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A BAG OR POUCH FOR CONTAINING A FLUID

The present invention relates to a bag or pouch made from a pair of flat walls formed by flexible sheet material and sealingly interconnected so as to define between the opposite walls a storage chamber for containing a fluid and at least one fluid discharge passage communicating with the storage chamber at a junction position and arranged outside the storage chamber, which means that the opposite wall parts defining the fluid discharge passage do not extend in-between the opposite wall parts defining the storage chamber. The bag or pouch is such that the opposite wall part defining the discharge passage are moved into mutual sealing contact at at least one sealing position when fluid has been filled into the storage chamber. This means that when the bag or pouch has been distended by gaseous or liquid fluid filled into the storage chamber, the stresses generated in the opposite walls of the bag or pouch cause the fluid discharge passage to seal.

DE-A-26 47 399, DE-A-40 07 128, and DE-B-12 07 856 disclose bags or pouches of a type similar to that described above. In these known bags, however, the opposite flexible wall parts defining the discharge passage therebetween are located between the opposite wall parts defining the storage chamber so that the pressure of a fluid contained within the storage chamber tends to press the opposite wall parts of the discharge passage into mutual sealing engagement. When a gaseous or liquid product contained in these bag-like containers is to be discharged a thin tube or a similar elongated object has to be inserted through the discharge passage in order to open the same.

Norwegian patent No. 96,943 and US patent No. 3,149,772 disclose a bag or pouch of the above type defining a storage chamber and a discharge passage arranged outside the storage chamber.

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The present invention relates to a bag or pouch of the above type having an improved self-sealing effect so that the discharge passage may be reliably sealed even when the discharge passage is relatively broad and also when the product
5 contained in the storage chamber is a gas, a gas mixture, or a low viscosity liquid having a small surface tension. The bag or pouch according to the invention is self-sealing even when it is only partly filled with fluid.

According to a first aspect the bag or pouch according to the
10 present invention is characterized in that at least at one side of the fluid discharge passage and adjacent thereto the storage chamber extends beyond the junction position in a direction towards an outlet end of the discharge passage.

When a bag or pouch of the type described above is distended
15 by an inner fluid pressure the opposite wall parts adjacent to the junction position defines (in a cross-sectional view) an outer angle (β in Fig. 31) with the central plane of the bag in its flat, empty, collapsed condition. It has been found that the self-sealing effect of the discharge passage
20 of the bag or pouch is increased when the said angle is reduced. It has also been found that the angle β is reduced and that the self-sealing effect of the bag or pouch is consequently increased when the storage chamber extends beyond the junction position in a direction towards an outlet
25 of the discharge passage at least at one side and preferably at both sides of the fluid discharge passage.

According to a second aspect the bag or pouch according to the present invention is characterized in that at least one restriction is defined in the discharge passage, for example
30 at or closely adjacent to the sealing position. It has been found that also such restriction causing a substantial local reduction of the width of the discharge passage may increase the self-sealing effect of the bag or pouch. The restriction may have an unessential or a very small extension in the
35 axial direction of the discharge passage, or it may extend



along a substantial part of the length of the discharge passage. The discharge passage may be defined between a pair of spaced substantially parallel or non-parallel opposite heat sealed seams or other sheet interconnecting seams, and
5 the restriction may be defined by a projection extending transversely from one of the seams or by such projections extending against each other from the opposite seams.

The part of the storage chamber being adjacent to the discharge passage may be funnel-shaped which means that this
10 part of the storage chamber is defined by a pair of sealing lines converging in the direction of the junction position. Alternatively, the part of the storage chamber being adjacent to the junction point may be defined by sealing lines extending substantially at right angles to the axis of the discharge
15 charge passage as disclosed in the above Norwegian patent No. 96,943. However, the storage chamber may at least at one side and preferably at both sides of the fluid discharge passage and adjacent to the junction position be defined by a sealing line defining with the longitudinal axis of the discharge
20 passage an angle which is smaller than 90° .

