



(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
09.12.2015 Bulletin 2015/50

(51) Int Cl.:
B65D 75/12 (2006.01) **B65D 75/22 (2006.01)**
B65D 75/26 (2006.01) **B65D 75/58 (2006.01)**

(21) Application number: **14001955.5**

(22) Date of filing: **05.06.2014**

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR
 Designated Extension States:
BA ME

(72) Inventors:
 • **Gater, Keith L.**
ST14 7NB Uttoxeter, Staffordshire (GB)
 • **Reeve, Tim**
NG6 8EF Nottingham (GB)

(71) Applicant: **Amtcor Flexibles UK Ltd**
Warmley
Bristol BS30 8XP (GB)

(74) Representative: **Gernet, Samuel Andreas**
Suisse Technology Partners AG
Badische Bahnhofstrasse 16
8212 Neuhausen am Rheinfall (CH)

(54) **Wipes and tissues packaging**

(57) The present invention relates to a flow-wrap pack (1) for wipes and tissues having a film (3) defining a front wall (5) and a back wall (7), a longitudinal sealed seam in the form of a fin seal (9) and two transverse sealed seams (11) defining a product space. The fin seal (9) is formed by two longitudinal sealing strips (15) ar-

ranged on a side of the film (3) facing the product space and extending parallel to the side edges (17) of the film (3) adjacent to a non-sealing end region (13) arranged on the same side of the film (3). The sealing strips (15) are peelable and resealable.

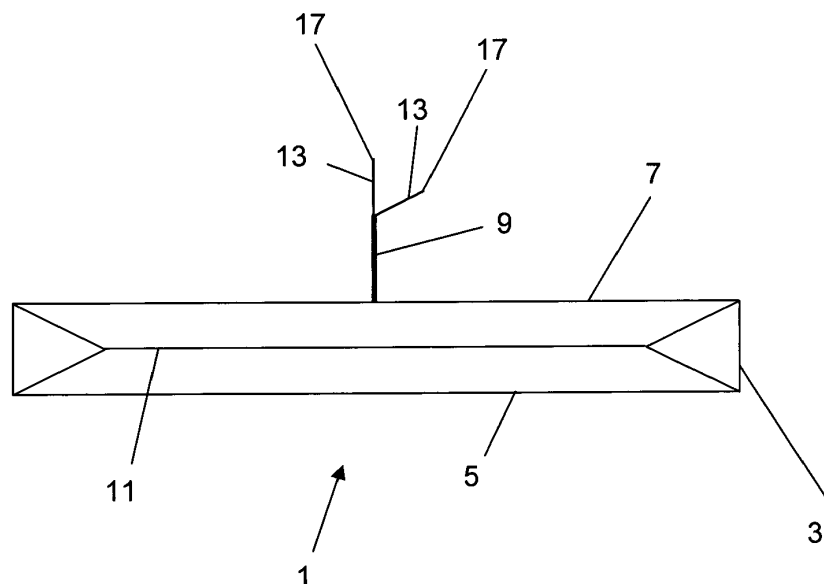


Fig. 2

Description

[0001] The present invention relates to a flow-wrap pack for wipes and tissues, in particular, wet wipes, dry wipes and dry tissues.

[0002] Flow wrap packs are widely used for packaging various products, e.g. food products such as chocolate, biscuits, cakes, but also for household, hygiene or technical products. Typical household products are wet wipes which are small moistened pieces of paper or cloth. Further products are dry wipes and dry tissues. Wipes and tissue are typically used for cleaning purposes.

