



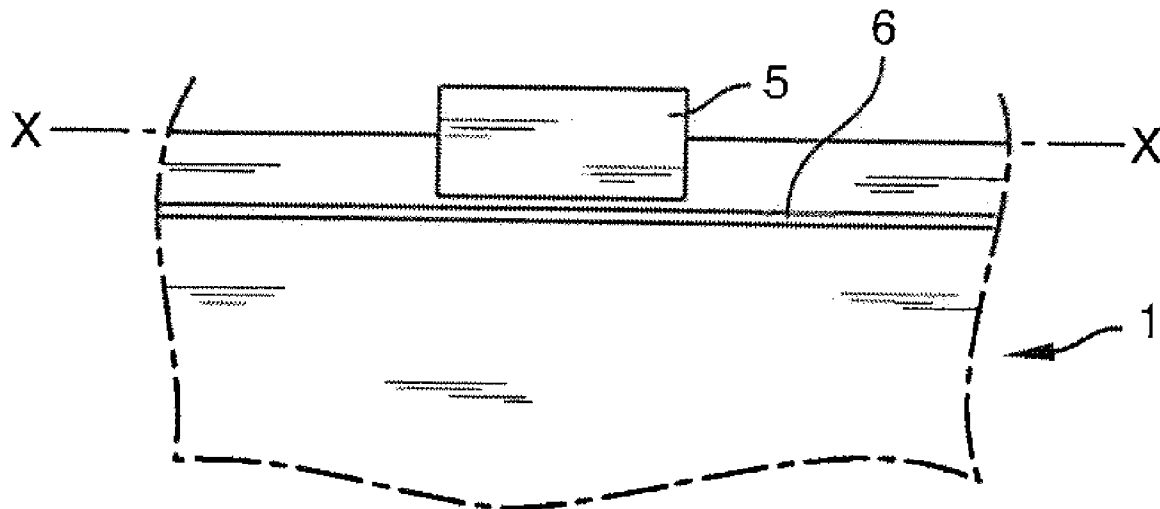
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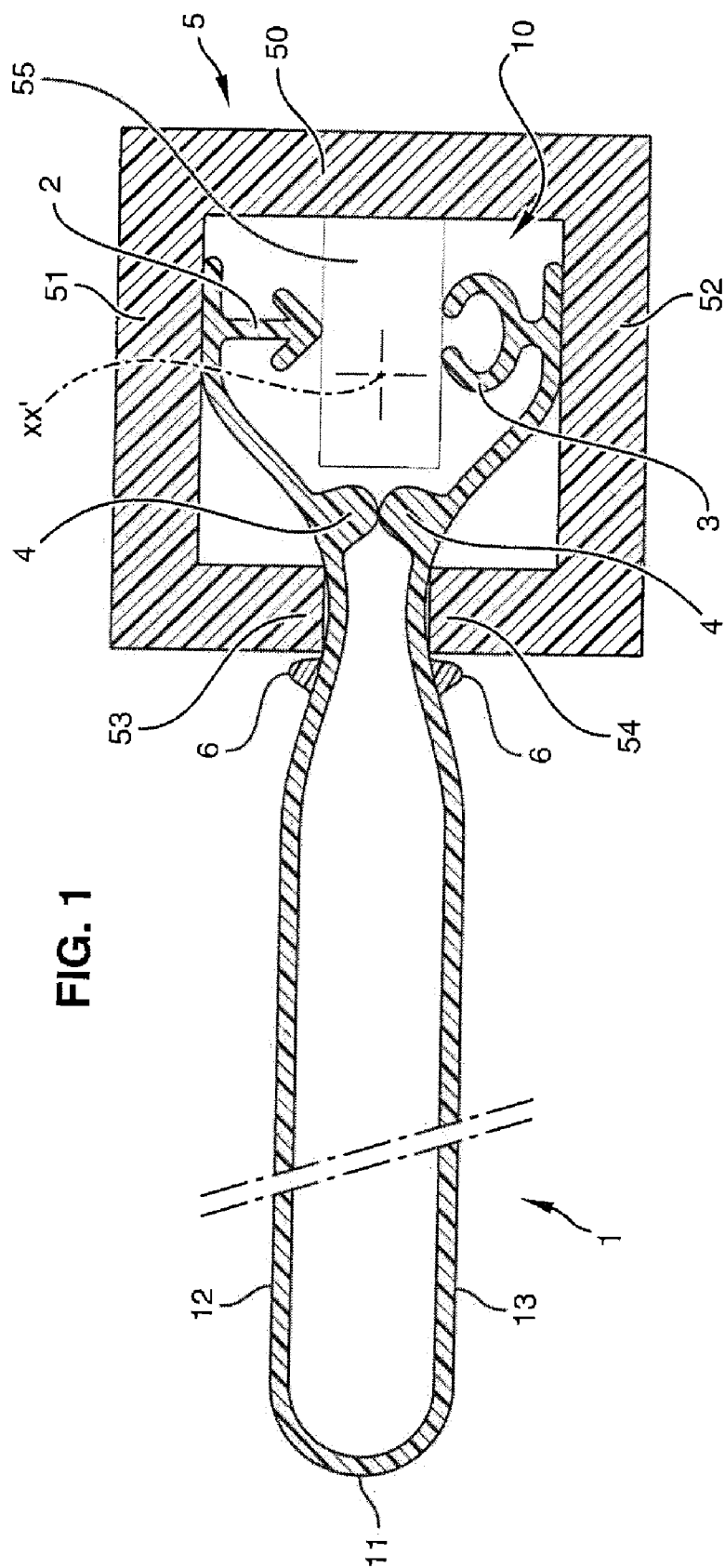
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WASHINGTON, DC 20007 (US)(57) **ABSTRACT**(73) Assignee: **S2F FLEXICO**(21) Appl. No.: **12/275,033**(22) Filed: **Nov. 20, 2008**(30) **Foreign Application Priority Data**