As mentioned above, the storage chamber may adjacent to the junction position be defined by sealing lines converging towards the junction position so as to define a funnel-like shape opening into the discharge passage. In such case, the
25 said restriction is preferably positioned substantially at the intersection of the extensions of the converging sealing lines.

The storage chamber may comprise a main chamber and an outlet chamber or metering chamber which are interconnected by a
30 connecting passage, and the discharge passage may then communicate with the outlet chamber or metering chamber at a position substantially opposite to the connecting passage. When such a bag or pouch is arranged such that the discharge passage is directed downwardly, a liquid fluid contained in
35 the bag or pouch will flow from the main chamber into the



metering chamber or outlet chamber through the connecting passage so as to refill the metering chamber when a liquid product has been dispensed from the metering chamber by manual operation of the discharge passage or by means of a
5 suitable dispenser, e.g. as that disclosed in applicants' co-pending Danish patent application No. 0244/94.

The storage chamber defined in the bag or pouch according to the invention may comprise two or more aligned chamber sections, and adjacent chamber sections may be interconnected by
10 a communication passage. The bag or pouch may then have a segmented, hose-like shape. This embodiment is especially advantageous when the bag or pouch is used to contain air or another gas. Such an air-filled bag may, e.g., be used as a shock-absorber when packing fragile objects. Also other
15 embodiments of the bag according to the invention may be used for such purpose.

The bag or pouch according to the invention may be used for containing any kinds of gaseous or liquid products, such as air, gaseous and liquid disinfectants, alcohol and other
20 liquid solvents, soaps, shampoos, creams, and other liquid cosmetics, drinks, ketchup, mustard and other liquid food-stuffs. It is possible to discharge a product contained in the bag or pouch according to the invention by manipulating the discharge passage and the adjacent part of the storage
25 chamber. This may be done manually or by means of a special dispenser as mentioned above. In any case it is desirable to have the bag or pouch filled with the product arranged such that the fluid discharge passage depends freely. Therefore, the bag or pouch preferably comprises means for suspending
30 the bag or pouch such that the fluid discharge passage and at least the adjacent part of the storage chamber may depend freely from the suspension means. Such suspension means may, e.g., comprise a pair of through openings defined in the opposite walls at opposite sides of the connecting passage.
35 The bag or pouch may then be suspended from a pair of supporting pins or hooks extending through the openings, and the



mutual distance between such supporting pins may be smaller than the distance between the through openings of the pouch whereby it may be ensured that liquid fluid may flow freely from the main chamber into the metering chamber via the
5 connecting passage.

- In addition to the fluid discharge passage the bag or pouch may comprise at least one further self-sealing passage extending between the storage chamber and the ambient atmosphere and being defined between the opposite walls of the pouch.
- 10 One fluid may then be introduced into the storage chamber via said further self-sealing passage while another fluid is discharged through the discharge passage. As an example, a surgical instrument may be contained in the storage chamber and air may be evacuated from the storage chamber while a
15 gaseous disinfectant, which may be less poisonous than ethylene oxide, is introduced into the storage chamber via the other self-sealing passage. A bag or pouch having only one discharge passage may also be used for packing surgical instruments under aseptic conditions.
- 20 Similarly, when the bag or pouch is used for containing an infusion liquid the discharge passage may be connected to a cannula inserted into the patient, and metered amounts of a medicament may at the same time currently be fed into the storage chamber via said further self-sealing passage.
- 25 The opposite walls of the bag or pouch may be made from identical sheet material, such as a plastic film being of the same thickness. The opposite walls may, however, also be made from different sheet materials and/or be of different thicknesses. As an example, the opposite walls may be made
30 from polyethylene films having a thickness of 50-250 μ or other plastic films having a similar stiffness. One of or both of the opposite walls may be formed by a plastic film consisting of two or more layers of different plastic materials which have been co-extruded or laminated.



