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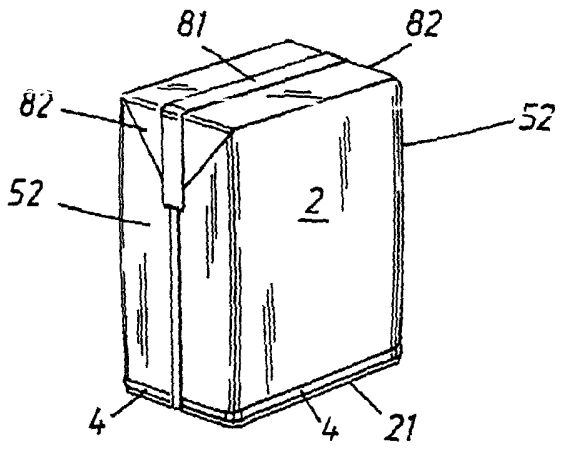
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(54) Title: A PACKAGE AND A METHOD OF FILLING THEREOF



(57) Abstract: A package comprising a bag of flexible sheet material which, prior to being filled, is laid flat and comprises two opposing side walls (2) substantially in contact with each other, which side walls are tightly sealed along opposing side edges (5), the bag also comprising a bottom wall (3) which is folded double and has two fields (31) facing each other received between the lower parts of the side walls (2), the parts of the end edges of the bottom wall being sealed together. At least in the vicinity of the fold line (32), the side edges of the bottom wall are joined to the side walls at their side edges and a string of springy, elastic material (4) is connected to a respective side wall (2) at its lower edge (21), along substantially the entire length of the lower edge of the side wall when the package is in its flat state, and the two material strings are separated from each other. The package is filled by inserting a substantially leaf-shaped pouring mouthpiece into the flat neck of the package and introducing liquid through the mouthpiece, after which the neck of the package is sealed. The packages may be joined together in a coherent chain of packages attached to each other at their side edges.

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A package and a method of filling thereof

The invention relates to a package of the type revealed in the preamble to the appended independent claim directed to a package and a chain of such packages.

The invention also relates to a method of filling such a package with fluid material.

An inconvenience with known packages, particularly for liquid, is that they require a relatively large amount of packaging material if they are to be stable. At the same time a problem arises in that, after use, the packages take up considerable space when being disposed of or handed in for recycling, etc.

It is known per se to package liquids in "pillow packages" of flexible material. However, one drawback with pillow packages of thin, flexible sheet material is that they have little or no stability, i.e. the packages cannot be placed in stable orientation on a horizontal surface, but tend to fall over which constitutes a particular inconvenience once the package has been opened for drinking.

FR 1597215 reveals a package which, when in flat, unfilled state comprises two opposing side walls substantially in contact with each other, and a double-folded bottom wall received between the lower parts of the side walls, the end edges of the bottom wall being sealed together, and the side walls being tightly sealed together along opposing, substantially parallel side edges. The bag in flat state may thus be considered to be formed from a lengthwise section of a continuous strip of plastic foil folded to have a W-shaped profile, the separated edges of the section being sealed with welding seams running transversely to the longitudinal direction of the continuous strip.

According to FR 1597215 the lower edge portion of each side wall has been flat-welded to the adjacent edge portion of the bottom wall so that

a fin is formed along the lower edge of each side wall. When the bag is filled, these fins form a belt around the bottom of the bag. In the filled package, when standing on a surface, the fin extends downwardly so that its free end lies slightly above the surface and that its connection to the bag/package is an equivalent distance above the surface. When the bag is filled the belt formed by the fin assumes a somewhat conical shape, which narrows towards the bottom. The attachment of the fin to the side wall has little rigidity and the fin itself has little rigidity. The fin/belt is thus unable to offer any substantial resistance to prevent the bag, filled with liquid and standing on a surface, from falling over.

Admittedly such packages can be stabilized by placing them in a holder of some type that offers the desired stability but this solution has not been widely used in practice.

One object of the invention is therefore to provide a package formed by a bag of flexible, thin sheet material that substantially lacks any rigidity of its own which bag, after filling with a material, particularly a fluid material and most particularly a liquid, is sealed to produce a pillow package.

The object of the invention is thus to provide a package that, although the sheet material of the package substantially lacks rigidity of its own, still gives the package when standing on a horizontal surface and filled with fluid material, such stability that it is able to stand on its own and, although with some caution, can be lifted to permit a user to drink from it or pour through the upper generally horizontal edge of the opened package.

