



(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
28.08.2019 Bulletin 2019/35

(51) Int Cl.:
B65D 75/58 (2006.01) B65D 5/06 (2006.01)

(21) Application number: **19159463.9**

(22) Date of filing: **26.02.2019**

(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
Designated Validation States:
KH MA MD TN

(72) Inventors:
• **DAVOLI, Giulia**
40033 CASALECCHIO DI RENO (BOLOGNA) (IT)
• **NEGRINI, Stefano**
40012 CALDERARA DI RENO (IT)

(74) Representative: **Bianciardi, Ezio**
Bugnion S.p.A.
Via di Corticella, 87
40128 Bologna (IT)

(30) Priority: **27.02.2018 IT 201800003086**

(71) Applicant: **G.D S.p.A.**
40133 Bologna (IT)

(54) **CONTAINER FOR POURABLE FOOD PRODUCTS**

(57) A packaging container (1) for pourable food products made by sealing and folding a wrapping material;
the container (1) comprises: a front wall (2) provided with an opening (A); two triangular shaped side walls (3, 4);

a back wall (5); a trapezoidal shaped bottom wall (6); and at least one seal (7);
the side walls (3, 4) and the bottom wall (6) each having at least one line of weakness (8, 13) for preferentially folding the container (1).

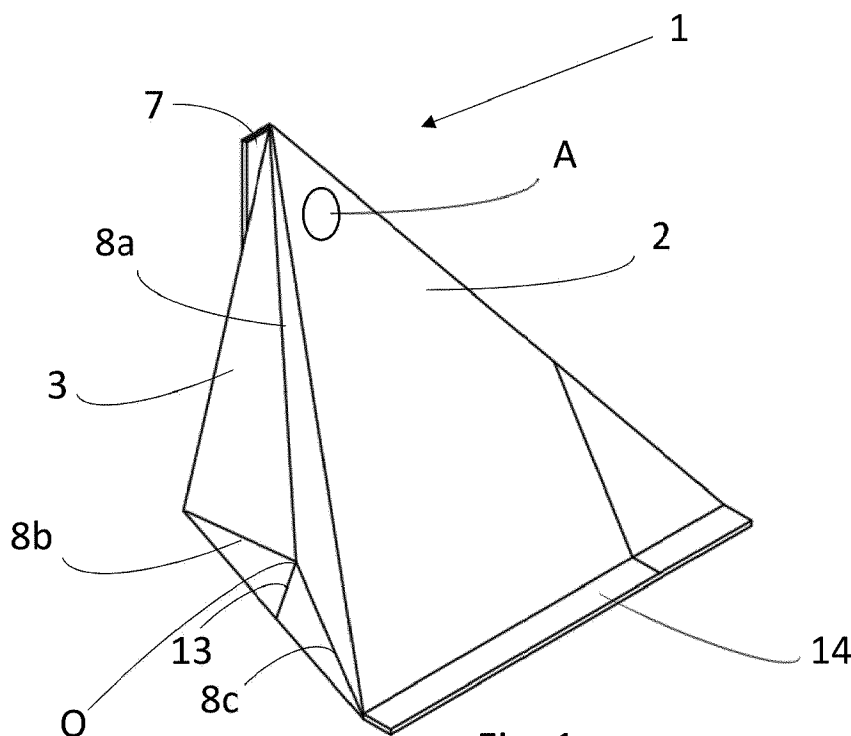


Fig. 1

Description

[0001] This invention relates to a container for pourable food products. In particular, the container of this invention is advantageously applicable in the liquid food industry.

[0002] Known in the food industry are several different kinds of containers.

[0003] For example, document WO2004078607 discloses a container with a tetrahedral structure made from a tubular laminated material, where a first longitudinal edge overlaps a second longitudinal edge comprising a first seal and a second seal, both of which are disposed transversely to the longitudinal direction of the tube. More specifically, the container comprises a front wall provided with an opening, two triangular side walls, a triangular back wall and a triangular bottom wall.

