front wall and rear wall, respectively, both walls and both films being joined by means of welding so as to close the bag.

[0015] In the bag according to the invention, the front and rear wall leave a fill opening open and in an upper area near or adjacent to their upper edge the walls are each provided with a layer of added material which is provided with a hole substantially coinciding with the aperture in the wall.

[0016] The shape stability of the apertures in the bag walls is further increased when the aperture has an edge defining the passage of aperture and hole.

[0017] The layers of added material may extend over the width of the walls, between the longitudinal edges, as a result of which they may optionally be used when closing the bag.

[0018] In a simple and easy-to-make embodiment the layers of added material are attached to the walls by supplying heat.

[0019] In a further embodiment of the bag according to the invention the layers of added material are attached to the outside of the walls. They thus provide a surface suitable for applying characteristics, such as labels. Said labels are also placed such that, even when the bags are stacked, they can still easily be seen.

[0020] In an alternative, further embodiment of the bag according to the invention the layers of added material are attached to the inside of the walls. In this way they can be attached directly onto each other when closing the bag.

[0021] In one embodiment the layers of added material

are applied in the form of a sheet, particularly in the form of foil.

[0022] In a further development of the bag according to the invention the layers of added material are substantially air impermeable. For easy transport in the fill machine the bags can then be engaged on both sides, near the opening by means of for instance suction cups, and optionally be opened with them.

[0023] The material of the layers may be sealable onto itself.

[0024] A bag according to the invention may, due to easy handling in a fill machine, also be adapted to lower filling weights, such as 10 kg, or 5 kg or even lower (for instance 0.5 kg). This makes it possible to intend the bag for the private market, particularly via supermarkets. In order to make the bag even more suitable for that purpose, according to the invention, the walls can each be provided with an aperture for forming a handle, by which means the consumer can easily carry the bag. Now, as well, the layer of added material ensures that the aperture in question in the gauze-shaped material will not be ripped apart.

[0025] The walls of the bag can be made of a synthetic material, particularly a polyolefin, such as polyethylene, or PVC.

[0026] When the walls of the bag are made of a fabric they can be form stable, which enhances the positioning and handling of the bag, particularly in automatic systems.

[0027] The layers of added material can be made of a synthetic material, particularly a polyolefin, such as polyethylene or polypropene, or PVC.

[0028] The materials of the walls and of the layers of added material can be the same.

[0029] Preferably, the upper edges of both walls are situated at approximately the same distance from the bottom edge and both walls near their upper edge are provided with at least two apertures for hanging the bag on support pegs. Such a bag is suitable for use in storage systems and supplying systems in which the bags are hung on so-called support pegs.

[0030] In one embodiment the bag is substantially air impermeable in areas of both walls situated near the upper edge. The apertures may be situated adjacent to these areas. The bag is suitable to be engaged by suction cups for transport and/or holding the bag open.

[0031] The invention further provides a stack of unfilled bags according to the invention.

SHORT DESCRIPTION OF THE DRAWINGS

[0032] The invention will be elucidated on the basis of a number of exemplary embodiments shown in the attached drawings, in which:

Figure 1 shows a schematic view of an exemplary embodiment of a net bag according to the invention, in a slightly opened condition, as well as a storage

holder for it;

Figure 2 shows a schematic cross-section, in longitudinal direction, of an exemplary embodiment of a net bag according to the invention, in slightly opened condition;

Figure 3 shows a schematic cross-section, in longitudinal direction of a further exemplary embodiment of a net bag according to the invention, in slightly opened condition;

Figure 4 show a net bag of figure 2, in filled and closed condition; and

Figure 5 shows a bag not in accordance with the invention.

DETAILED DESCRIPTION OF THE DRAWINGS

[0033] The unfilled bag 1 in figure 1 comprises a front wall 2 and a rear wall 3 of broad-gauze-like material, for instance having warp and weft of polypropene threads or polyethene threads, optionally braided. In one example the mesh of the material is 6x6, that means six 650 denier threads per 2,54 cm (1 inch) in both directions, in the form of a so-called "leno" fabric. The front wall 2 and the rear wall 3 of this woven synthetic bag are obtained by folding a rectangular piece of net bag material, wherein a longitudinal fold 6 is formed. For forming a net bag the front wall 2 and the rear wall 3 are stitched together, up to the upper edges 8, at the location of the transverse seam 4 and the other longitudinal seam 5. The bag 1 can be 43x65 cm. The weight of the bag 1 can be 46 grams.