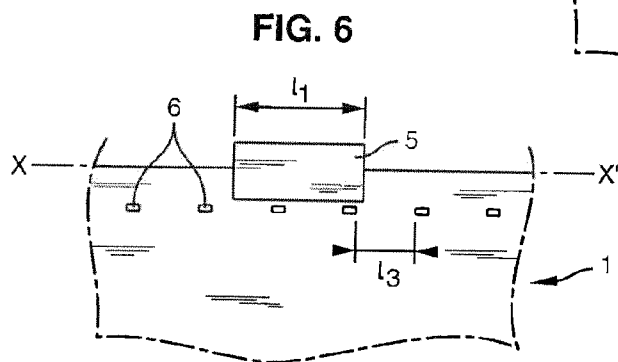
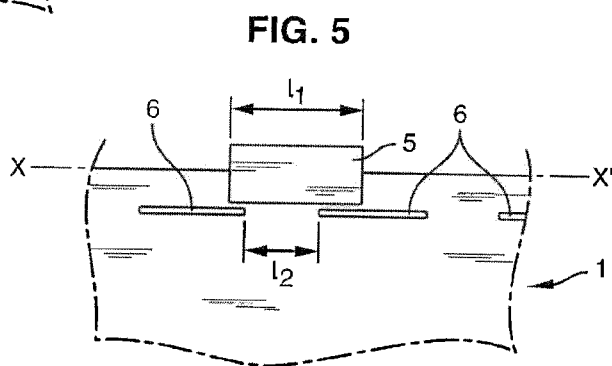
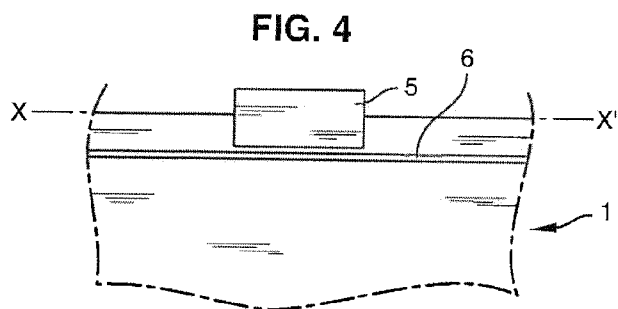
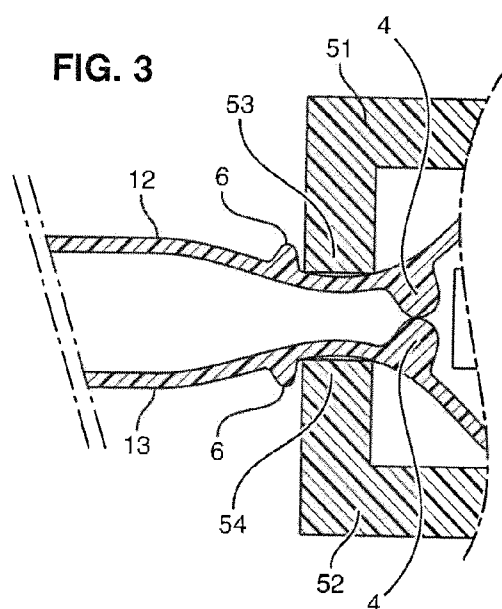
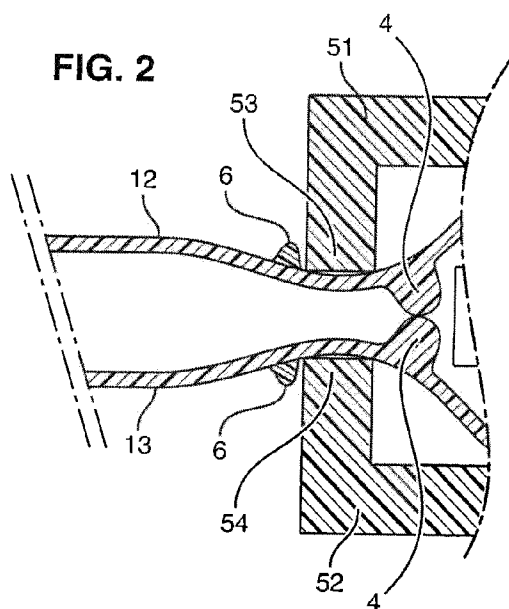
Nov. 21, 2007 (FR) 0708161

