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(54) Spacer element of containers such as bottles, flasks and the like, arranged in a bundle

(57) Spacer element of containers arranged in ordered groups of containers, known as bundles, comprising at least one pair of containers (3) brought together that are individually equipped at the top with a projecting portion, like a neck or a respective cap (4) or closing lid, where said element consists of a shaped body (2) with horizontal extension that has at least two openings intended to receive said projecting portion with which they engage thanks to their own fastening means.

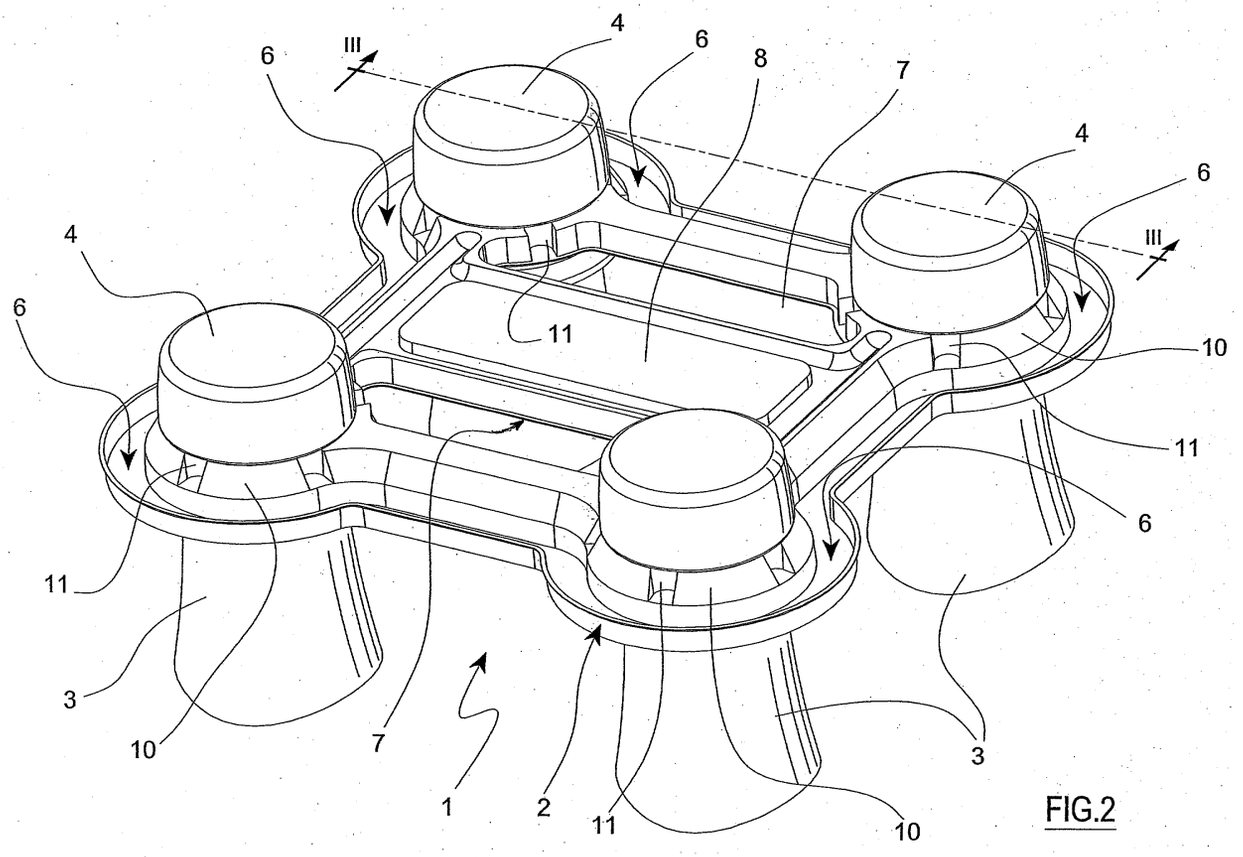

FIG.2

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Description

[0001] The present finding refers to a separator or spacer element that is intended to be associated with the upper part of an ordered group of objects, typically containers for food and other substances.