[0003] Flow-wrap packs comprise a film in the form of a monolayer film or a multilayer film. The flow-wrap packs may also comprise further structures such as reclosable plastic closures or resealable labels. The structure of the laminate depends on the properties desired with respect to the packaged product, e.g. in terms of a barrier effect against oxygen, moisture or light from outside of the pack but also from inside of the pack, e.g. to prevent drying out of the packed products. Films used for flow-wrap packaging are usually produced and delivered to the packer in form of webs. In the course of the packaging the film is unrolled and wrapped around the product. Usually, the packaging process is done on horizontal or vertical flow wrapper machines. In case a single item of a product is flow-wrap packed, the item is simply unwrapped when used. However, in cases where multiple items of a product are flow-wrap packed, some kind of removal system is necessary. Multiple items are usually packed in the case of wet wipes, dry wipes and dry tissues. The removal system must thus allow the removal of a single item, and also the reclosing of the flow-wrap pack to protect the remaining items, in the case of wet wipes against drying out. It is known to achieve such a removal system by introducing a cut by way of die cutting in the front wall of the flow-wrap pack said cut being pushed through when an item is to be removed. The application of a resealable label applied over the die cut opening allows reclosing the pack after the item has been removed. Another possibility for a removal system is the integration of a plastic closure that allows reclosing the flow-wrap pack after removing a single item. For the user such removal systems are not very convenient. Further, the additional parts of the flow-wrap pack, i.e. the resealable label or the plastic closure, require additional steps in the packaging process rendering it more laborious and complicated. Often, the printed resealable label does not match the graphics and colours printed on the front wall of the flow-wrap pack due to different printing processes for the flow-wrap pack and the label.

[0004] The object of the present invention is to provide a flow-wrap pack having a simple removal system providing for an easy opening and reclosing of the flow-wrap pack without the need for additional parts complicating the packaging process.

[0005] The object is achieved by a flow-wrap pack according to claim 1. Further preferred embodiments are

subject to the dependent claims.

[0006] A flow-wrap pack for wipes and tissues according to the present invention has a film. Said film defines a front wall, a back wall, a longitudinal sealed seam in the form of fin seal arranged on the back wall and two transverse sealed seams defining a product space. The fin seal is formed by two longitudinal sealing strips arranged on a side of the film facing the product space. The two longitudinal sealing strips extend parallel to the side edges of the film adjacent to a non-sealing end region arranged on the same side of the film, whereby the sealing strips are peelable and resealable.

[0007] Peelability is defined as the ability to separate two film materials in the course of opening a package without compromising the integrity of either of the two.

[0008] The film of the wrap pack is folded or wrapped around the product to be packed in a way that the sealing strips of the film mate on the back side of the pack and are sealed in order to form the longitudinal sealed seam. In the longitudinal direction the flow-wrap pack is closed by the two transverse sealed seams. The flow-wrap pack according to the present invention provides a removal system for the packed products that is easy to operate. The non-sealing end regions are easily separated and serve as a handle to peel off the sealing strips that form the fin seal which closes the flow-wrap pack on the back wall. Thereby an opening is provided which allows removing of a single item. After removing the item the sealing strips are pressed to one another and folded back down against the back wall in order to reseal the flow-wrap pack. Consequently the die cut and the resealable label applied over the die cut can be omitted and do not compromise the print on the front wall through differing colours which are due to different printing processes used for the flow-wrap pack and the label. In addition, since there is no need to die cut and apply a resealable label or integrate a plastic closure during the packaging process, the packing speed is significantly increased.

[0009] The film used for manufacturing flow wrap packs preferably comprises at least two different polymers, e.g. polyethylene and polypropylene. The polymers are arranged in different layers of the film. Thus, an outer side of the film, i.e., the side forming the outside of the pack, and an inner side of the film, i.e., the one facing the product space, comprises different polymers. In a preferred embodiment of the flow wrap pack the transverse sealed seam is achieved by sealing the outer side of the film. Such a transverse sealed seam facilitates a tighter pack and provides a pinch effect in the area of the fin seal, giving the possibility to separate interleaved wipes during removal of wipes from the flow wrap pack.

[0010] In a further embodiment of the flow wrap pack the fin seal on the back wall as well as the two transverse sealed seams are achieved by sealing the inner side of the film.

[0011] In a preferred embodiment the sealing strips have a width in the range of 2mm to 20mm, preferably in the range of 5mm to 15mm, most preferably in the

range of 8mm to 12mm.

[0012] In another embodiment the non-sealing end-region has a width in the range of 15mm to 40mm, preferably in the range of 20mm to 30mm. The non-sealing end-region is important for convenient handling of the pack. If the non-sealing end-region does not have a minimal width it gets difficult to grip the end-regions by hand and open the flow wrap pack.