The object is thus to eliminate the inconveniences mentioned.

The object is achieved by means of the invention.

The invention is defined in the appended independent package claim.

Embodiments of the invention are revealed in the appended sub-claims relating to the package.

The invention also comprises a method of filling a package in accordance with the invention with a fluid material, particularly a liquid.

The method in accordance with the invention is defined in the appended independent claim relating to the method.

Embodiments of the method are defined in the appended sub-claims relating to the method.

The object of the method is, during use of packages in accordance with the invention, to achieve quick filling of the package with a liquid while producing little foam in the package prior to closing.

The packaging blank in accordance with the invention comprises a bag of flexible material, the bag being laid flat prior to being filled with material and the package bag in flat state comprising two opposing side walls, parallel and substantially in contact with each other, which side walls are tightly sealed along opposing side edges, the bag also comprising a bottom wall extending across the width of the wide walls, half of the bottom wall being folded up towards the inside of the relevant adjacent side wall at its lowermost part. The parts of the end edges of the bottom wall in contact with each other are tightly sealed together. The ends of the bottom wall are, at least in the vicinity of the fold line, joined to the side walls at their side edge join. A string of springy, elastic material is connected to the outside of each side wall at its lower edge, along substantially the entire length of the lower edge of the side wall. In a tested embodiment of the invention the wall consisted of a plastic foil with a thickness of 0.1 mm and the height of the string was approximately 1.5 mm in the vertical direction of the bag and 0.4 mm thick. The string was attached to the outside of the side walls along its entire height. The string counteracted any tendency of

the package to fall over. The package had substantially circular cross section with a diameter of 100 mm and a height of ca. 200 mm.

It is important that the string is shaped so that it covers the junction between the side walls of the filled bag and the bottom of the bag resting on the surface.

The string is preferably joined to the side wall in such a way that it cannot be tilted in relation to the wall.

For a package with a diameter of ca. 100 mm and a wall thickness of ca. 0.1 mm, the string may have a thickness of at least 0.05 mm and a height of at least 0.2 mm. The stability of the package increases with greater thickness or height of the string. As mentioned earlier, the string functions well for a package with a diameter of 100 mm when the wall consists of a flexible plastic foil having a wall thickness of 0.1 mm, if the string has a height of 1.5-2 mm and a thickness of 0.4 mm, when the string is firmly attached to the outside of the wall so that it cannot be tilted in the vertical plane and when the string is placed so that it is in contact with the surface on which the bag is resting, i.e. the string forms a peripheral part of the stretched bottom wall resting on a horizontal surface when the filled bag is vertically oriented. The string is thus joined to the wall at at least its upper and its lower parts, and preferably over substantially its entire height.

When such a flat package is being filled with liquid it assumes a circular cross section as the folded edge of the bottom wall moves downwards towards a plane tautened by the two strings of material. The end edge connection of the bottom wall to the seam of the side walls, at least in the vicinity of the original fold in the bottom wall, causes a certain forced control of the cross-sectional shape of the lower part of the liquid-filled package. The breadth of the package is defined by the breadth of the bottom wall. The material strings result in stabilization of the package. It seems that the material string assumes a generally U-shaped curvature on a horizontal surface and thus defines

a stabilized transition between the vertical side wall of the liquid-filled package and its horizontal bottom and keeps this stretched. It appears, therefore, that the string prevents the side wall from sinking down and bending out to become a horizontal bottom wall.

Stabilization of the package is also obtained in the horizontal directions that extend through the connection lines of the side walls, preventing the package from collapsing in said direction. The strings may possibly also be formed of a series of pieces arranged with slight spacing. However, it is preferred for the strings to be substantially solid and extend along the entire lower edge of the package when flat, on the lower side thereof.

In one embodiment the material strings may be applied as prefabricated strings that are joined to the side walls. Alternatively the strings may be applied as a string of a non-solidified plastic material, e.g. a string co-extruded with the plastic film or a string of hot-melt glue. In other embodiments a thin, springy continuous strip of plastic film can be adhered to each side wall close to and along its lower edge by means of conventional adhesion technology. The material string can thus be adhered using radiation, ultrasonic, glue joint, soldering or welding technology, or double-sided tape, etc.