[0034] At the top, with their upper edges 8, the front wall 2 and the rear wall 3 form a fill opening 9.

[0035] In an upper area of the front wall 2 and the rear wall 3 of the net/gauze-like material, which area connects to the upper edges 8, the net/gauze-like material is covered at the outside with strips of synthetic foil-like material 7, for instance of polyethene film. The strips 7 can be applied by spreading a plastic material onto the outside of the front wall 2 and the rear wall 3 over nearly the full strip surface. Alternatively use can be made of strips of foil material, which by means of an adhesive, for instance a coating, is attached on the net/gauze-like material.

[0036] In figure 1 a storage holder 20 of bags 1 is schematically shown which storage holder has two support pegs 21 a, 21 b. Such a holder is intended for holding a store of bags for supply to a fill machine that is not further shown. Also during the transport to the fill machine it can be desirable that the bags are supported on pegs.

[0037] To that end the bag 1 in the said upper area of the front wall 2 and the rear wall 3 is provided with continuous apertures 10a, 10b with which the bag 1 can be hung on the support pegs 21 a, 21 b so as to be slidable (direction A and back again). The apertures 10a, 10b are made circular in the strips 7, for instance by punching.

Apertures that are substantially congruent thereto are made in the net/gauze-shaped material of the front wall 2 and the rear wall 3. The edges of the apertures 10a, 10b are defined by the added material of the strips 7.

[0038] Between the apertures 10a, 10b continuous handle apertures 11 are provided for later on carrying the net bag 1 in filled condition by hand. Here again the foil material defines the dimensions of the apertures 11.

[0039] The longitudinal section of figure 2 schematically shows the layer build-up of the net bag 1. Here the layer of material 7 is attached at the outside of the net/gauze material of the front wall 2 and the rear wall 3.

[0040] The material of the strips 7 is substantially air impermeable, so that the upper areas in question -adjacent to the apertures 10a, 10b and 11- can be engaged by suction cups 25, schematically shown. The bags can be moved by the suction cups 25 in particular over the pegs 21 a,b, from a store to a filling station, and optionally be opened there for engagement with a next bag holder, in order to be filled with for instance potatoes or onions, from the direction B.

[0041] In figure 2 it is furthermore shown that at the outside of the front wall 2 and the rear wall 3 a layer 12 of foil material can be applied for instance showing a mark of the producer or trader.

[0042] Closing the bag 1, shown in figure 2, can take place by means of stitching or heat sealing. In case of heat sealing the net/gauze-like material of the front wall 2 and the rear wall 3 can be melted together, and, in case of sufficient closing pressure, the foil material of both strips 7 can also be brought into contact with each other, for sealing them, for instance line-shaped.

[0043] In figure 3 an alternative embodiment is shown, wherein the strips of material 7 are attached to the inner surface of the front wall 2 and the rear wall 3. The suction cups 25 can now also be effective in taking along and opening bag 1 of figure 3. When closing the bag in question, after filling, the strips 7 can be directly sealed onto each other, optionally line-shaped again.

[0044] This will then result in the bag 100, shown in figure 4, filled with a bulbous or tuberous product P which bag has the look of a net bag. On the bag 100, shown in figure 4, a label 14 or the like for identification of the net bag 100 can be applied on the outside of the strip 7.

[0045] The bag 1,100 can be used for bulk packagings of for instance 25 or 50 kg of for instance onions or potatoes. Particularly when a bag 100 is suitable for low filling weights, such as consumer packagings, for instance 10 kg, 5 kg or lower, such as 0.5 kg, the bag 100 can be carried (direction D) by a consumer, with a hand in the handles 11.

[0046] Prior to use the user can open the net bag 1,100 by breaking the closure, particularly a heat sealing, particularly a line-shaped heat sealing, of the strips 7 and optionally the net bag material. The net bag 1,100 then remains substantially undamaged here, and can be re-used after use.

[0047] The bag 201, shown in figure 5 is simple in

build-up and has a front wall 202 and a rear wall 203 of identical material, that is at least almost air impermeable. In this example the material can be closed woven polypropene threads. The material of the walls 202 and 203 is in any case closed to such an extent that suction cups can effectively engage it.