The present invention relates to a bag (1) including:
two generally parallel sheets (12, 13);
matching closing profiles (2, 3) fixed on these sheets (12, 13);
a slider (5) for actuating the profiles (2, 3), this slider (5) comprising flanks (51, 52) each inner surface of which bears a boss (53, 54).

This bag is remarkable by the fact that said sheets (12, 13) include on their outer faces, and outside said slider (5), abutment means (6) capable of immobilizing said sheets (12, 13) relatively to said slider (5) along a direction generally perpendicular to the displacement axis (X-X') of the slider (5).







BAG INCLUDING CLOSING PROFILES ACTUATED BY A SLIDER

[0001] The present invention relates to the field of bags comprising matching closing profiles respectively actuated upon opening and closing by a slider.

[0002] These bags have already been very helpful. Indeed, the sliders facilitate the opening and closing of the bags, so that their presence is strongly appreciated by elderly or partially sighted persons.

[0003] In the past, one was confronted with a sealing defect of these bags. In particular, most of these bags did not have a total seal in the position for closing the profiles. This sealing defect was due to the fact that the profiles remain separate in front of the slider.

[0004] Now, a perfect seal is required in many applications, notably, but without any limitation, for bags used for freezing food products.

[0005] In document WO-A-99/65353, a bag structure is described with which this sealing defect may be overcome.