[0013] In a preferred embodiment of the flow-wrap pack according to the present invention a print layer is arranged on at least on a part of the front wall. Optionally a protective layer is arranged on top of the print layer. The print layer may also be arranged on the whole front wall. In addition, a print layer may also be arranged on a part or on the whole back wall. Preferably, a protective layer is arranged on the print layer of the back wall.

[0014] In another preferred embodiment the longitudinal sealed seam in the form of fin seal formed by the two longitudinal sealing strips comprises a pressure sensitive adhesive. Further types of adhesives that can be used are fracture hotmelt, cold seal lacquers, heat seal lacquers and glue dots. Pressure sensitive adhesives are preferred.

[0015] The film of the flow-wrap pack may be a multi-layer film. Preferably the film is monolayer film. Materials used for the film are polymers comprising polyolefin, polyester, polyethylene, polypropylene, polyamide and metalized plastics, or silicon oxide (SiO_x, whereby $1.3 < x < 1.9$). Ethylene-vinylalcohol copolymer (EVOH) is a further polymer that can be used. The following examples are possible film structures having a multiple layers: oPET/PE, oPP/oPET/PE, oPET/oPP/PE, oPET/oPET/PE, oPET/oPET/cPP whereby the abbreviations mean the following oPP: oriented polypropylene, oPET: oriented polyethylene terephthalate, PE: polyethylene, cPP: cast polypropylene.

[0016] The following film structures are preferred: oPP/PE, oPP/cPP, PET/PE, PET/cPP. The film structure oPP/PE is most preferred.

[0017] The above mentioned polymers may also be coextruded to form a monoweb comprising different resin layers.

[0018] A method for the production of the flow wrap pack is as follows: In a first step the different layers of the film are printed and subsequently laminated. The resealable strip and the tear line are arranged on the film. The tear line is preferably achieved by laser scoring. It may also be done by mechanical scoring. Then the film is slit to size into reels which are delivered to the packer of the flow wrapped product. The packer produces the final flow wrap pack employing the film in flow wrap pack machines.

[0019] The resealable flow-wrap pack for wipes and tissues according to the present invention is explained in more detail below with reference to exemplary embodiments in the drawings, in which, purely schematically:

Fig. 1 shows a flow-wrap pack for wipes and tissues

from the prior art;

Fig. 2 shows an end view of a flow-wrap pack according to the present invention;

Fig. 3 shows a plain view of a back wall of the flow-wrap pack;

Fig. 4 shows a film used for flow-wrap packs according to the present invention.

[0020] Fig. 1 shows a flow-wrap pack from the prior art. The flow-wrap pack 1 has film 3. Further, the front wall 5 and the two transverse sealed seams 11 are shown. The longitudinal sealed seam on the back wall cannot be seen. An adhesive label 19 is arranged on the front wall 5 in order to cover the die cut opening used for the removal of the product.

[0021] Fig. 2 shows an end view of a flow-wrap pack 1 according to the present invention. The flow-wrap pack 1 has a film 3 defining a front wall 5 and a back wall 7. Only one of the two transverse sealed seams 11 which close the pack on its longitudinal ends can be seen. The front wall 5 does not comprise any opening system for the removal of the product and may therefore carry a print which is not compromised by further adhesive labels. The longitudinal sealed seam 9 is arranged on the back wall 7, preferably in the middle of the back wall 7. The longitudinal sealed seam 9 has the form of a fin seal which is shown in an upright position. The non-sealing end regions 13 next to the side edges 17 of the film 3 are easily separated and provide for an easy opening of the flow-wrap pack.

[0022] Fig. 3 shows a plain view of a back wall of the flow-wrap pack 1. The flow-wrap pack 1 is in a closed state. The longitudinal sealed seam 9 in the form of a fin seal and the non-sealing end regions 13 lie essentially flat against the back wall 7 defined by the film 3. The two transverse sealed seams 11 close the flow-wrap pack 1 on either end in its longitudinal direction.