[0002] Hereafter, express reference shall be made to bottles and flasks, or even jars or pots, made from synthetic material or not, or rather containers comprising a hollow body equipped at the top with a narrow portion with which an end member is associated defining an undercut, like the one provided by the lower edge of the respective closing cap or lid.

[0003] Such containers, like for example plastic mineral water bottles, are generally entered into the commercial network in packages the comprise an ordered group of containers, for example two, four, six, etc., which are brought together and are in contact with each other.

[0004] Said groups, usually known as bundles, are generally kept congruent by a plastic wrapping band, and said band is generally provided with a synthetic tape that provides a handle for lifting and transporting the bundle.

[0005] Said practical system for packaging in bundles, which uses either a heat-shrinking synthetic sheet, or exploits the more recent technique of so-called shrink-packing, is particularly suitable for containers whose body has a straight section that is generally constant for most of its extension in height.

[0006] The same system lends itself poorly to the packaging of containers whose body is of a different shape from cylindrical or parallelepiped, for example that has a relatively long upper portion that tapers upwards, or rather in the direction of the respective cap.

[0007] Indeed, said consistent tapering ensures that, during the application of said synthetic band, its clamping force makes the packages lose their verticality, the upper ends of which are forced towards the inside and group together at the centre of the bundle.

[0008] A purpose of the present finding is that of providing a spacer element that during the preparation of said bundles is able to keep the respective containers positioned correctly with respect to each other whatever their shape or configuration.

[0009] Another purpose is that of making a spacer element that combines, as well as said spacer function, also the function of a gripping member for lifting and transporting the respective bundle.

[0010] Yet another purpose is that of providing a spacer element or separator suitable for being associated in a simple and quick manner with the containers constituting the bundle.

[0011] A further purpose consists of making a spacer element that can be obtained in a simple, quick and cost-effective manner.

[0012] Said purposes are accomplished thanks to the means indicated in the main claim.

[0013] Preferred embodiments of said means are outlined in the dependent claims.

[0014] The characteristics and constructive advantages of the finding shall become clear from the following detailed description, made with reference to the attached tables of drawings, where:

Fig. 1 is a perspective view from above that shows a spacer element according to the finding.

Fig. 2 is a perspective view similar to the previous one that shows the spacer element associated with a group of bottles.

Fig. 3 is the section III-III of fig. 2.

Fig. 4 is the section IV-IV of fig. 3.

[0015] From the quoted figures, see in particular fig. 2, it is possible to see a bundle, wholly indicated with 1, and a spacer element generically indicated with 2.

[0016] The bundle 1 that is shown comprises four identical containers 3 with a circular plan (fig. 4), for example plastic bottles closed by a normal screw cap 4 (fig. 2) that sits over an equally normal collar 5 (see figs. 3 and 4).

[0017] Of course, the number of containers 3 can be whatever, provided that they are preferably even in number, for example two, six, etc.

[0018] Moreover, the containers 3 can be any shape, provided that they are equipped with a cap or lid as specified in the preamble, or with another equivalent member suitable for providing an undercut, like for example an analogous body to the quoted collar 5.

[0019] The containers, or bottles, 3 are brought together and in contact with each other (see figs. 2-4), and are kept congruent by a normal side wrapping band, not shown for the sake of simplicity.

[0020] The element 2, clearly illustrated in fig. 1, is intended to be fastened to the top of the containers 3 making up the bundle 1 as represented in figs. 2-4. Said element 2 consists of a shaped body with horizontal extension, usually made from plastic, which is formed through a suitable technique.

[0021] In the case shown it is obtained by thermoforming from a sheet of synthetic material equipped with sufficient elasticity.

[0022] The synthetic material constituting said starting sheet can be whatever, provided that it is suitable for thermoforming.

[0023] Moreover, said starting sheet can be transparent or not, and can have any thickness suitable for the purpose, like from 0.2 to 2.0 mm.