[0004] The container disclosed has several disadvantages. In particular, the container made in this way (being a substantially rigid structure) does not allow its contents to be poured out smoothly and completely, with the risk that some of the product it contains remains trapped inside (and cannot be poured out completely). Furthermore, owing to the shape of the container, pouring out its contents tends to be awkward.

[0005] The aim of this invention is to provide a container for pourable food products to overcome the drawbacks of the prior art described above.

[0006] In particular, this invention has for an aim to provide a container for pourable products to make pouring the contents particularly easy.

[0007] This aim is fully achieved by the container for pourable food products of this invention as characterized in the appended claims.

[0008] The features of the invention will become more apparent from the following description of preferred, non-limiting embodiments of it, illustrated by way of example in the accompanying drawings, in which:

- Figure 1 is a schematic perspective view of the container of this invention;
- Figure 2 is a further schematic perspective view of the container of this invention;
- Figure 3 schematically illustrates an intermediate shape of the container (while its contents are being poured);
- Figure 4 schematically illustrates a final shape of the container (when completely empty);
- Figure 5 illustrates a configuration of the flat, multilayer wrapping material used to make the container of this invention.

[0009] A container 1 for pourable food products is illustrated in Figure 1.

[0010] The container 1 is obtained from a sheet (roll) of multilayer wrapping material which is longitudinally folded and sealed to obtain a tubular structure. Next, a first seal is made to close one end of the tubular structure

and the pourable food product is then filled into the tubular structure. To close the tubular structure, a second seal, orthogonal to the first seal, is made at the second end of the tubular structure.

[0011] The container 1 thus made comprises: a front wall 2 provided with an opening A; two triangular shaped side walls 3, 4; a back wall 5; a trapezoidal shaped bottom wall 6; and a seal 7. Looking in more detail, the side walls 3, 4 are defined by the edges of the front wall 2, of the back wall 5 and of the bottom wall 6.

[0012] Preferably, a first portion 9 of the seal 7 extends along the back wall 5, and a second portion 10 of the seal 7 is folded over and orthogonally overlaps the minor base 11 of the bottom wall 6; the second portion 10 is also sealed at a portion of the bottom wall 6 adjacent to the minor base 11. Folding the second portion 10 of the seal 7 over onto the minor base 11 of the bottom wall 6 defines the trapezoidal base pyramid structure of the container 1. Preferably, as mentioned, the container comprises a further seal 14, transverse to the seal 7 and parallel to the minor base 11 of the bottom wall 6; the further seal 14 joins the front wall 2, the bottom wall 6 and the two side walls 3, 4.

[0013] In a preferred embodiment, the line of weakness 13 of the bottom wall 6 is located in the proximity of, and parallel to, the minor base 11 of the bottom wall 6.

[0014] The side walls 3, 4 and the bottom wall 6 each have at least one line of weakness 8, 13 for preferentially folding the container 1. More specifically, each side wall 3, 4 preferably has three lines of weakness 8a, 8b, 8c, whilst the bottom wall 6 has only the line of weakness 13.

[0015] Looking in more detail, each line of weakness 8a, 8b, 8c of each side wall 3, 4 has a point of origin O located on the respective side wall 3, 4; each line of weakness 8a, 8b, 8c extends from the point of origin O and converges on a respective vertex of the side walls 3, 4. In other words, from the point of origin O, each line of weakness 8a, 8b, 8c extends to the point where it meets a respective vertex, the vertices being defined by the points where the edges of the front wall 2, the back wall 5 and the bottom wall 6 meet.

[0016] In a preferred embodiment, the line of weakness 13 of the bottom wall 6 extends partially along both side walls 3, 4. Advantageously, the line of weakness 13 of the bottom wall 6 extends along both side walls 3, 4 until it meets the point of origin O of each side wall 3, 4.

[0017] The lines of weakness 8, 13 are shaped in such a way that the bottom wall 6 can be brought closer to the front wall 2 by pressing the portion of the back wall 5 adjoining the second portion 10 of the seal 7 (pressing also brings the portion of the back wall 5 closer to the bottom wall 6); bringing the bottom wall 6 closer to the front wall 2 causes the container 1 to be folded down to a flat shape (collapse) and, at the same, allows the food product inside the container 1 to be poured out through the opening A.