According to the invention the bag or pouch may comprise a restriction defined in the discharge passage at a position having a distance from the outlet end of the discharge passage being less than half the axial length of the discharge passage. This restriction may be the only restriction of the discharge passage or may be in addition to a restriction formed in the inlet end portion of the discharge passage at the sealing position. The restriction formed in the outlet end portion of the discharge passage tends to counteract undesired dripping of liquid product from the free outer end portion of the discharge passage when a product discharge operation has been terminated.

Usually, it is desired that the width of the discharge passage should be almost as large as possible in order to facilitate product discharge from the bag or pouch. However, at the same time a reliable self-sealing effect of the discharge passage should be ensured. The largest possible width of the discharge passage is dependent on various parameters, such as surface tension, adhesion characteristics, and viscosity characteristics of the fluid, the material from which the opposite flexible walls of the pouch are made, the stiffness and surface characteristics of such walls, and the shape or contour of the discharge passage and of the adjacent part of the storage chamber, etc. The width of the discharge passage may vary along the length of the passage. However, in most cases the minimum width of the discharge passage, such as the width of the passage at a restriction, is between 2 and 100 mm, preferably between 3 and 30 mm dependent i.a. on the above parameters.

In order to ensure good self-sealing of the discharge passage the axial length thereof is preferably at least $1\frac{1}{2}$ times the minimum width of the discharge passage and more preferably about two times such minimum width. In order to efficiently prevent any leakage from a bag or pouch filled with a fluid product, the discharge passage may have a closed outlet end adapted to be cut by the user of the product so as to open

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the discharge passage. As described in more detail below bags or pouches according to the present invention may have storage chambers and discharge passages defined therein with a great number of symmetrical or non-symmetrical shapes. In the preferred embodiment, however, the bag or pouch and the contours of the storage chamber and the discharge passage are substantially symmetrical about the longitudinal axis of the discharge passage.

As explained above, the discharge passage may be shaped in many different ways with various kinds of restrictions and with a width varying substantially along the length of the passage. Preferably, however, the fluid discharge passage defines a substantially rectilinear flow path extending from the junction position to the outlet opening of the discharge passage. This means that it is possible to insert a product filling or a product discharge tube into the discharge passage so that such tube extends from the outlet opening of the passage through the axial length of the discharge passage and into the storage chamber, whereby it is possible to fill and/or empty the bag or pouch via such tube.

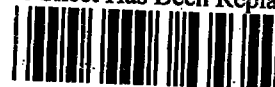
The invention will now be further described with reference to the drawings, wherein

Fig. 1 is a plan view of a first embodiment of the pouch or bag according to the invention shown in its empty and flat condition,

Figs. 2-28 show the discharge passage and the adjacent part of the storage chamber of a variety of different embodiments of the bag or pouch according to the invention,

Figs. 29 and 30 are plan views showing two further embodiments of the bag or pouch according to the invention in which the storage chambers are divided into interconnected chamber sections, and

Fig. 31 is a diagrammatic sectional view showing a bag or pouch in a filled, distended condition.



The drawings illustrate bags or pouches each made from a pair of oppositely arranged flexible side walls, such as plastic films, which may be monoextrudates, coextrudates, and/or laminates. The opposite flexible side walls of the bag or pouch may be formed by the opposite side walls of a collapsed hose or tube section, which is heat sealed or otherwise sealingly interconnected at its opposite ends (Fig. 1). Alternatively, the bag or pouch may be made from a pair of separate, superposed flexible films or sheets, which have been heat sealed or otherwise sealingly interconnected along the contour of the pouch, Figs. 2-30. In the drawings such heat sealed or otherwise sealingly interconnected areas have been cross-hatched.