[0024] As stated, for the quoted forming other advantageous techniques can be exploited, for example injection moulding, which shall obviously depend upon the material considered suitable for the purpose.

[0025] As is clearly illustrated in fig. 1, the flat shaped element 2 has a shape in plan that fits into a square, said square being contained in the shape in plan, also fitting into a square, of the group of four bottles 3 (see

fig. 4).

[0026] Along the perimetric edge of the element 2 runs a channel 6 with complete extension and with a constant straight section, which has four straight portions alternating with four curved portions (figs. 1-2) with extension equal to about three-quarters the circumference.

[0027] Parallel to two opposite straight portions of said channel 6, and close to them, there are two identical windows 7 that define a rectangular-shaped central band 8, arranged straddling the respective median line of said square shape in plane of the element 2.

[0028] Said windows 7 are sized so as to allow the passage of the finger of a hand, in order to be able to grip said central band 8, which obviously acts as a handle for gripping and lifting the bundle 1.

[0029] For said lifting, the element 2 is equipped with suitable fastening means of the bottles 3.

[0030] They comprise four identical openings 9 (fig. 1) that are arranged at the corners of said square shape of the element 2, immediately inside the curved portions of the channel 6.

[0031] In particular, each single opening 9 is provided by the upper mouth of a frusto-conical neck 10 (figs. 1-3).

[0032] The smaller base of said neck 10 has a diameter substantially equal to or slightly smaller than the average diameter of the lower circular edge of the cap 4 of the bottle 3, and its larger base has a diameter slightly greater than the outer diameter of the cap itself 4.

[0033] Moreover, the same neck 10 is equipped with a circumferential series of identical inlets equally angularly spaced apart 11.

[0034] The inner generatrices of said inlets 11 are intended to rest against the side surface of the part of the collar of the bottle 3 that is situated immediately below the cap 4, and their upper generatrices are intended to engage, from below, with the upper widened part of the collar of the bottle that defines the screwing seat of the cap 4 and/or with the lower edge thereof.

[0035] Finally, see fig. 3, the larger base of each single neck 10 is connected to the inner wall of the respective curved portion of channel 6, which inner wall acts as an alignment seat between caps 4 and openings 9 at the moment of associating the element 2 with the group of bottles 3.

[0036] Having carried out said alignment, the element 2 is pushed downwards, which involves the temporary elastic deformation outwards of necks 10 and inlets 11.

[0037] When the necks 10 go past the projecting lower edge of the caps 4, or of the widened upper portion of the collar of the bottles 3, the necks themselves 10 once again take up the original configuration, after which, by pulling the element 2 lightly upwards, they become arranged as specified previously, and as clearly illustrated in figs. 2 to 4.

[0038] The merits and advantages of the finding can clearly be understood from that which has been stated previously and from the examination of the attached figures.

Claims

1. Spacer element of containers arranged in ordered groups of containers, known as bundles, comprising at least one pair of containers (3) brought together that are individually equipped at the top with a projecting portion, like a neck or a respective cap (4) or closing lid, **characterised in that** it consists of a shaped body (2) with horizontal extension that has at least two openings intended to receive said projecting portion with which they engage thanks to their own fastening means.

2. Element according to claim 1, **characterised in that** said fastening means comprise a frusto-conical neck the smaller and larger bases of which have diameters that are respectively shorter and longer than the outer diameter of said projecting portion.

3. Element according to claim 2, **characterised in that** said frusto-conical neck is equipped with a circumferential series of identical indented projections that are equally angularly spaced apart, which are intended to elastically fasten below said projecting portion.

4. Element according to claim 1, **characterised in that** the portion of shaped body situated between said at least two openings is shaped like a handle for lifting the bundle.

5. Element according to claim 1, **characterised in that** said shaped body comprises four openings.

6. Element according to claim 5, **characterised in that** said shaped body has an overall shape in plan that is contained **in that** defined by the bundle.