[0048] The bag 202 is closed at both the longitudinal edges 205 and 206 and at the bottom edge 204. At the top the upper edges 208 of the walls 202 and 203 define an opening 209. The longitudinal edges 205, 206 extend up to the upper edges 208. At a small distance below the upper edges 208 apertures 210a, 210b are provided in both walls 202 and 203. The apertures 210a, 210b are circular and adapted to the support pegs 221a, 221b shown in figure 5 of a support peg storage system.

[0049] If the material of the walls 202 and 203 per se is such that the walls cannot be sufficiently engaged by a suction cup, then the engagement area in question can be made sufficiently air-tight by locally applying a said layer 7.

Claims

1. Bag (1) comprising a gauze-like first wall (2) and a gauze-like second wall (3), which walls (2, 3) are attached to each other along their bottom edge (4) and along two longitudinal edges (5,6) and at their upper edge (8) leave a fill opening (9) open, wherein the walls (2, 3) in their upper area near their upper edge are provided with at least one aperture (10a, 10b) for hanging or carrying the bag, and wherein the walls in their upper area near or adjacent to their upper edge are each provided with a layer of added material (7) attached thereto, wherein the layer of added material (7) is provided with a hole (10a, 10b) substantially coinciding with the aperture.
2. Bag (1) according to claim 1, wherein the edge of the aperture (10a, 10b) is defined by the layer of added material.
3. Bag (1) according to claim 1 or 2, wherein the layers of added material (7) extend over the width of the walls (2,3), between the longitudinal edges (5,6).
4. Bag (1) according to claim 1, 2 or 3, wherein the layers of added material (7) are attached to the walls (2, 3) by supplying heat.
5. Bag (1) according to any one of the claims 1-4, wherein the layers of added material (7) are attached to the outside of the walls (2,3).
6. Bag (1) according to any one of the claims 1-4, wherein the layers of added material (7) are attached to the inside of the walls (2, 3).

7. Bag (1) according to any one of the preceding claims, wherein the walls (2,3) are each provided with two apertures (10a, 10b) to be used on support pegs (21a, 21b).
8. Bag (1) according to any one of the claims 1-6, wherein the layers of added material (7) are sheets, particularly in the form of foil.
9. Bag (1) according to any one of the preceding claims, wherein the layers of added material (7) are substantially air impermeable.
10. Bag (1) according to any one of the preceding claims, wherein the material of the added layers (7) can be sealed onto itself.
11. Bag (1) according to any one of the preceding claims, wherein the walls (2,3) are each provided with an aperture (11) for forming a handle.
12. Bag (1) according to any one of the preceding claims, wherein the walls (2,3) are made of a synthetic material, particularly a polyolefin, such as polyethene or polypropene, or PVC.
13. Bag (1) according to any one of the preceding claims, wherein the walls (2,3) are made of a fabric.
14. Bag (1) according to any one of the preceding claims, wherein the material of which the layers of added material (7) are made is a synthetic material, particularly a polyolefin, such as polyethene or polypropene, or PVC.
15. Bag (1) according to any one of the preceding claims, wherein the upper edges (8) of both walls are situated at approximately the same distance from the bottom edge (4) and both walls (2, 3) near their upper edge are provided with at least two apertures (10a, 10b) for hanging the bag on support pegs, (21a, 21b) wherein, preferably, the bag in areas of both walls (2,3) situated near the upper edge (8) is substantially air impermeable.
16. Bag according to claim 15, wherein the longitudinal edges (5,6) extend up to the upper edge (8) of the bag.
17. Bag (1) according to claim 15 or 16, wherein the walls (2,3) are free from tear-off lines.
18. Stack of unfilled bags (1) according to any one of the preceding claims.