[0018] In other words, by pressing the edge created by folding the second portion 10 of the seal 7 onto the

minor base 11 of the bottom wall 6, the consumer causes the structure of the container 1 to yield in a predictable (controlled) manner along the lines of weakness 8, 13. Predictable folding of the structure, caused by pressing, means that the container 1 changes from its initial shape (illustrated in Figure 1) to the intermediate configuration (illustrated in Figure 3) and lastly to the final, completely flat, final shape (illustrated in Figure 4).

[0019] Preferably, to make it easier for the structure of the container 1 to start collapsing along the lines of weakness 8, 13, the portion of the bottom wall 6, delimited at the top by the minor base 11 of the bottom wall 6 and at the bottom by the line of weakness 13, has a concave shape. Advantageously, in addition to the concave shape of the portion of the bottom wall 6, the side walls 3, 4 have a convex shape so as to facilitate yielding of the container 1.

[0020] In a preferred embodiment, the bottom wall 6 has an isosceles trapezoidal shape. In a further preferred embodiment, the bottom wall 6 has a scalene trapezoidal shape.

[0021] Preferably, the opening A is located on the front wall 2, confronting the minor base 11 of the bottom wall. At the opening A, the container 1 may comprise a covering element (for example, an adhesive tab made of plastic and/or paper material) removable by the consumer in order to open the container 1.

[0022] Alternatively to the covering element, the container 1 may comprise a closing element - preferably a capsule (cap - located at the opening A. In a different embodiment, the container 1 comprises a dispenser located at the opening A; preferably, the dispenser is shaped to be inserted (at least partly) into the opening A and to engage a closing element (specifically a cap) and the closing element is adapted to allow the container 1 to be opened and closed.

[0023] In a preferred embodiment, the container 1 contains a quantity of product suitable for a single serving; in other words, the container 1 is a single-serve container. In use, for the single-serve container 1, folding the structure of the container 1 causes all the food product it contains to be poured out.

[0024] In a further preferred embodiment, the container 1 contains a quantity of product suitable for multiple servings; in other words, the container 1 is a multi-serve container. In use, for the multi-serve container 1, folding the structure of the container 1 causes part of the food product it contains to be poured out.

[0025] Advantageously, the lines of weakness 8, 13 are made by a creasing process which involves using a creasing device. More specifically, in a possible configuration of it, a creasing device comprises a pair of facing rollers, where a first roller (male) is provided with protrusions on its outside surface, while the second roller (female) is provided with recesses to receive the wrapping material pressed into them by the protrusions of the first roller as the first roller rotates. That way, the wrapping material is creased and the lines of weakness 8, 13 thus

made. In a preferred embodiment, the first roller (male) operates on the surface of the wrapping material opposite to the surface of the wrapping material that is intended to be pressed (by the consumer); that way, the lines of weakness 8, 13 are oriented correctly to allow the container 1 to be folded down in predictable manner.

[0026] Alternatively, the lines of weakness 8, 13 are made by a partial incision process which involves using a laser device. More in detail, the process involves the use of a scoring laser to partially cut the wrapping material by removing part of the material from the surface of the container 1. That way, the lines of weakness 8, 13 are made without cutting the inner layer of the wrapping material (so the container 1 retains its aseptic properties). In a preferred embodiment, the laser device operates on the surface of the wrapping material opposite to the surface of the wrapping material that is intended to be pressed (by the consumer); that way, the lines of weakness 8, 13 are oriented correctly to allow the container 1 to be folded down in predictable manner.

[0027] The container 1 for pourable food products of this invention meets the need to allow the contents of the container to be poured out easily, smoothly and completely. The container 1 is thus particularly convenient to handle.

[0028] The invention can be advantageously be used for pourable food products such as, for example, liquid, semi-liquid and creamy food products. The shape of the container 1 disclosed allows even semi-liquid and creamy food products to be easily and completely poured out, preventing part of the product it contains from remaining trapped inside (and unable to be poured out).