[0006] Thus, in a particular embodiment, a bag is described, which includes:

[0007] two generally parallel sheets forming its main walls,

[0008] matching closing profiles respectively fixed on these sheets,

[0009] a slider for actuating the profiles upon closing and opening, this slider comprising flanks, each inner surface of which bears a boss directed towards the opposite flanks, so that the sheets forming the main walls converge towards each other, said profiles towards said bosses.

[0010] The sealing problem according to the aforementioned document is solved by the fact that parallel to the profiles, between the sheets and at the mouth of the bag, additional raised relief means are provided, positioned on the inside of the closing profiles, designed to provide a seal by forming a barrier between the sheets in the closure position of the bag, these additional means being adapted so as to be urged towards their sealing position by the slider when the latter is moved towards the closure position of the bag.

[0011] Therefore, the relative seal provided by the matching profiles is completed by that provided by the additional raised relief means.

[0012] Such a structure generally gives satisfaction. However, it is perfectible insofar that it is necessary to make sure that the slider is properly positioned relatively to the additional raised relief means, so as to make sure that the sheets are nipped at a distance allowing good contact of these additional means.

[0013] In other words, situations occur in which either one of both sheets of the bag undergoes a slight translation in a direction perpendicular to the displacement axis of the slider, so that the aforementioned additional means are no longer facing the other sheet. It is easily understood that a sealing defect then results from this.

[0014] Even in the absence of said additional means, the slight translation poses a problem.

[0015] The present invention is therefore directed to solving this difficulty.

[0016] A secondary object of the invention is to fulfill this purpose, without changing the general structure of the aforementioned bag.

[0017] The invention therefore relates to a bag including:

[0018] two generally parallel sheets forming its main walls;

[0019] matching closing profiles respectively fixed on these sheets;

[0020] a slider for actuating the profiles upon closing and opening, this slider comprising flanks, each inner surface of which bears a boss directed towards the opposite flank, so that the sheets forming the main walls converge towards each other, said profiles towards said bosses.

[0021] According to the invention, said sheets include on their outer faces and on the outside of said slider, abutment means capable of immobilizing said sheets relatively to said slider along a direction generally perpendicular to the displacement axis of the slider.

[0022] By these abutment means, proper positioning of the sheets and of the slider is performed so as to achieve proper nipping of the sheets.

[0023] According to other advantageous but non-limiting features:

[0024] additional raised relief means parallel to said profiles, between said sheets and at the mouth of the bag, are positioned on the inside of the closing profiles, designed in order to provide the seal by forming a barrier between the sheets in the closed position of the bag, these additional means being adapted so as to be urged towards their sealing position by the slider when the latter is moved towards the closure position of the bag, and the abutment means are located in the vicinity of said bosses;

[0025] the bag includes additional abutment means located on said sheets, inside said slider, i.e. on the side of its inner space;

[0026] said abutment means consist of a bulge which protrudes at the surface of each of said sheets and which extends parallel to the displacement axis of the slider;

[0027] said bulge is continuous;

[0028] said bulge is discontinuous, i.e. formed by a series of sections, the largest interval between two neighboring sections being smaller than the longitudinal dimension of said slide;

[0029] said abutment means are made with said sheets in the same material;

[0030] said abutment means are components added to said sheets.

[0031] Other features and advantages of the present invention will become apparent upon reading the following detailed description of certain preferred embodiments.

[0032] This description will be made with reference to the appended drawings wherein:

[0033] FIG. 1 is a schematic sectional view of an embodiment of the bag of the invention;

[0034] FIGS. 2 and 3 are detailed and enlarged views of the bag structure of FIG. 1;

[0035] FIGS. 4, 5 and 6 are partial front views of a bag according to the invention, illustrating several embodiments of the abutment means.

[0036] The bag illustrated in FIG. 1 has a structure generally known from document WO-A-99/65353 which was commented above.