[0023] Fig. 4 shows a film used for flow-wrap packs 1 according to the present invention. The side of the film 3 which is shown is the side that faces the product space in the finished flow-wrap pack. The sealing strips 15 run in the longitudinal direction of the film, thus extending parallel to the side edges 17. Further, the sealing strips 15 are arranged adjacent to the non-sealing end regions 13 that are delimited by the side edges 17 of the film 3.

Claims

1. Flow-wrap pack (1) for wipes and tissues having a film (3) defining a front wall (5) and a back wall (7), a longitudinal sealed seam in the form of a fin seal (9) arranged on the back wall (7) and two transverse sealed seams (11) defining a product space, whereby the fin seal (9) is formed by two longitudinal seal-

- ing strips (15) arranged on a side of the film (3) facing the product space and extending parallel to the side edges (17) of the film (3) adjacent to a non-sealing end region (13) arranged on the same side of the film (3), whereby the sealing strips (15) are peelable and resealable. 5
2. Flow-wrap pack (1) according to claim 1, whereby the two transverse sealed seams (11) are formed by sealing an outer side of the film (3). 10
3. Flow-wrap pack (1) according to claim 1, whereby a print layer is arranged on at least on a part of the front wall (5) and optionally a protective layer is arranged on top of the print layer. 15
4. Flow-wrap pack (1) according to claim 1, whereby a print layer is arranged on at least on a part of the front wall (5) and on at least a part of the back wall (7) and optionally a protective layer is arranged on top of the print layer. 20
5. Flow-wrap pack (1) according to claim 1, whereby the longitudinal sealed seam in the form of a fin seal (9) formed by the two longitudinal sealing strips (15) comprises a pressure sensitive adhesive. 25
6. Flow wrap pack (1) according to claim 1, whereby the sealing strips (15) have a width in the range of 2mm to 20mm, preferably in the range of 5mm to 15mm, most preferably in the range of 8mm to 12mm. 30
7. Flow wrap pack (1) according to claim 1, whereby the non-sealing end-region (13) has a width in the range of 15mm to 40mm, preferably in the range of 20mm to 30mm. 35
8. Flow-wrap pack (1) according to claim 1, whereby the film (3) is a multilayer film or preferably a monolayer film comprising polyolefin, polyester, polypropylene, polyethylene, polyamide, ethylene-vinylalcohol copolymer, metalized plastics, or SiO_x . 40
9. Flow-wrap pack (1) according to claim 8, whereby the film comprises a layer of oPP and a layer of PE. 45