[0029] Figure 5 illustrates a preferred configuration of a flat multilayer material before it is folded into a tubular shape (in the manner described herein) to make the container 1 of this invention. More specifically, it shows the layout of the lines of weakness 8, 13 for preferentially folding the side walls 3, 4 and the bottom wall 6. Still more specifically, each side wall 3, 4 in the preferred embodiment illustrated, preferably has three lines of weakness 8a, 8b, 8c, whilst the bottom wall 6 has only the line of weakness 13.

Claims

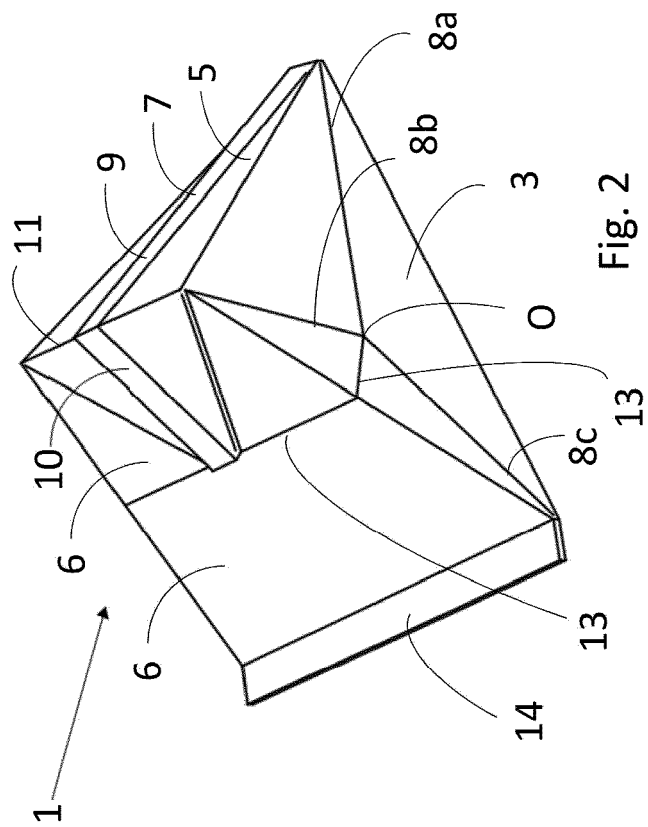
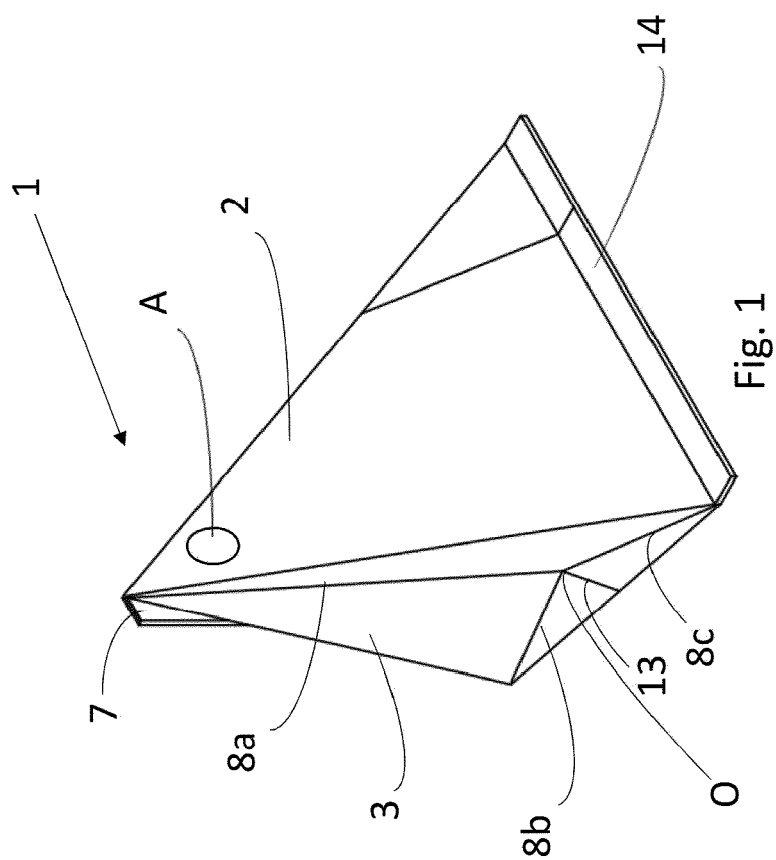
1. A container (1) for pourable food products made by sealing and folding a wrapping material; the container (1) being **characterized in that** it comprises: a front wall (2) provided with an opening (A); two triangular shaped side walls (3, 4); a back wall (5); a trapezoidal shaped bottom wall (6); and at least one seal (7); the container (1) having a structure in the shape of a pyramid with a trapezoidal base; the side walls (3, 4) and the bottom wall (6) each having at least one line of weakness (8, 13) for preferentially folding the container (1) so that the bottom wall (6) can be moved closer to the front wall (2), thereby