The pouch shown in Fig. 1 has an upper marginal heat sealed area 10 having formed therein an upper suspension opening 11 positioned on a central symmetry axis 12 of the pouch. A pair of lower oppositely arranged heat sealed areas 13 are shaped so as to divide the inner space of the pouch into an upper main chamber and a lower, smaller metering chamber or outlet chamber 15. The chambers 14 and 15 are interconnected by an interconnecting passage 16, and the outlet chamber 15 communicates with a downwardly directed discharge passage or spout 17. A pair of lower suspension openings 18 are formed in the lower heat sealed areas 13 and are positioned immediately above the outlet chamber 15 on either side of the symmetry axis 13. The discharge passage 17 has a restriction 24 close to the outlet end thereof. This restriction is formed by a pair of oppositely directed extensions 19 of the heat sealed areas 13. When a gaseous or liquid fluid has been filled into the main chamber 14 and the outlet chamber 15 of the bag or pouch shown in Fig. 1 so that the opposite flexible walls are distended by the inner fluid pressure, the discharge passage 17 is effectively sealed due to the shape of the discharge passage 17 and the adjacent part of the outlet chamber 15 as explained in more detail below.

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The bag or pouch shown in Fig. 1 is adapted to be used in a dispenser of the type disclosed in applicants' co-pending Danish patent application No. 0244/94. The oppositely directed extensions 19 in the lower part of the discharge passage 17 tend to prevent undesired dripping of product from the discharge passage, when an amount of liquid product has been discharged from the pouch via the discharge passage or spout 17.

Figs. 2-28 diagrammatically illustrate a variety of possible alternative shapes of the discharge passage or spout 17 and of an adjacent storage chamber part 20 which may be a chamber corresponding to the outlet chamber 15 in Fig. 1 communicating with a main chamber 14, or may be a single storage chamber.

Fig. 2 illustrates a bag or pouch having a straight discharge passage 17 defined between a pair of substantially parallel sealing lines. The discharge passage 17 communicates with the storage chamber 20 at a junction position 21. As shown in Fig. 2, the storage chamber 20 extends beyond that junction position 21 in the direction of the outlet end 22 of the discharge passage. Thus, adjacent to the discharge passage 17 the storage chamber 20 is defined by a pair of sealing lines 23 each defining together with the axis 12 an angle α which is an acute angle, whereby the self-sealing effect of the discharge passage is substantially improved.

The embodiments shown in Fig. 3-6 substantially correspond to the embodiment shown in Fig. 2 with the exception that in Figs. 3-6 the discharge passage 17 has been provided with restrictions 24. Thus, in Fig. 3 the discharge passage 17 has a restriction defined by oppositely directed extensions 19 of the heat sealed areas. In the embodiment shown in Fig. 4 the discharge passage 17 has three restrictions, each of which is defined by one extension 19, only. Fig. 5 shows an embodiment in which the discharge passage 17 has a single restriction extending along a substantial axial length of the passage 17

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at the junction position 21, and in Fig. 6 a restriction 24 is formed at the junction position as well as adjacent to the outlet end 22 of the discharge passage 17.

In the embodiments shown in Figs. 7-12 the discharge passage 17 is at least partly defined by converging and/or diverging opposite sealing lines so that the width of the discharge passage varies continuously at least along part of the axial length of the discharge passage. The discharge passage 17 of the embodiment shown in Fig. 7 has restrictions 24 defined at the junction position 21 and adjacent to the outlet end 22 of the passage 17. In the embodiment shown in Fig. 8 restrictions 24 are defined by means of extensions 19 at the junction position 21 and adjacent to the outlet end 22 of the passage 17. Furthermore, a restriction 24 is defined at the middle of the discharge passage 17.

In the embodiment of Fig. 9 two restrictions 24 are formed in the discharge passage 17 by means of extensions 19 of the heat sealed area. In the embodiment shown in Fig. 10 only one restriction 24 is defined at the middle of the discharge passage 17, and in Figs. 11 and 12 restrictions 24 are defined at the junction position 21 and at the outlet end 22 of the discharge passage 17, respectively. In Fig. 12 the discharge passage 17 is partly defined by opposite, curved sealing lines, and in Fig. 13 the discharge passage 17 is stepped so that two restrictions 24 are formed by the second and third step, respectively.

The embodiment shown in Fig. 14 defines a discharge passage 17 having a restriction 24 defined at the junction position 21 by a pair of opposite extensions 19 of the sealing area, and these extensions also define bottom sealing lines of the storage chamber 20. A restriction 24 is also defined at the outlet end 22 of the discharge passage 17.