The flat, empty package can be produced as a chain of packages, the packages of the chain being connected to each other at the side edges of the side walls. The packages may thus be connected to each other by welding seams joining the side walls and having a longitudinal tear indication in their central region, i.e. a weakening line that permits easy separation of the packages from each other. Alternatively they may have a cut possibly extending up to the proximity of the upper end of the package.

The chain of packages is suitably made out of a continuous strip of plastic film which is provided at the manufacturing stage with said material strings by means of extrusion or the like. Similar straight

strings may also be extruded along the side edges of the continuous plastic strip. The continuous strip is then laid flat to have a W-profile, so that the lower continuous strips are positioned as stated. The continuous strip can then be sealed with transverse seams to form the chain and tear indications or cuts can be introduced in these seams.

The material strings at the opening edge of the packages reinforce the opening of the package and facilitate handling of the package chain and packages. The strings may be joined to the packages at only their longitudinal central region. The opening edge of the packages, including the material strings above the neck closure of the package may be detached after the neck is sealed, and returned to the production point for the continuous strip where these remnants can be reprocessed to be used in the material strings at the lower edge of the side walls of the packages.

The re-used material usually acquires somewhat greater rigidity than the original material of the film and can therefore advantageously be used to form said material strings in the continuous strip.

The method for filling a package in accordance with the invention comprises orienting the package in flat state with the opening upwards and then inserting a liquid-filling mouthpiece of considerable width (suitably 70% and preferably at least 90% of more of the length of the package and preferably having the same breadth as the length of the bag) and slight thickness between the side walls, parallel thereto and lowering it some way into the package, whereafter liquid is introduced through the mouthpiece to fill the bag. Since the bag is initially substantially flat, even after insertion of the filling mouthpiece, there is initially no air volume in the package and therefore no, or very little, foam will appear in the package when the liquid is introduced. This is naturally providing the liquid or filling pipe does not contain any substantial quantity of gas. The mouthpiece is essentially formed of springy elastic material and in unloaded state has two normally flat walls located substantially in contact with each other, which are flexible

so that the mouthpiece is expanded by the liquid flowing through it. This means that, to a certain extent, the mouthpiece is self-sealing when the flow of liquid is interrupted.

A series of such nozzles may be provided to move together with the chain or respective packages to fill the packages during transport. The mouthpieces may be arranged to move in a circular path, synchronous with the chain/packages and can thus be inserted into or withdrawn from the packages during their transportation. A pair of flexible clamping jaws may clamp the neck of the bag to the mouthpiece along the length of the neck of the bag during the filling operation. The clamping jaws are suitably flexibly pre-stressed towards each other to the closed position and can thus clamp the neck of the bag after removal of the mouthpiece. The clamping jaws may also be made as welding jaws.

When the package has been filled the neck of the bag is sealed at right angles to the side edges, forming a sealing seam that extends between the side edges of the side walls. Together with adjacent triangular parts of the package, the end parts of this sealing seam can be laid flat and folded down towards the side walls of the package or towards the upper end wall of the package in conventional manner. Naturally the package can be sealed by other sealing means.

A chain of packages can be conveyed in flat state past a filling apparatus from which the mouthpiece is inserted into the necks of the empty bags for separate filling thereof.

The invention will be described in the following by way of example with reference to the accompanying drawings.

Figure 1 shows a flat packaging bag in accordance with the invention, prior to filling.

Figure 2 shows schematically a section taken along the line II-II in Figure 1.

Figure 3 shows a side view of the package illustrated in Figure 1 when filled with liquid, before being closed.

Figure 4 shows schematically a view taken along the line IV-IV in Figure 3.

Figure 5 shows a chain of packages as in Figure 1, on its way past a liquid-filling station and a sealing station.

Figure 6 shows schematically a continuous strip of plastic film that can be used as starting material for a package in accordance with Figure 1.

Figure 7 shows a set of wheels in a folding device for producing a blank out of a continuous strip of plastic film for a chain of packages.

Figure 8 shows a view in perspective of a closed, filled package in accordance with the invention.

Figure 9 shows a blank for a bag when spread out flat.

Figure 6 illustrates schematically a flat continuous strip 1 of thin, flexible plastic film material folded to a W-shaped profile. The continuous strip comprises two side walls 2, the free edges 22 of which are situated close together. A central part 3 of the continuous strip 1 is folded in between the side walls 2 via fold lines 21 and has a fold line 32 in its mid-region. The lines 21 and 32 define the field 31.