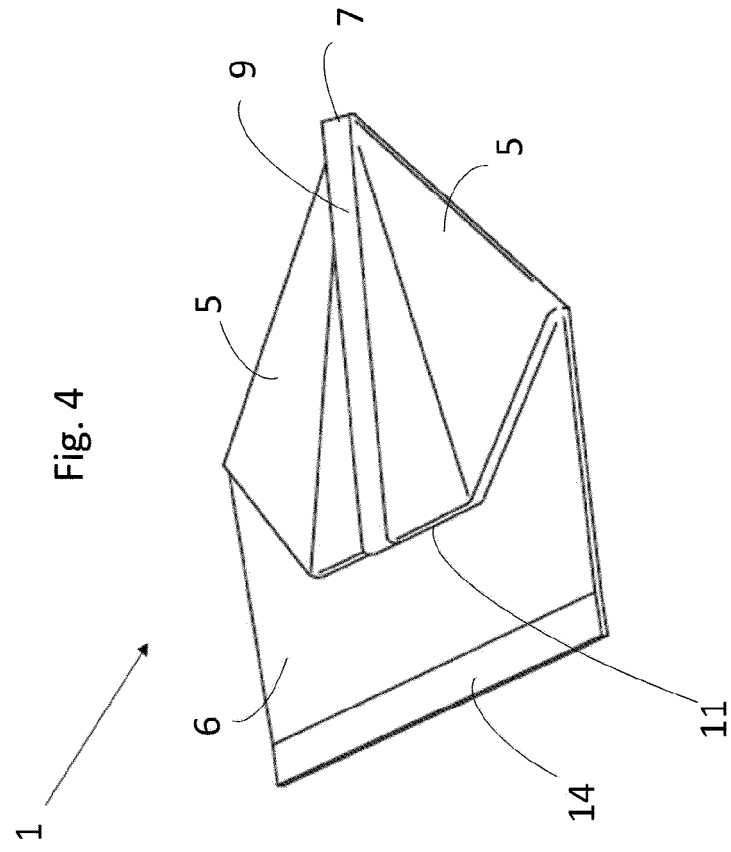
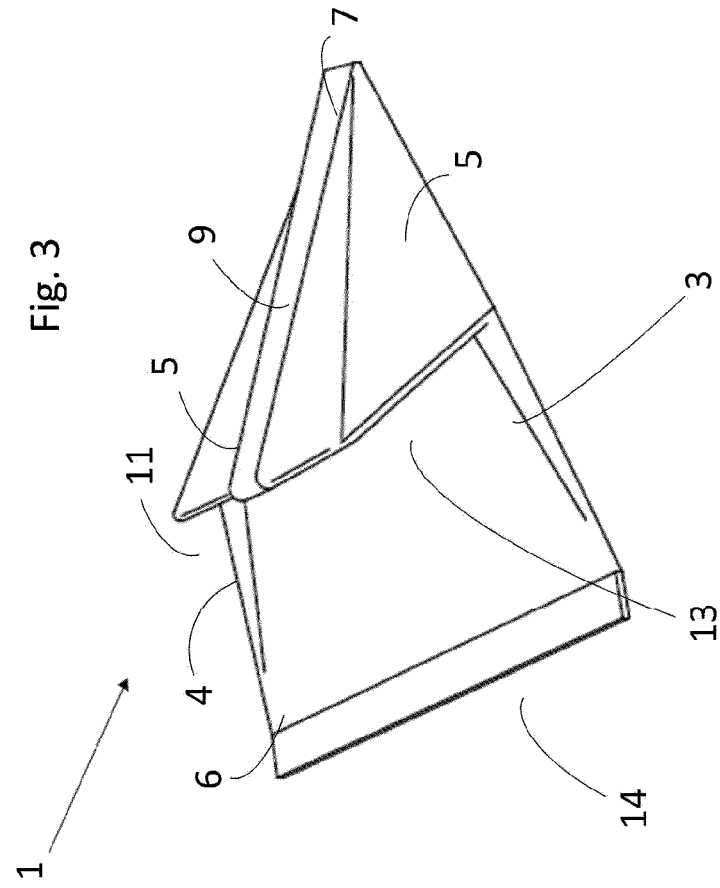
flattening the container (1), the flattening of the container (1) causing the food product inside the container (1) to be poured out through the opening (A).