[0037] This bag 1 includes a mouth 10 and a bottom 11. It consists of two main plastic sheets referenced as 12 and 13.

[0038] These sheets are connected together at the bottom 11. In the embodiment illustrated here, both sheets are inte-

gral with each other from the start. However, in an embodiment not shown, both of these sheets may be initially separate, and then superposed and attached to each other when manufacturing the bag.

[0039] At the mouth 10, both sheets 12 and 13 are provided with matching closing profiles 2 and 3.

[0040] These profiles may be the object of many embodiments. The invention is not limited to the specified embodiment illustrated in FIG. 1.

[0041] In the case illustrated here, the profiles 2 and 3 are of the male and female type respectively, as this is well-known to one skilled in the art. However, the invention may apply to other types of profiles, notably of the type with matching hooks.

[0042] In the embodiment of FIG. 1, the profiles 2 and 3 are made by extrusion with the sheets 12 and 13 which form the bag.

[0043] However, in an alternative embodiment not shown, these matching profiles may be borne on supporting webs added onto the sheets 12 and 13, for example by hot welding or adhesive bonding.

[0044] As mentioned above, the bag further includes a slider 5 adapted for actuating the profiles 2 and 3 upon closing and opening.

[0045] This slider may be the object of many standard embodiments. A typical slider example is described in document EP-A-0 479 661. In the embodiment shown here, the slider made in plastic material, includes two side wings 51 and 52 (or flanks), connected together at a base 50 and which define with an elongated central sole 55, two convergent passageways for the engageable matching closing profiles 2 and 3.

[0046] Thus, when the direction of relative displacement of the slider 5 with respect to the closing profiles 2 and 3 tends to displace the slider by forcing engagement of the profiles, the bag is closed. When the slider 5 is displaced in the reverse direction, the bag is opened.

[0047] It will be noted that the base of the flanks 51 and 52 of the slider extends inwards through bosses 53 and 54 directed towards each other.

[0048] Because of the presence of the bosses, the sheets forming the main walls of the bag converge towards each other, profiles 2 and 3 towards (in the direction of) these bosses.

[0049] In other words, from the profiles, the main walls converge towards in each other in the direction of the inner space of the bag.

[0050] The bag moreover includes additional raised relief means 4 which are designed in order to provide the seal by forming a barrier between the sheets 12 and 13, in the closure position of the bag. They are positioned inside the closing profiles.

[0051] In other words, these means 4 are placed on the inner face of each sheet, facing the flanks 51 and 52 of the slider 5 so as to be urged towards their sealing position by the slider when the latter is moved towards the sealing position.

[0052] More specifically, these means 4 each consists of bulge of plastic material which extends parallel to the displacement axis X-X' of the slider.

[0053] To provide the seal, the bulges extend exactly facing each other.

[0054] But, as discussed above, it occurs that one of the sheets 12 and 13 of the bag undergoes a slight translation

perpendicular to the displacement direction of the slider, so that the bulges 4 are no longer strictly facing each other.

[0055] A sealing defect then results from this.

[0056] This is the reason why the sheets 12 and 13 include on their outer face, in the vicinity of the bosses 53 and 54 of the slider, abutment means 6 capable of immobilizing the sheets 12 and 13 relatively to the slider 5, along a direction generally perpendicular to the displacement axis X-X' of the slider, by contact between the bosses 53 and 54 and these abutment means (6).

[0057] In the embodiment shown in FIGS. 1-3, the abutment means consist of a bulge of material which extends all along the transverse stretch of the bag.

[0058] In the embodiment of FIG. 2, these are bulges added on the sheets 12 and 13, whereas in FIG. 3, these bulges are extruded with the sheets 12 and 13.

[0059] By the presence of these abutment means, the positioning of the sheets relatively to the slider is <<blocked>> so that the additional sealing means 4 are perfectly facing each other and completely provide their sealing function.