Fig. 15 illustrates an embodiment in which the part of the storage chamber 20 adjacent to the junction position 21 is



defined by converging sealing lines, and a restriction 24 is defined by extensions 19 in the discharge passage 17 at a position adjacent to the intersection point of the extensions of such sealing lines.

- 5 In the embodiment shown in Fig. 16 the discharge passage 17 is shaped like a chamber having a square outline. The chamber or passage inlet and outlet define restrictions 24. The embodiment shown in Fig. 17 is similar to that shown in Fig. 2 with the exception that in Fig. 17 the storage chamber 20
10 is defined by opposite side seams converging in the direction of the discharge passage 17.

- Figs. 18-21 show embodiments in which the inner end of the discharge passage 17 is defined by heat sealing lines crossing a heat sealing line defining the storage chamber 20,
15 whereby storage chamber pockets 27 are defined on both sides of the inlet end of the discharge passage 17. In Figs. 18 and 19 the discharge passage 17 has substantially the same width along the length thereof while the discharge passage 17 is funnel shaped in the embodiment shown in Fig. 20. In Fig. 21
20 the storage chamber 20 is funnel-shaped.

The embodiment shown in Fig. 22 is similar to that shown in Fig. 15. However, the extensions 19 are differently shaped and positioned.

- The embodiment shown in Fig. 23 is similar to the embodiments
25 shown in Figs. 18-20. However, in Fig. 23 the discharge passage 17 is positioned completely inside the sealing line 26 defining the adjacent part of the storage chamber 20. In the embodiment shown in Fig. 24 the discharge passage 17 also extends inwardly beyond the storage chamber sealing line 26,
30 and the inner end of the discharge passage is defined by relatively large heat sealed areas 28 which may be relatively stiff. Such relatively stiff areas at the inlet end of the discharge passage 17 may further improve the self-sealing effect of the discharge passage.



The embodiment shown in Figs. 25 and 26 are similar to the embodiments shown in Figs. 15 and 22, the difference being that in Figs. 25 and 26 the opposite sealing lines of the storage chamber 20 are curved and that the restriction 24 is positioned adjacent to the outlet end 22 of the discharge passage 17.

Fig. 27 shows an embodiment in which the outlet passage is funnel-shaped, and a restriction 24 is defined at the outlet end 22 of the discharge passage. This restriction is formed by opposite heat sealed areas 29 at the outlet end of the passage. The embodiment shown in Fig. 28 corresponds to those shown in Figs. 15, 21, and 22 with the exception that in Fig. 28 the restriction 24 is defined at the outlet end 22 of the discharge passage 17.

Figs. 29 and 30 show embodiments in which the storage chamber has been divided into chamber sections 30 by pairs of opposite, transversely extending heat sealed areas 31 forming connecting passages 32 therebetween. When a pressure is applied to the outer walls of a chamber segment 30 fluid contained therein may escape into adjacent chamber segments via the connecting passages. Such fluid flow between the chamber segments 30 may be restricted more or less by properly choosing the width of the connecting passages 32. Fluid flow between adjacent chamber segments 30 may be further restricted by shaping the heat sealed areas 31 as shown in Fig. 30. The connecting passages 32 may be considered a fluid discharge passage where the angle α (vide Figs. 2 and 3) defined between the border lines of the adjacent chamber segment 30 and the longitudinal axis of the pouch is acute, as will be described in more detail below.

Fig. 31 diagrammatically shows a central section taken at right angles to the opposite walls of a bag or pouch of the type described above. Fig. 31 shows the discharge passage or spout 17 and the adjacent part of the bag or pouch when distended by an inner fluid pressure so that outer shoulders



33 are formed adjacent to the discharge passage or spout 17. These shoulders define an angle β together with a line 24 extending at right angles to the central symmetry axis 12 of the bag or pouch. As mentioned above, it has been found that
 5 the angle β indicates whether the pouch or bag has good self-sealing characteristics or not. Thus, the self-sealing effect is increased when the angle β is diminished.