2. The container (1) according to the preceding claim, 5
 wherein a first portion (9) of the seal (7) extends
 along the back wall (5), and a second portion (10) of
 the seal (7) is folded over and orthogonally overlaps
 the minor base (11) of the bottom wall (6). 10
3. The container (1) according to claim 2, wherein the
 line of weakness (13) of the bottom wall (6) is located
 in the proximity of, and parallel to, the minor base
 (11) of the bottom wall (6). 15
4. The container (1) according to claim 2, wherein the
 line of weakness (13) of the bottom wall (6) extends
 partially along both side walls (3, 4).
5. The container (1) according to any one of the pre- 20
 ceding claims, wherein each line of weakness (8) of
 each side wall (3, 4) has a point of origin (O) located
 on the respective side wall (3, 4); each line of weak-
 ness (8) extends from the point of origin (O) to a
 vertex of the side walls (3, 4). 25
6. The container (1) according to claim 5, wherein the
 line of weakness (13) of the bottom wall (6) extends
 along both side walls (3, 4) until it meets the point of
 origin (O) of each side wall (3, 4). 30
7. The container (1) according to any one of the pre-
 ceding claims, wherein the lines of weakness (8, 13)
 are shaped in such a way that the bottom wall (6)
 can be brought closer to the front wall (2) by applying 35
 pressure at the corner formed by the folding of the
 second portion (10) of the seal (7) on the minor base
 (11) of the bottom wall (6).
8. The container (1) according to any one of claims 1 40
 to 7, wherein the lines of weakness (8, 13) are made
 by creasing.
9. The container (1) according to any one of claims 1 45
 to 7, wherein the lines of weakness (8, 13) are made
 by laser scoring.