50

55

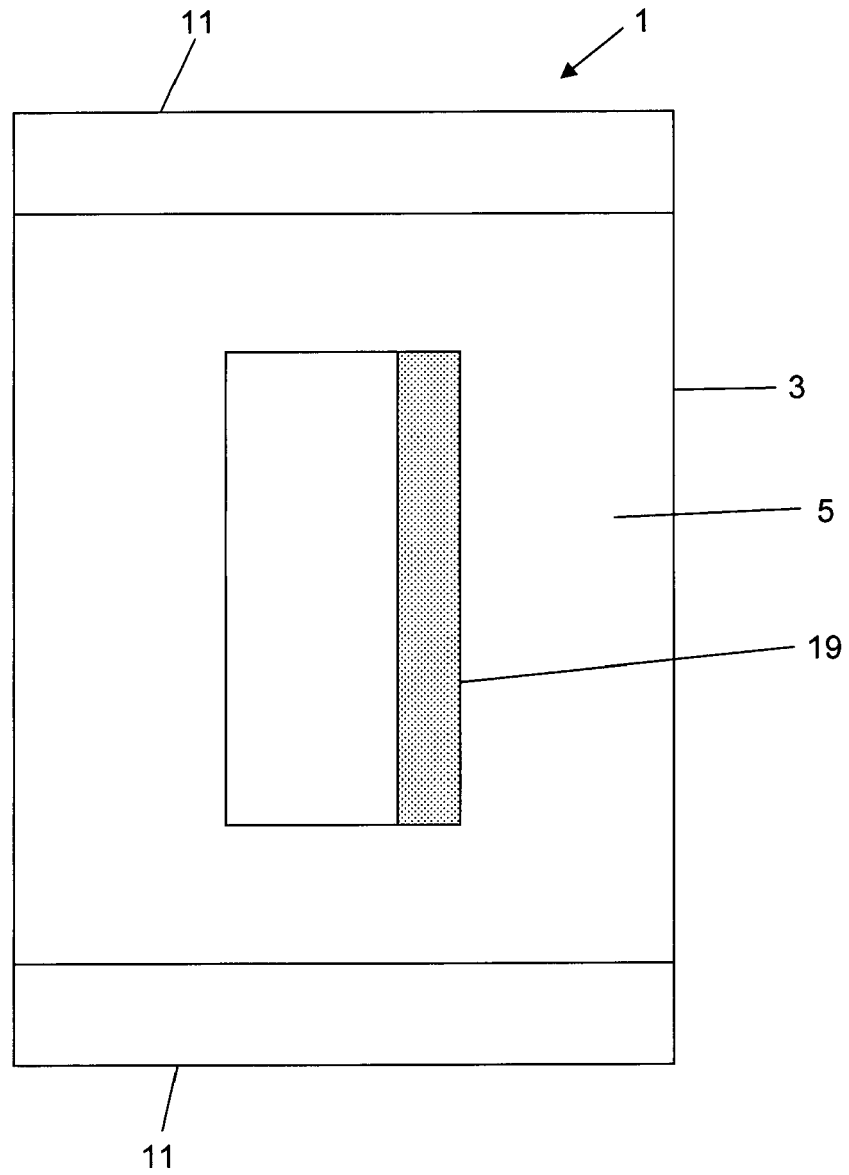


Fig. 1 (prior art)