EXAMPLE 1

A test was made to demonstrate the interrelationship between
 10 the self-sealing effect of the discharge passage 17 and the angle α (shown in Figs. 2 and 3) and the angle β (shown in Fig. 31). A bag of the type shown in Fig. 1 was used where the outlet passage 17 and the adjacent part of the outlet chamber 15 had a shape substantially as shown in Fig. 3. The
 15 opposite walls of the bag or pouch were made from a laminate of two outer layers, each being a 45μ polyethylene film and an inner core layer of a 12μ polyester film. The width w of the main chamber 15 was 40 mm, the width d of the discharge passage 17 was 10 mm, and the axial length l of the discharge
 20 passage was 20 mm. Tests were made for different values of the angle α ranging from 10° to 180° , and the corresponding values of the angle β were measured in a plane extending through the axis 12 and at right angles to the pouch walls (at right angles to the plane of the drawing in Fig. 1). When
 25 measuring the value of the angle β the bag or pouch was filled with pure tap water, and the inner water pressure was gradually increased to a value at which the fluid discharge passage 17 was just about to open, and the value of the angle β was measured at that inner pressure.

30 The following results were obtained:

	α	β	
	180	80	
	170	75	
35	160	75	not self-sealing
	150	65	
	140	60	
	130	65	

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	α	β	
5	120	40	accidentally self-sealing
	110	35	
	100	25	
	90	20	
10	80	20	very good self- sealing characte- ristics
	70	15	
	60	10	
	50	5	
15	40	20	extremely good self- sealing characteris- tics
	30	20	
	20	30	
	10	45	

The above test results show that the self-sealing characteristics of a pouch as that shown in Fig. 1 may be substantially improved by reducing the angle α .

EXAMPLE 2

Bags or pouches of the type shown in Fig. 1 in which the walls were made from a flexible foil or film of polyethylene having a thickness of 50-80 μ and from a coextrudate of polyethylene, ethylene vinyl alcohol and polyethylene with a total thickness of 50-80 μ , respectively, was made. The angle α was 60-80°, the width d of the discharge passage 17 was 3-5 mm, and the length l of the discharge passage was 10-12 mm. The bag showed good self-sealing characteristics with contents of water, soap water, alcohol and air.

EXAMPLE 3

A bag or pouch of the type shown in Fig. 1 was made from a laminate of 90 μ polyethylene and 12 μ polyester. The angle α was 70° and the width d of the discharge passage 17 was 8 mm and the length l of the discharge passage was 16 mm. The bag was used for containing liquid soap and shampoo and showed very good self-sealing characteristics. In order to prevent undesired dripping of the product subsequent to a discharge



process, extensions 19 of the type shown in Fig. 1 were positioned about 5 mm from the outlet end 22 of the discharge passage.

It should be understood that various alterations, combinations and changes may be made within the scope of the present invention. An important feature is, however, that a storage chamber pocket is defined at least at one side of the inlet end portion of the fluid discharge passage and/or that at least one restriction is defined in the fluid discharge
10 passage.

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CLAIMS

1. A bag or pouch made from a pair of flat walls formed by
flexible sheet material and sealingly interconnected so as to
define between the opposite walls a storage chamber
(14,15;20) for containing a fluid and a fluid discharge
passage (17) communicating with the storage chamber at a
junction position (21) and arranged outside the storage
chamber, the bag or pouch being such that the opposite wall
parts defining the discharge passage are moved into mutual
sealing contact at at least one sealing position when fluid
has been filled into the storage chamber,
c h a r a c t e r i z e d in that at least at one side of
the fluid discharge passage (17) and adjacent to the junction
position (21) the storage chamber (14,15;20) is defined by a
sealing line (23,25) which together with the longitudinal
axis (12) of the discharge passage (17) defines an angle (α)
which is smaller than 90° so that adjacent to the discharge
passage (17) the storage chamber (14,15;20) extends beyond
the junction position (21) in a direction towards an outlet
end (22) of the discharge passage.