Longitudinal sections of the continuous strip 1 are sealed by welding transversely to the longitudinal direction of the continuous strip, preferably perpendicular to the longitudinal direction, and are cut along the incision. A string of springy elastic material 4 is applied along substantially the full breadth of the longitudinal section on the lower edge of each side 2. For the sake of clarity the string 4 is shown in the drawing spaced from the line 21 but in reality the string 4 should be close to the line 21. Figure 1 shows the welding seams 5, fold line 32 and fold line 21 when the longitudinal section 1′ is in flat state.

This longitudinal section 1′ forms a package blank in which the portion 3′ forms the bottom of the package when a fluid material, e.g. a liquid,

is introduced into the upper part of the package, i.e. between the walls 2 at the edges 22. The liquid poured in fills out the volume of the package which thus assumes a circular cross section. The fields 31 form a flat bottom surface of the package in a plane stretched out by the strings 4. The bottom 3 and strings 4 of the filled package are intended to rest on a flat, horizontal surface, whereupon the end portions of the fields 31 that are in connected with the side welding seams 5 initially follow the seams 5 but are deflected to said plane.

The fields 31 are tightly joined together and also to the side walls 2, at least in the region of the point at which the double fold 32 is connected to the welding seam, and preferably right down to the edges 21.

The string 4 can be applied as a hot-melt string which is disposed in hot state on the edge 21 of each side wall 2. The package in flat state illustrated in Figures 1 and 2 is filled by a generally leaf-shaped mouthpiece with a narrow, elongate through-flow area, being inserted from above between the opening edges 22 of the flat package, after which liquid is injected through the mouthpiece 7. Since there is initially no air volume in the package 1', there is naturally no air in the package 1' to be displaced out of the package when the liquid is introduced. Filling can therefore be performed quickly and substantially without the formation of foam. When the liquid is introduced into the package 1' the distance between the edges 21 increases and the fold line 32 will move to a horizontal plane stretching between the edges 21 and the material strings 4 so that the fields 31 will also lie in this plane. The bottom wall 3 of the package will normally rest on a substantially flat, horizontal surface. The package 1 is therefore stable, i.e. it has no tendency to fall over since the material strings 4 provide a strong stabilizing influence on the package, the bottom area of which assumes the shape shown in Figure 4.

The cross section of the package when filled with liquid is almost circular, as determined by the circumference of the package, the breadth

of the bottom 3 and the fact that the ends of the bottom fields 31 are connected to the welding seams 5.

It can also be seen from Figure 5 that the packages 1' are formed from the continuous strip 1 with the aid of transverse sealing seams 50 having a central tear indication 1, along which the packages 1' can be separated. The chain of coherent packages 1' can be separated before or after the packages are filled with liquid. Figure 5 shows that, after filling, the chain is conveyed past a pair of welding jaws 8, only one of which is shown in Figure 5, between which the packages 1' can be sealed with a welding seam in proximity of the upper edge 22. The filled, sealed packages can then be separated as indicated by the line 9 in Figure 5.

The embodiment shows the packages being produced from a continuous strip with a cross section in accordance with Figure 6. However, it should be clear that the blanks for the package illustrated in Figure 1 can be formed in some other way, the starting blank naturally having a W-shaped cross section and being sealed with two parallel welding seams 5. It is naturally also possible to establish the fields 2, 3 in the package 1' in some other manner, through connection-welding of separate sheets and application of the elastic strings 4 as shown on the finished package 1.

The package can be filled with fluid material such as powder, cream, liquid or the like.

If the package is given relatively large dimensions, particularly if the height is approximately the same as the circumference, a certain caution should be observed when handling the package after it is opened if the volume is 0.5 l or more. A dish-shaped support device is also possible, in which the package can be placed when the contents has been drunk or poured out.

As mentioned, the chain of packages 1' can be manufactured starting from the continuous strip of plastic film. During the manufacture of this strip the reinforcing strings 4 can be established as continuous strings 4' that are formed when the strip of film is extruded.

As can be seen in Figure 7 the continuous strip of film can be folded using conventional folding equipment, such as a pair of coaxial wheels 121 between which the periphery of a third wheel 132 protrudes from below, and suitable guide tracks so that the plastic film is shaped to a W-profile as indicated. In this case the extruded strings 4' must of course be placed in immediate proximity of the lower periphery of the wheels 121 as shown in Figure 7 so that they assume the position shown in the erect package.