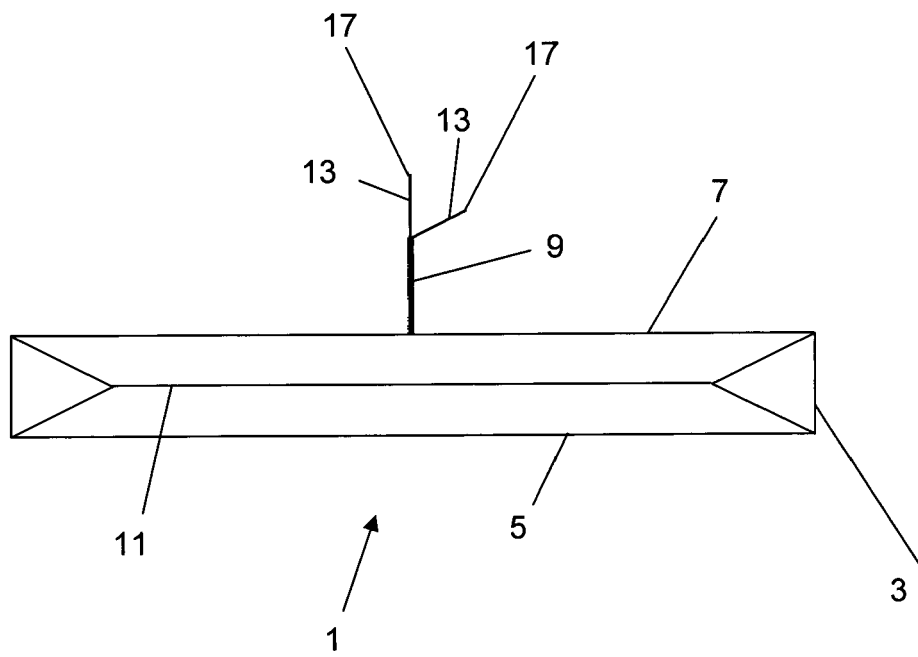


Fig. 2

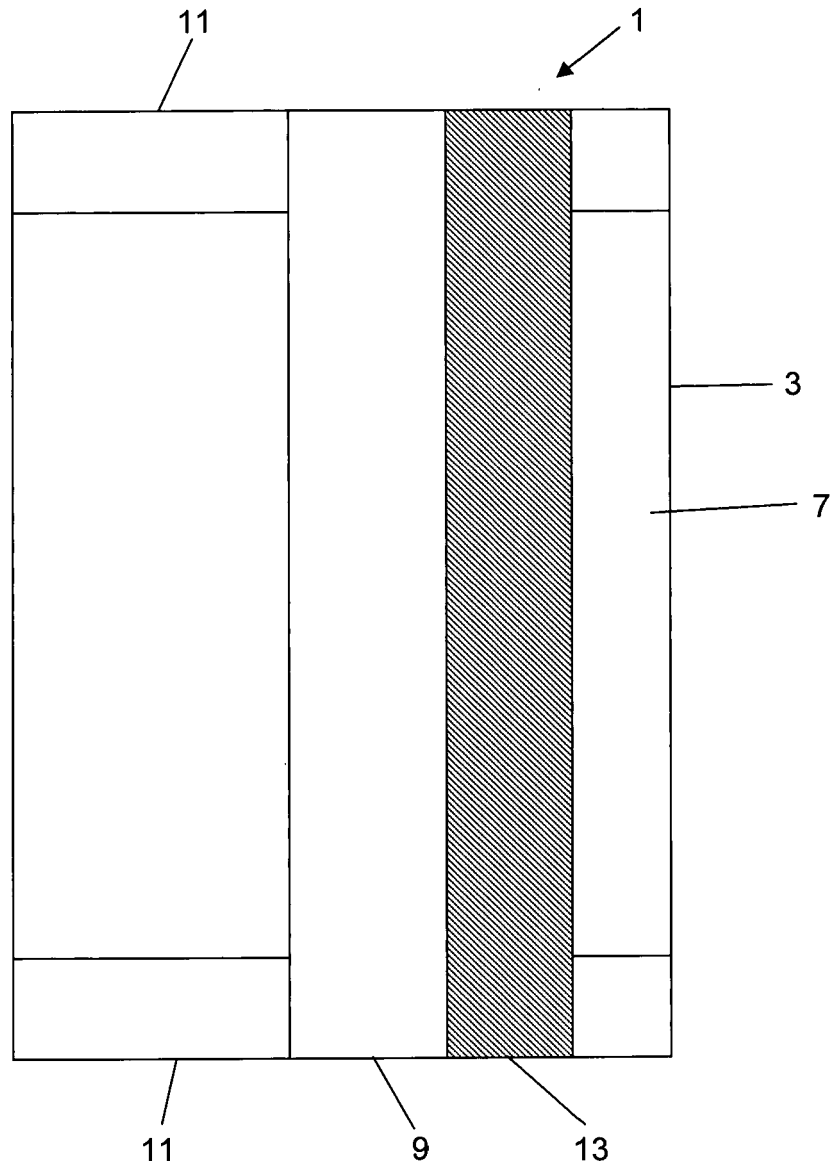


Fig. 3

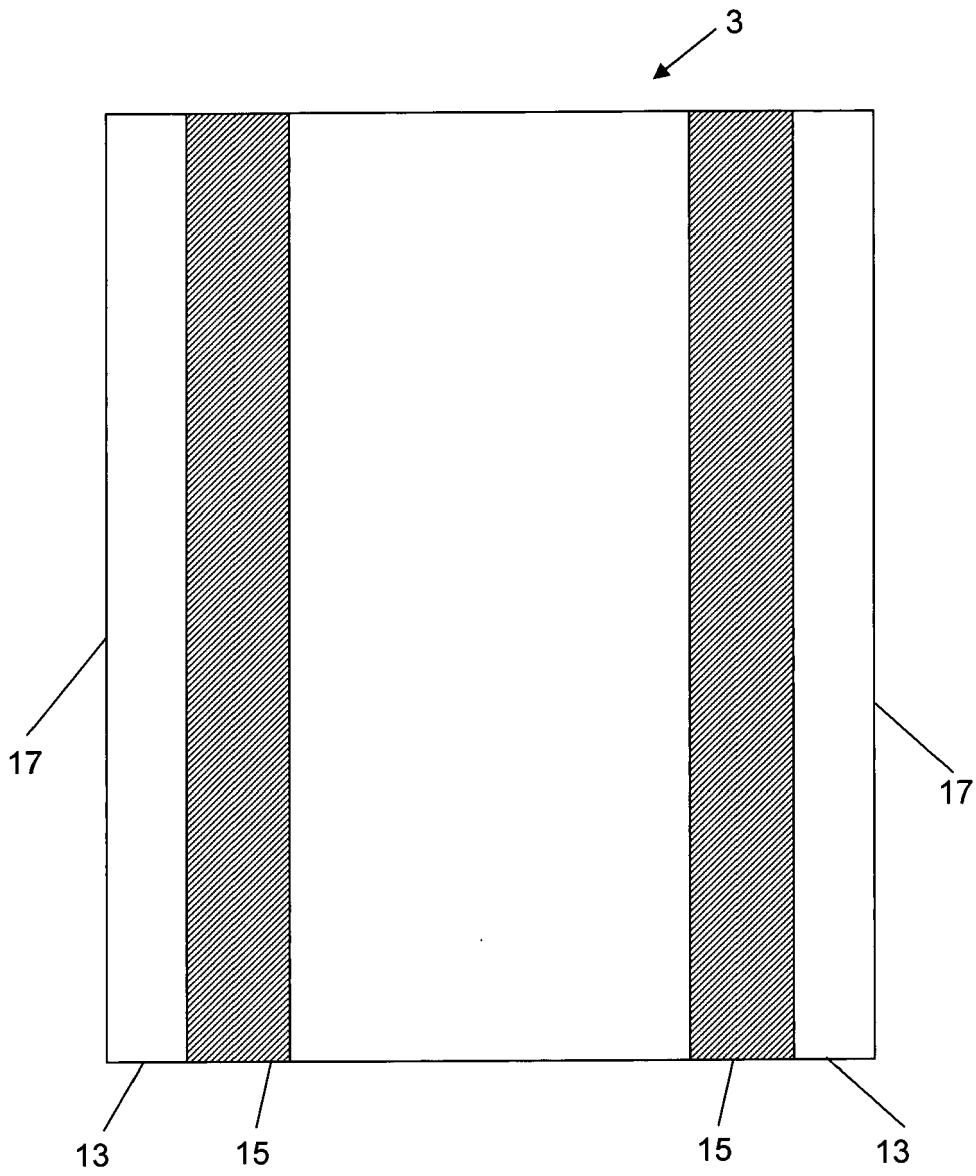


Fig. 4



EUROPEAN SEARCH REPORT

Application Number
EP 14 00 1955

5

10

15

20

25

30

35

40

45

50

55

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	EP 1 010 638 A1 (TEICH AG [AT]) 21 June 2000 (2000-06-21) * paragraph [0014] - paragraph [0024]; figures 1-7 *	1-9	INV. B65D75/12 B65D75/22 B65D75/26 B65D75/58
X	DE 10 2012 101538 A1 (HUHTAMAKI RONSBERG) 27 December 2012 (2012-12-27) * paragraph [0016] - paragraph [0050]; claim 5; figures 1-16 *	1-9	
X	WO 2014/026334 A1 (AVERY DENNISON CORP [US]; WOO JULIA [CN]) 20 February 2014 (2014-02-20) * paragraph [0022] - paragraph [0091]; figures 1-7 *	1-9	
X	DE 40 00 857 A1 (HELIO FOLIEN GMBH [DE]) 18 July 1991 (1991-07-18) * column 6, line 23 - column 8, line 8; figures 1-8 *	1-9	
			TECHNICAL FIELDS SEARCHED (IPC)
			B65D
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 14 November 2014	Examiner Lämme1, Gunnar
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

1
EPO FORM 1503 03 82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 14 00 1955

5

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

14-11-2014

10

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 1010638 A1	21-06-2000	AT 260831 T	15-03-2004
		AT 413094 B	15-11-2005
		DE 59908725 D1	08-04-2004
		EP 1010638 A1	21-06-2000

DE 102012101538 A1	27-12-2012	DE 102012101538 A1	27-12-2012
		WO 2012175234 A1	27-12-2012

WO 2014026334 A1	20-02-2014	NONE	

DE 4000857 A1	18-07-1991	NONE	

15

20

25

30

35

40

45

50

55

EPO FORM P0469

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82