Patentansprüche

1. Beutel (1), der eine gazeartige erste Wand (2) und eine gazeartige zweite Wand (3) aufweist, wobei die Wände (2, 3) entlang ihrem unteren Rand (4) und entlang zwei Längsrändern (5, 6) aneinander angebracht sind und an ihrem oberen Rand (8) eine Füllöffnung (9) offen lassen, worin die Wände (2, 3) in ihrem oberen Bereich nahe ihrem oberen Rand (8) mit zumindest einer Öffnung (10a, 10b) versehen sind, um den Beutel aufzuhängen oder zu tragen, und worin die Wände in ihrem oberen Bereich nahe oder benachbart ihrem oberen Rand jeweils mit einer daran angebrachten zusätzlichen Materiallage (7) versehen sind, worin die zusätzliche Materiallage (7) mit einem Loch (10a, 10b) versehen ist, das mit der Öffnung im Wesentlichen übereinstimmt.
2. Beutel (1) nach Anspruch 1, worin der Rand der Öffnung (10a, 10b) durch die zusätzliche Materiallage begrenzt ist.
3. Beutel (1) nach Anspruch 1 oder 2, worin die zusätzlichen Materiallagen (7) sich über die Breite der Wände (2, 3) zwischen den Längsrändern (5, 6) erstrecken.
4. Beutel (1) nach Anspruch 1, 2 oder 3, worin die zusätzlichen Materiallagen (7) durch Anwenden von Wärme an den Wänden (2, 3) angebracht sind.
5. Beutel (1) nach einem der Ansprüche 1 bis 4, worin die zusätzlichen Materiallagen (7) an der Außenseite der Wände (2, 3) angebracht sind.
6. Beutel (1) nach einem der Ansprüche 1 bis 4, worin die zusätzlichen Materiallagen (7) an der Innenseite der Wände (2, 3) angebracht sind.
7. Beutel (1) nach einem der vorhergehenden Ansprüche, worin die Wände (2, 3) jeweils mit zwei Öffnungen (10a, 10b) versehen sind, die an Haltestegen (21 a, 21 b) zu verwenden sind.
8. Beutel (1) nach einem der Ansprüche 1 bis 6, worin die zusätzlichen Materiallagen (7) Schichten, insbesondere in der Form einer Folie, sind.
9. Beutel (1) nach einem der vorhergehenden Ansprüche, worin die zusätzlichen Materiallagen (7) im Wesentlichen luftundurchlässig sind.
10. Beutel (1) nach einem der vorhergehenden Ansprüche, worin die zusätzlichen Materiallagen (7) auf sich selbst gesiegelt werden können.
11. Beutel (1) nach einem der vorhergehenden Ansprüche, worin die Wände (2, 3) jeweils mit einer Öffnung

- (11) zur Bildung eines Griffs versehen sind.
12. Beutel (1) nach einem der vorhergehenden Ansprüche, worin die Wände (2, 3) aus Synthetikmaterial, insbesondere Polyolefin, wie etwa Polyethylen oder Polypropen, oder PVC hergestellt sind. 5
13. Beutel (1) nach einem der vorhergehenden Ansprüche, worin die Wände (2, 3) aus Stoff hergestellt sind. 10
14. Beutel (1) nach einem der vorhergehenden Ansprüche, worin das Material, aus denen die zusätzlichen Materiallagen (7) hergestellt sind, Synthetikmaterial, insbesondere Polyolefin, wie etwa Polyethylen oder Polypropen, oder PVC ist. 15
15. Beutel (1) nach einem der vorhergehenden Ansprüche, worin die oberen Ränder (8) beider Wände angenähert mit dem gleichen Abstand von dem unteren Rand (4) angeordnet sind, und beide Wände (2, 3) nahe ihrem oberen Rand mit zumindest zwei Öffnungen (10a, 10b) versehen sind, um den Beutel an Haltestegen (21 a, 21 b) aufzuhängen, worin bevorzugt der Beutel in Bereichen beider Wände (2, 3), die nahe dem oberen Rand (8) angeordnet sind, im Wesentlichen luftundurchlässig ist. 20 25
16. Beutel (1) nach Anspruch 15, worin sich die Längsränder (5, 6) bis zum oberen Rand (8) des Beutels erstrecken. 30
17. Beutel (1) nach Anspruch 15 oder 16, worin die Wände (2, 3) frei von Abreißlinien sind.
18. Stapel aus ungefüllten Beuteln (1) gemäß einem der vorhergehenden Ansprüche. 35