2. A bag or pouch made from a pair of flat walls formed by
flexible sheet material and sealingly interconnected so as to
define between the opposite walls a storage chamber
(14,15;20) for containing a fluid and a fluid discharge
passage (17) communicating with the storage chamber, the bag
or pouch being such that the opposite wall parts defining the
discharge passage are moved into mutual sealing contact at at
least one sealing position when fluid has been filled into
the storage chamber,
c h a r a c t e r i z e d in that at least one restriction
(24) is defined in the discharge passage (17) so as to cause
a substantial local restriction of the width of the discharge
passage.

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3. A bag or pouch according to claim 1, wherein at least one restriction (24) is defined in the discharge passage (17) so as to cause a substantial local restriction of the width of the discharge passage.
- 5 4. A bag or pouch according to claim 2 or 3, wherein the restriction (24) is defined in the discharge passage (17) at or closely adjacent to the sealing position.
5. A bag or pouch according to any of the claims 1, 3 or 4, wherein said angle (α) is defined at each side of the fluid
10 discharge passage (17).
6. A bag or pouch according to any of the claims 2-4, wherein the part of the storage chamber (20) adjacent to the junction position (21) is defined by sealing lines converging towards the junction position, the restriction (24) being positioned
15 substantially at the intersection of the extensions of the converging sealing lines.
7. A bag or pouch according to any of the claims 1-6, wherein the storage chamber comprises a main chamber (14) and an outlet chamber or metering chamber (15) which are interconnected by a connecting passage (16), the discharge passage
20 (17) communicating with the outlet chamber (15) at a position substantially opposite to the connecting passage (16).
8. A bag or pouch according to any of the claims 1-7, wherein the storage chamber (20) comprises two or more aligned chamber sections (30), adjacent chamber sections being interconnected by a communication passage (32).
25
9. A bag or pouch according to any of the claims 1-8, further comprising means (13, 18) for suspending the bag or pouch such that the fluid discharge passage (17) and at least the
30 adjacent part of the storage chamber (14, 15; 20) may depend freely from the suspension means.

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10. A bag or pouch according to claims 7 and 9, wherein the suspension means comprises a pair of through openings (18) defined in the opposite walls (13) at opposite sides of the connecting passage (16).
- 5 11. A bag or pouch according to any of the claims 1-10, wherein at least one further self-sealing passage extending between the storage chamber and the ambient atmosphere is defined between the opposite walls of the pouch.
12. A bag or pouch according to any of the claims 1-11,
10 wherein the opposite walls are made from different sheet materials and/or are of different thicknesses.
13. A bag or pouch according to any of the claims 1-12, wherein the opposite walls are polyethylene films having a thickness of 50-250 μ , or other plastic films having a similar
15 stiffness.
14. A bag or pouch according to any of the claims 1-13, further comprising a restriction (24) defined in the discharge passage (17) at a position having a distance from the outlet end (22) of the discharge passage (17) being less than
20 half the axial length of the discharge passage and preferably 0-10 mm from the outlet end of the discharge passage.
15. A bag or pouch according to any of the claims 1-14, wherein the minimum width of the discharge passage (17) is between 2 and 100 mm, preferably between 3 and 30 mm.
- 25 16. A bag or pouch according to any of the claims 1-15, wherein the axial length of the discharge passage (17) is at least 1½ times the minimum width of the discharge passage.
17. A bag or pouch according to any of the claims 1-16,
30 wherein the discharge passage (17) has a closed outlet end adapted to be cut so as to open the discharge passage.





18. A bag or pouch according to any of the claims 1-17 filled with a gaseous fluid or a liquid fluid of low viscosity.
19. A bag or pouch according to any of the claims 1-18,
which is substantially symmetrical about the longitudinal
5 axis (12) of the discharge passage.
20. A bag or pouch according to any of the claims 1-19,
wherein the fluid discharge passage (17) defines a substantially rectilinear flow path extending from the junction position to the outlet opening of the discharge passage.

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