[0060] Moreover, because of the presence of the profiles 2 and 3 in the sheets 12 and 13, these regions of the bag are rigid or not very deformable. Now, the presence of the abutment means 6 contributes to bringing the sheets 12 and 13 closer to each other.

[0061] In an embodiment not shown, it may be contemplated to do without the presence of the additional sealing means 4.

[0062] Different embodiments of the abutment means are illustrated in FIGS. 4-6. In order to facilitate reading of these figures, the abutment means (6) are illustrated slightly separate from the slider 5. However, in practice, they are positioned very close to this slider.

[0063] In the embodiment of FIG. 4, the abutment means consist of a continuous bulge which extends parallel to the displacement axis X-X' of the slider.

[0064] In the embodiment illustrated in FIG. 5, this bulge, parallel to the X-X' axis is discontinuous and formed with a series of sections, the largest interval l_2 between two neighboring sections being smaller than the longitudinal dimension l_1 of the slider 5.

[0065] Thus, regardless of the positioning of the slider, the latter is always located facing at least one profile.

[0066] Finally, in the embodiment of FIG. 6, the bulge 6 is also discontinuous and consists of a series of sections limited to their simplest expression, which means that they consist of points.

[0067] There again, the largest interval l_3 between two neighboring profiles is smaller than the longitudinal dimension l_1 of the slider.

[0068] The sheets, closing profiles, additional sealing means and abutment means may be made in any suitable plastic material known to one skilled in the art.

[0069] Preferably, this is a polyolefin, very advantageously low or high density polyethylene, or even polypropylene.

[0070] In the embodiments illustrated in the appended figures, the abutment means 6 are located outside the slider 5.

[0071] However, provision of additional, identical or similar abutment means on the side of the inner space of the slider, on the sheets, may be contemplated. Thus, the bosses 53 and 54 are framed by the abutment means on their opposite sides.

1. A bag (1) comprising:

two generally parallel sheets (12, 13) forming main walls of the bag;

matching closing profiles (2, 3) respectively fixed on said sheets (12, 13);

a slider (5) for actuating the profiles (2, 3) upon closing and opening, said slider (5) comprising opposing flanks (51, 52), each inner surface of which bears a boss (53, 54) directed towards the opposite flanks, so that the sheets (12, 13) forming the main walls converge towards each other, said profiles (2, 3) towards said bosses (53, 54); wherein said sheets (12, 13) comprise on their outer faces and outside said slider (5), abutment means (6) capable of immobilizing said sheets (12, 13) relative to said slider (5) along a direction generally perpendicular to a displacement axis (X-X') of the slider (5).

2. The bag according to claim 1, further comprising, parallel to said profiles (2, 3), between said sheets (12, 13) and at the mouth (10) of the bag, additional raised relief means (4) positioned on the inside of the closing profiles (2, 3), designed to provide a seal by forming a barrier between the sheets (12, 13) in the closure position of the bag, said additional relief means (4) being adapted so as to be urged towards a sealing position by the slider (5) when the slider is moved towards the

closure position of the bag, and that said abutment means (6) are located in the vicinity of said bosses (53, 54).

3. The bag according to claim 1, further comprising additional abutment means (6) located on said sheets (12, 13) inside said slider (5), i.e. on the side of its inner space.

4. The bag according to claim 1, wherein said abutment means (6) comprises a bulge which protrudes at the surface of each of said sheets (12, 13) and which extends parallel to the displacement axis (X-X') of the slider.

5. The bag according to claim 1, wherein said bulge (6) is continuous.

6. The bag according to claim 4, wherein said bulge (6) is discontinuous, i.e. formed with a series of sections, the largest interval (l_2) between two neighboring sections being smaller than the longitudinal dimension (l_1) of said slider.

7. The bag according to claim 1, wherein said abutment means (6) are made with said sheets in the same material.

8. The bag according to claim 1, wherein said abutment means (6) are components added to said sheets.

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