Revendications

1. Sac (1) comprenant une première paroi de type gaze (2) et une seconde paroi (3) de type gaze, lesquelles parois (2, 3) sont fixées entre elles le long de leur bord inférieur (4), et le long de deux bords longitudinaux (5, 6) et au niveau de leur bord supérieur (8) laissent une ouverture de remplissage (9) ouverte, dans lequel les parois (2, 3) dans leur zone supérieure, à proximité de leur bord supérieur (8), sont prévues avec au moins une ouverture (10a, 10b) pour suspendre ou porter le sac, et dans lequel les parois dans leur zone supérieure à proximité de ou de manière adjacente à leur bord supérieur, sont chacune prévues avec une couche de matériau ajouté (7) fixée à ces dernières, dans lequel la couche de matériau ajouté (7) est prévue avec un trou (10a, 10b) coïncidant sensiblement avec l'ouverture. 40 45 50
2. Sac (1) selon la revendication 1, dans lequel le bord de l'ouverture (10a, 10b) est défini par la couche de matériau ajouté. 5
3. Sac (1) selon la revendication 1 ou 2, dans lequel les couches de matériau ajouté (7) s'étendent sur la largeur des parois (2, 3), entre les bords longitudinaux (5, 6). 10
4. Sac (1) selon la revendication 1, 2 ou 3, dans lequel les couches de matériau ajouté (7) sont fixées aux parois (2, 3) en fournissant de la chaleur. 15
5. Sac (1) selon l'une quelconque des revendications 1 à 4, dans lequel les couches de matériau ajouté (7) sont fixées à l'extérieur des parois (2, 3). 20
6. Sac (1) selon l'une quelconque des revendications 1 à 4, dans lequel les couches de matériau ajouté (7) sont fixées à l'intérieur des parois (2, 3). 25
7. Sac (1) selon l'une quelconque des revendications précédentes, dans lequel les parois (2, 3) sont chacune prévues avec deux ouvertures (10a, 10b) destinées à être utilisées sur des patères de support (21a, 21b). 30
8. Sac (1) selon l'une quelconque des revendications 1 à 6, dans lequel les couches de matériau ajouté (7) sont des feuilles, en particulier se présentant sous la forme d'une feuille métallique. 35
9. Sac (1) selon l'une quelconque des revendications précédentes, dans lequel les couches de matériau ajouté (7) sont sensiblement imperméables à l'air. 40
10. Sac (1) selon l'une quelconque des revendications précédentes, dans lequel le matériau des couches ajoutées (7) peut être scellé sur lui-même. 45
11. Sac (1) selon l'une quelconque des revendications précédentes, dans lequel les parois (2, 3) sont chacune prévues avec une ouverture (11) pour former une poignée. 50
12. Sac (1) selon l'une quelconque des revendications précédentes, dans lequel les parois (2, 3) sont réalisées dans un matériau synthétique, en particulier une polyoléfine, telle que le polyéthylène ou le polypropylène ou le PVC. 55
13. Sac (1) selon l'une quelconque des revendications précédentes, dans lequel les parois (2, 3) sont réalisées à partir d'un tissu.
14. Sac (1) selon l'une quelconque des revendications précédentes, dans lequel le matériau avec lequel les couches de matériau ajouté (7) sont réalisées, est un matériau synthétique, en particulier une polyolé-

fine, telle que le polyéthylène ou le polypropylène ou le PVC.

15. Sac (1) selon l'une quelconque des revendications précédentes, dans lequel les bords supérieurs (9) des deux parois sont situés approximativement à la même distance du bord inférieur (4) et les deux parois (2, 3) à proximité de leur bord supérieur sont prévues avec au moins deux ouvertures (10a, 10b) pour suspendre le sac sur des patères de support (21a, 21b), dans lequel, de préférence, le sac dans les zones des deux parois (2, 3) situées à proximité du bord supérieur (8) est sensiblement imperméable à l'air.
16. Sac (1) selon la revendication 15, dans lequel les bords longitudinaux (5, 6) s'étendent jusqu'au bord supérieur (8) du sac.
17. Sac (1) selon la revendication 15 ou 16, dans lequel les parois (2, 3) sont dépourvues de lignes de déchirure.
18. Empilement de sacs (1) non remplis selon l'une quelconque des revendications précédentes.