50

55





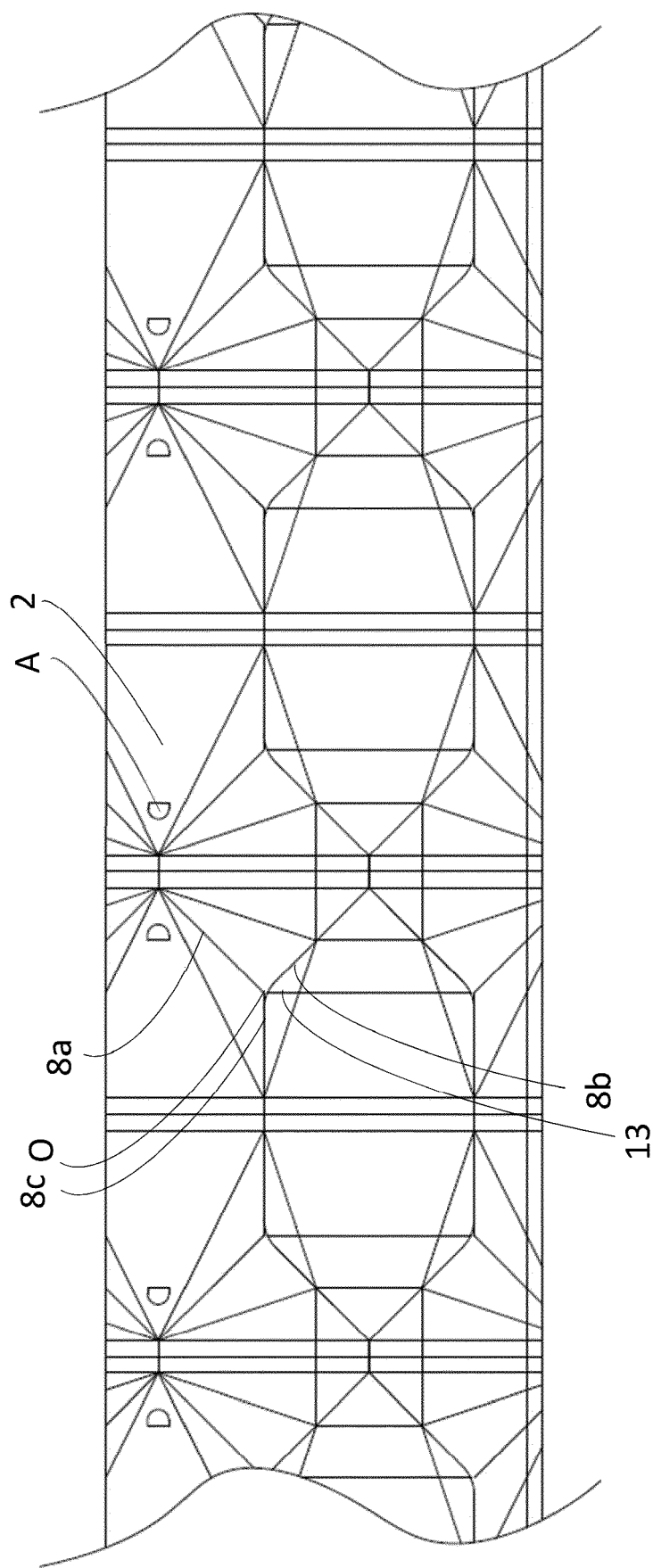


Fig. 5



EUROPEAN SEARCH REPORT

Application Number
EP 19 15 9463

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)
A	GB 1 508 053 A (LEER KONINKLIJKE EMBALLAGE) 19 April 1978 (1978-04-19) * figures 1-3 * -----	1-9	INV. B65D75/58 B65D5/06
			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 16 July 2019	Examiner Serbescu, Anca
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 03/02 (P04C01)

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

EP 19 15 9463

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.

16-07-2019

10

Patent document
cited in search report

Publication
date

Patent family
member(s)

Publication
date

15

GB 1508053 A 19-04-1978

AT 341938 B 10-03-1978

AU 499543 B2 26-04-1979

BE 830349 A 17-12-1975

BR 7503767 A 06-07-1976

CA 1018497 A 04-10-1977

CH 585653 A5 15-03-1977

DD 121501 A5 05-08-1976

DE 2526428 A1 02-01-1976

20

DK 273775 A 18-12-1975

ES 213468 U 16-06-1976

ES 438850 A1 16-04-1977

FI 751789 A 18-12-1975

FR 2274519 A1 09-01-1976

25

GB 1508053 A 19-04-1978

IE 42747 B1 08-10-1980

IL 47470 A 31-07-1977

IN 143031 B 24-09-1977

IT 1036306 B 30-10-1979

JP S5134079 A 23-03-1976

30

JP S5740003 B2 25-08-1982

LU 72752 A1 08-10-1975

NL 7408072 A 19-12-1975

NO 145088 B 05-10-1981

SE 412213 B 25-02-1980

35

US 3970240 A 20-07-1976

ZA 7503702 B 26-05-1976

40

45

50

55

CRM P0459

REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- WO 2004078607 A [0003]