It is also clear from Figures 6 and 7 that the continuous strip of film may be provided with longitudinal beading 23 in the vicinity of its free edges. The beading 23 reinforces the opening edges of the packages 1 and also provides a support by which the packages can be suspended on and possibly displaced along corresponding storing arrangements before and/or after filling. The edges of the film strip, including the beading 23, can be removed when they have fulfilled their function and can then be returned to the production plant where the film with beading 4' and 23 are attached.

Figure 8, finally, shows that the end portions of the transverse sealing fin 81 and the adjacent corners of the upper part of the package are flattened to form triangular corner flaps 82 that are suitably folded down and attached to the side walls 52 of the package, or folded up and attached to the top surface.

Figure 9 shows a longitudinal section of a strip of plastic film from which a bag can be manufactured, spread out. The strip comprises a laminate, the outer layer of which forms the inner surface of the bag, and is easy to weld, whereas the other surface layer is difficult to weld. For this reason a central recess 55 is arranged in the bottom wall 3 at

each end of the section. The recess 55 extends along each edge of the bottom wall but not all the way up to each side wall 2. The depth of the recess 55 from the end edge 51 of the section is less than, e.g. half the width of the welding connection zone 5. The lower part of the inner sides of the side walls 2 can therefore also be welded together along the welding connection 5 in the region of the double-folded bottom wall 3; 31,31 when the bag/blank is flat, so that a durable connection is obtained in this region at the same time as the double-folded bottom wall is welded to the side walls along the connecting seam 5. This increases the strength of the weld connection between the side walls 2 in the lower part of the seams 5.

CLAIMS

1. A package comprising a bag of flexible sheet material which in its flat state comprises two opposing side walls (2) substantially in contact with each other, which side walls are tightly sealed along opposing side edges (5), the bag also comprising a bottom wall (3) which is folded double and has two fields (31) facing each other received between the lower parts of the side walls (2), the parts of the end edges of the bottom wall being sealed together, the side edges of the bottom wall being, at least in the vicinity of the fold line (32), joined to the side walls at their side edges (5), **characterised in** that a string of material (4) is connected to each side wall (2) at its lower edge (21) when the package is in flat state, and in that the material string is arranged to connect with the edge of the bottom wall of the filled package when resting on a surface.

2. A package as claimed in claim 1, **characterised in** that the material string (4) is integrated with or applied on the sheet material, in that the two material strings of the package are separated from each other and in that the material string is rigidly connected to the outside of the side wall as regards bending in a vertical plane.

3. A package as claimed in claim 1 or claim 2, **characterised in** that the package is formed from a lengthwise section of a continuous strip of thin plastic film folded flat to have a W-shaped cross-sectional profile and provided with transverse welding seams (5) separated from each other.

4. A package as claimed in any one of claims 1-3, **characterised in** that the neck of the package is closed by means of a sealing seam (81) in the longitudinal direction of the section, and in that the end portion of the fin (81), together with adjacent corners of the package, is laid flat to form triangular parts that are folded towards and secured to an adjacent package wall.

5. A chain of packages as claimed in any one of claims 1-4, **characterised in** that the packages (1') constitute connected longitudinal sections of the continuous strip (1).

6. A chain as claimed in claim 5, **characterised in** that each longitudinal section (50) connecting the packages (1') is provided with a weakening line (51).

7. A chain as claimed in claim 5 or claim 6, **characterised in** that it is formed from a continuous strip of plastic film folded flat to have a W-shaped profile, and provided with material strings along the lower side edges of the packages, the continuous strip being sealed by means of transverse seals (5).

8. A chain as claimed in claim 7, **characterised in** that the continuous strip of plastic film is provided along its free edges with longitudinally running strings or beading (23) that hold together the packages.

9. A method of filling a package as claimed in any one of claims 1-4 with a fluid material, particularly a liquid, **characterised in** that a substantially leaf-shaped mouthpiece (7) is inserted into the flat neck of the bag, parallel thereto, and in that the material is inserted into the bag through the mouthpiece in the flat package.

10. A method as claimed in claim 9, **characterised in** that the opposite walls of the flat mouthpiece are made of elastomeric, flexible material so that the walls substantially abut each other in the unloaded state of the mouthpiece, and in that the walls of the mouthpiece are arranged to be elastically bent outwards due to the influence of a flow of material through the mouthpiece.