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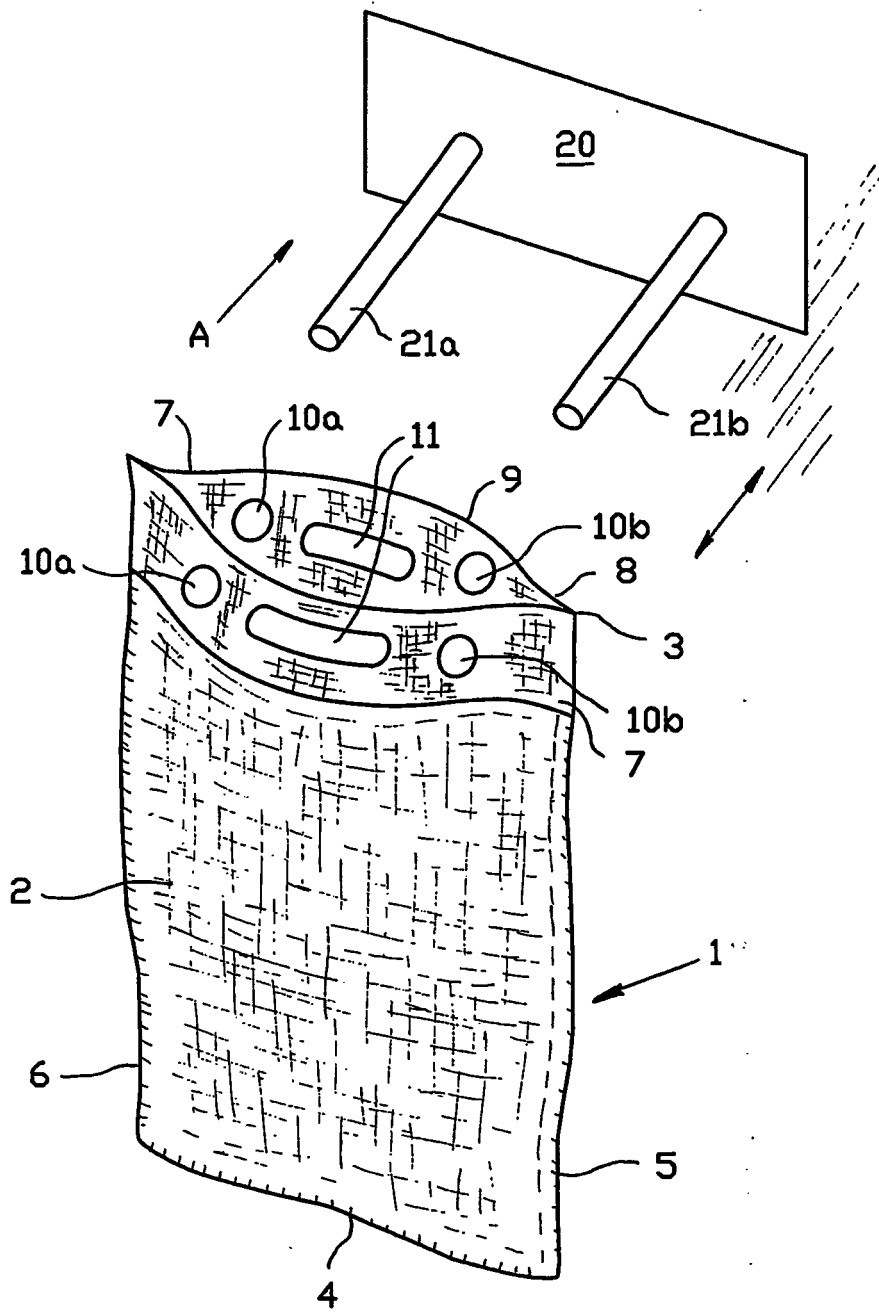