Fig. 1

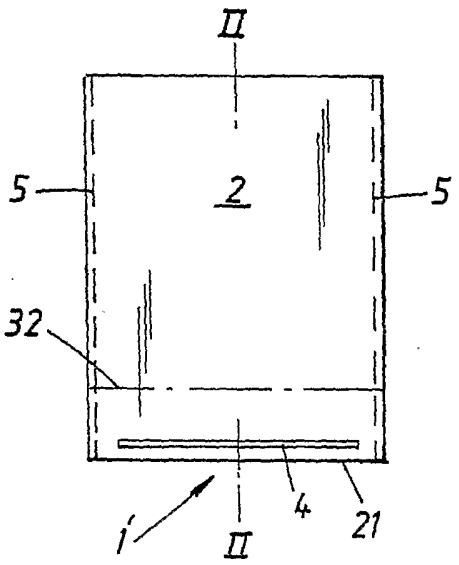


Fig. 2

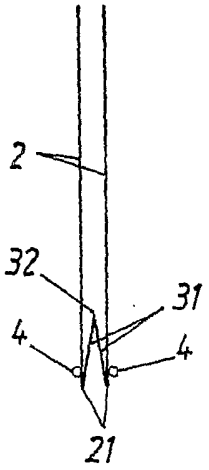


Fig. 3

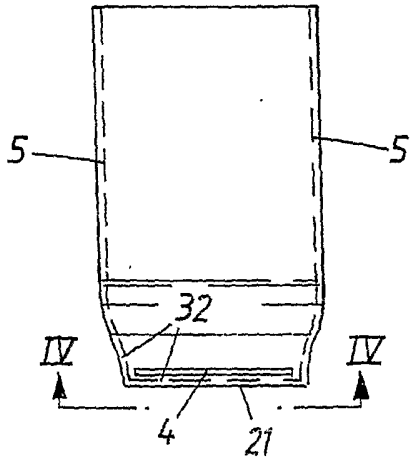


Fig. 4

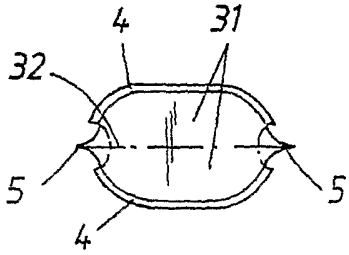


Fig. 5

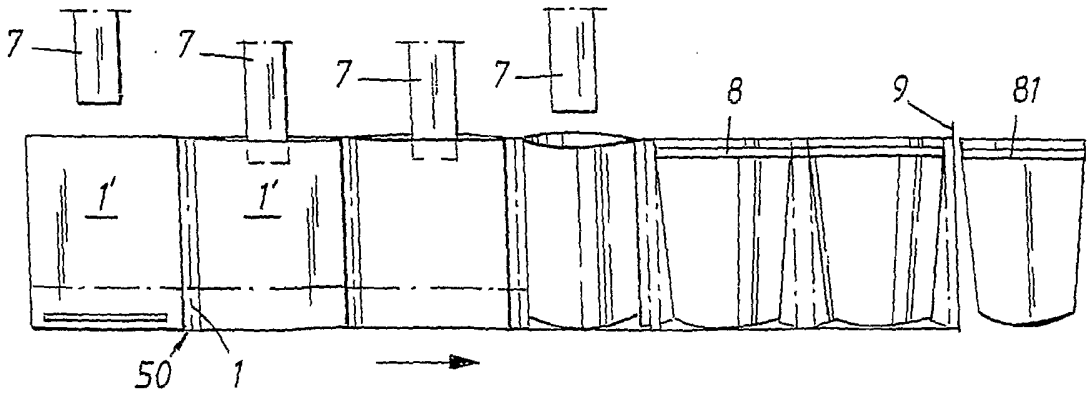


Fig. 6

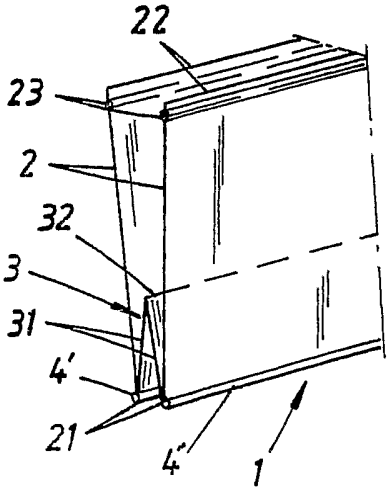


Fig. 7

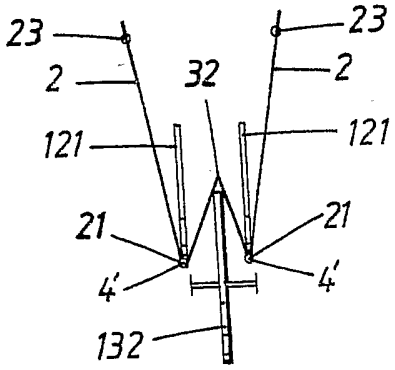


Fig. 8

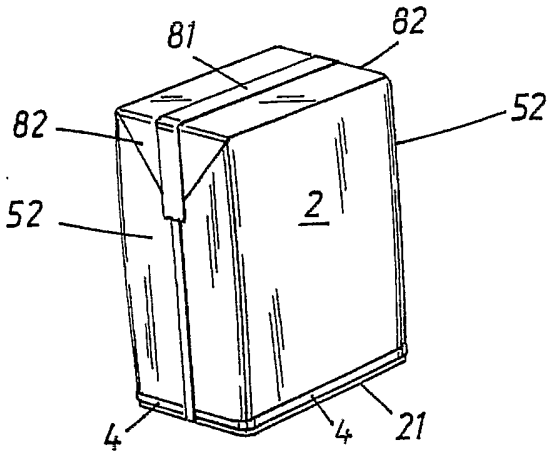
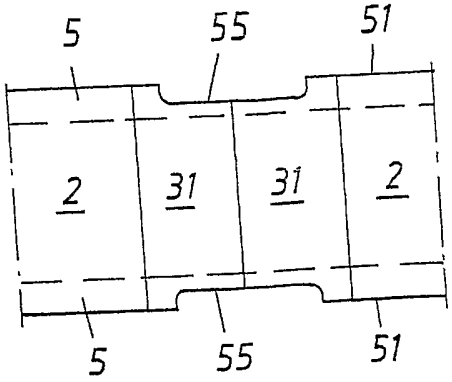


Fig. 9



INTERNATIONAL SEARCH REPORT

International application No.
PCT/SE 03/00683

A. CLASSIFICATION OF SUBJECT MATTER

IPC7: B65D 30/16, B65D 75/00, B65D 33/02
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7: B65D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	FR 1597215 A (TORMOS LOUIS), 31 July 1970 (31.07.70), page 1, line 34 - line 37; page 4, line 36 - page 5, line 8	1-8
A	US 6231237 B1 (GELLER), 15 May 2001 (15.05.01), column 2, line 27 - line 38	1-8
A	US 3462067 A (W.S. SHORE), 19 August 1969 (19.08.69), claim 1	1-8
A	GB 1233010 A (DIAMOND SHAMROCK CORPORATION), 26 May 1971 (26.05.71), page 2, line 37 - line 48	1-8

☐ Further documents are listed in the continuation of Box C. ☒ See patent family annex.

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"A" document defining the general state of the art which is not considered to be of particular relevance
"E" earlier application or patent but published on or after the international filing date
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed
"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
17 July 2003	17 -07- 2003
Name and mailing address of the ISA/ Swedish Patent Office Box 5055, S-102 42 STOCKHOLM Facsimile No. +46 8 666 02 86	Authorized officer WILLIAM HELIN/BS Telephone No. +46 8 782 25 00

Form PCT/ISA/210 (second sheet) (July 1998)

INTERNATIONAL SEARCH REPORT

International application No.
PCT/SE03/00683

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see next sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.

2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

☐ The additional search fees were accompanied by the applicant's protest.

☐ No protest accompanied the payment of additional search fees.

The application relates to two inventions which are not so linked as to form a single general inventive concept. The invention according to claims 1-8 relates to a stand-up bag with improved stability whereas claims 9-10 refer to a method for filling of a stand-up bag.

The invention according to claims 1-8 differs from the most relevant prior art, known through FR1597215A (D1), in that stabilizing material is added to the lower rim of the side wall of the bag.

The invention according to claims 9-10 differs from D1 in that the bag is filled in flat condition by a flexible thin nozzle. Thus, the bag is quickly filled and formation of foam is prevented.

The objective to increase the stability of the bag (claims 1-8) and the method for quicker filling (claims 9-10) are not parts of the same general inventive concept. The two inventions are considered to lack special technical features that define a contribution over what is knows through D1.

INTERNATIONAL SEARCH REPORT

Information on patent family members

29/06/03

International application No.
PCT/SE 03/00683

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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