FIG. 1

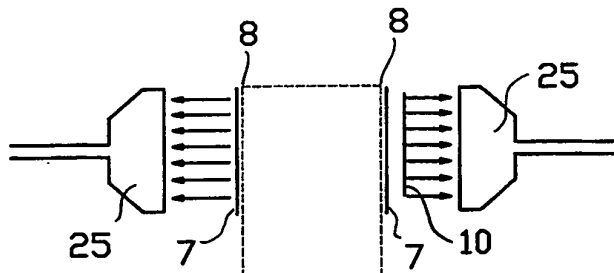


FIG. 2

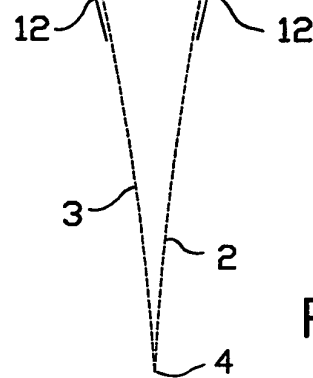
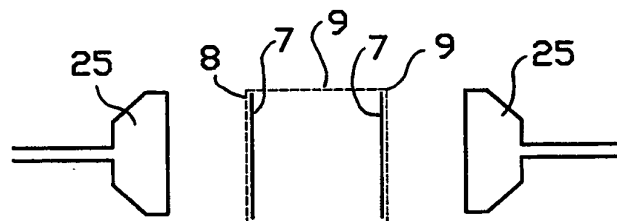
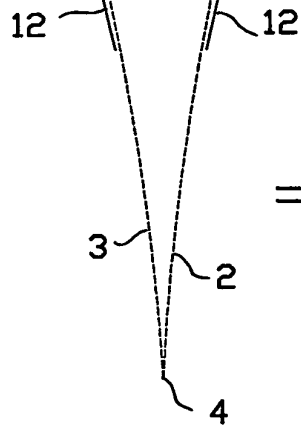


FIG. 3

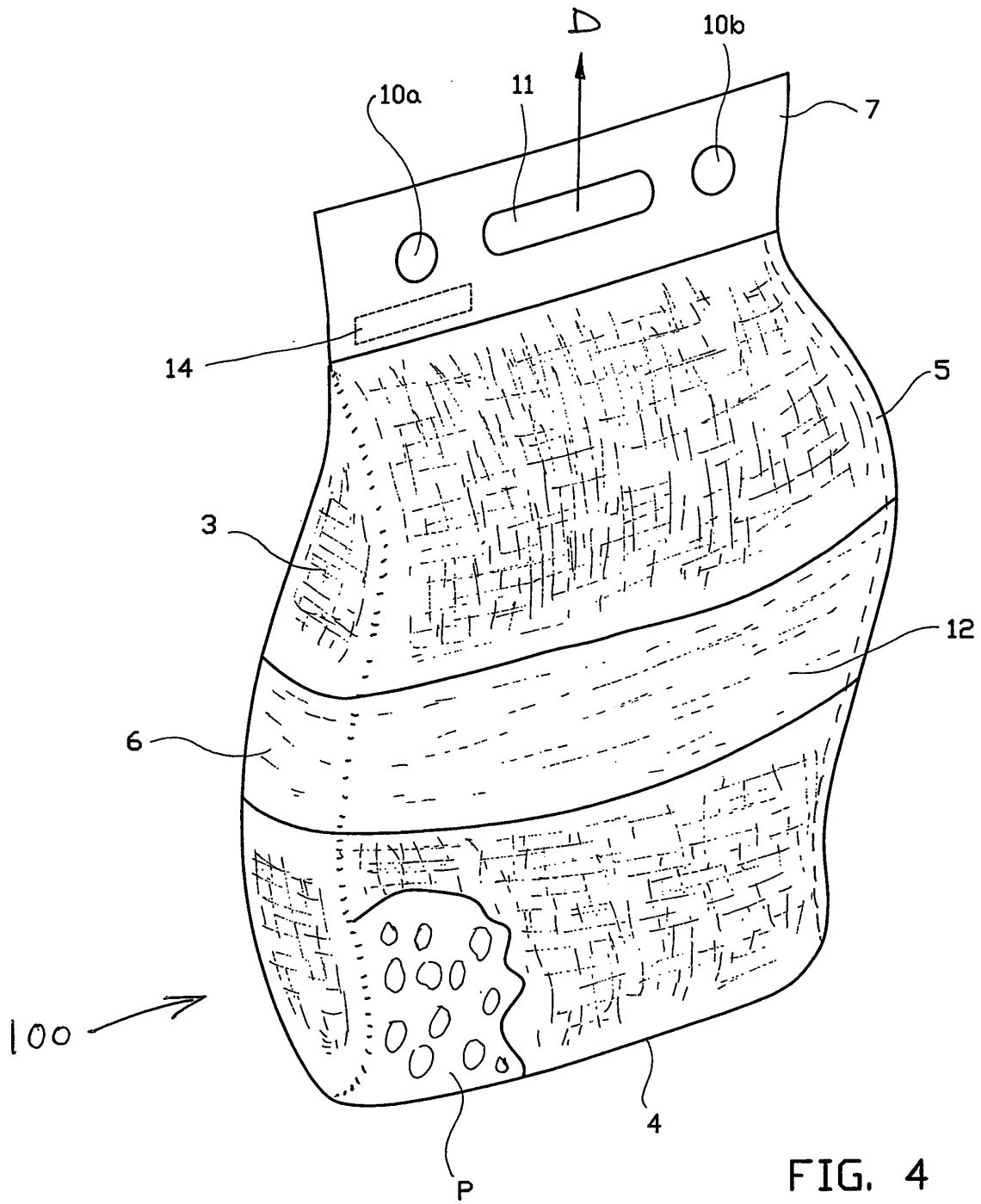


FIG. 4

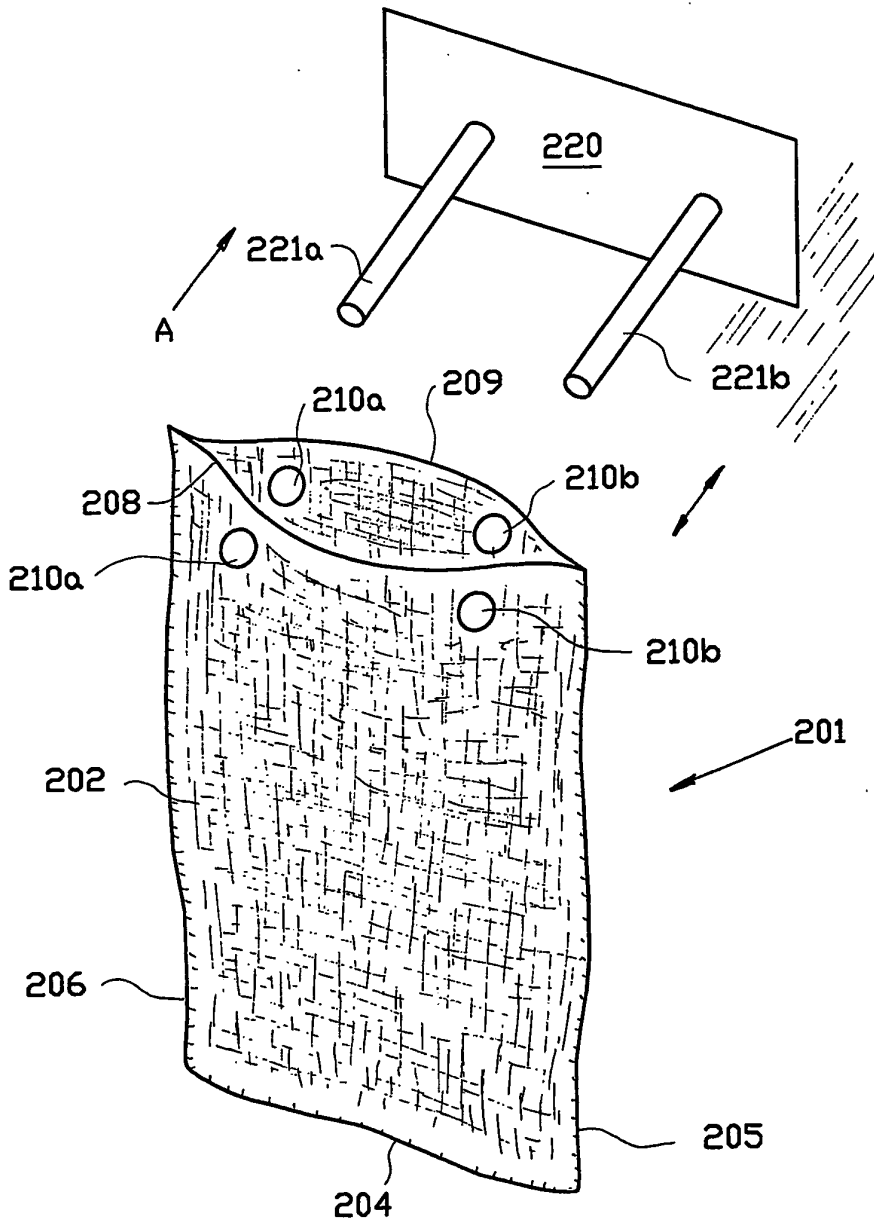


FIG. 5

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

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