7. Element according to claim 5, **characterised in that** said portion of body, shaped like a handle extends according to a median directrix situated between the two pairs of said group of four openings.

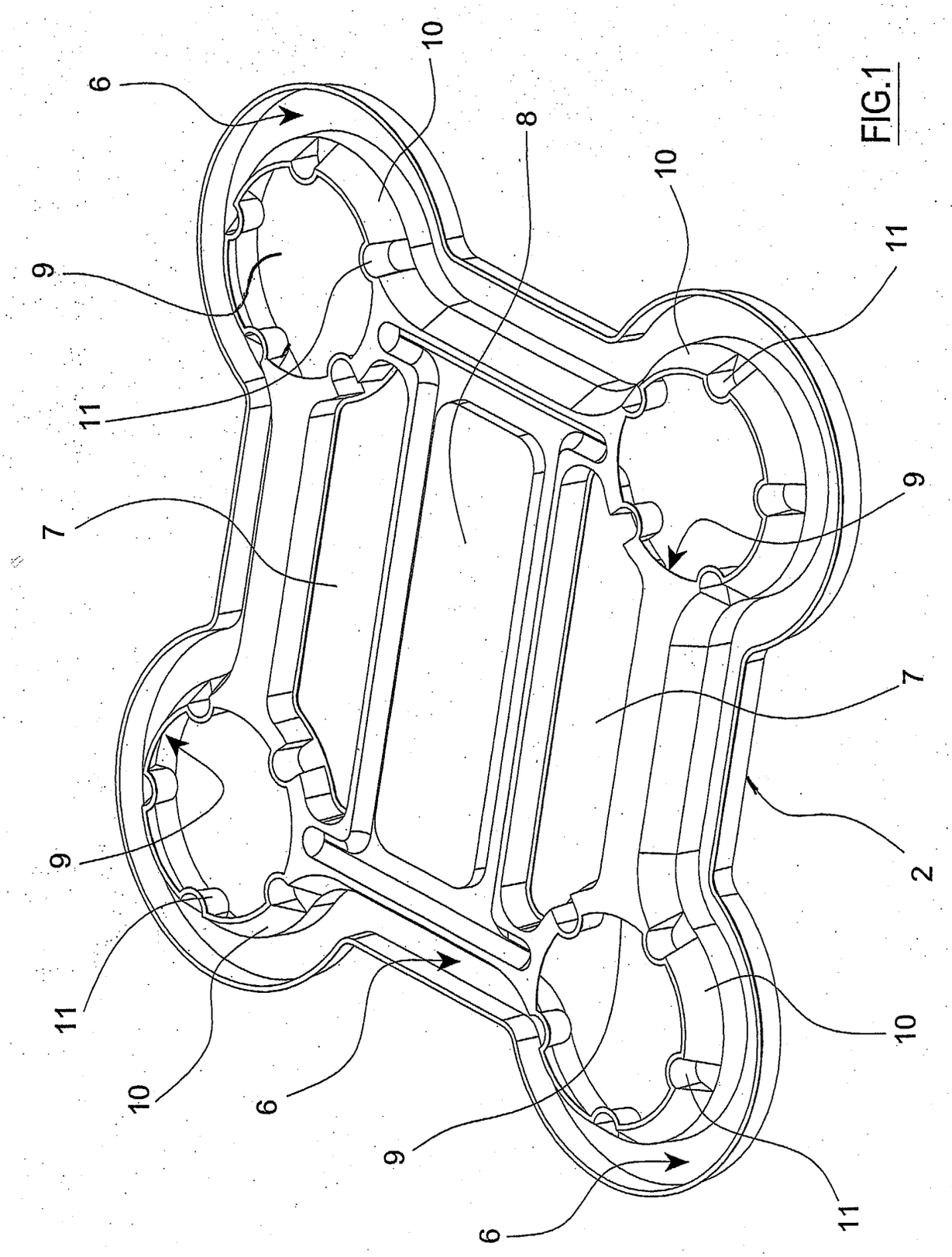

FIG.1

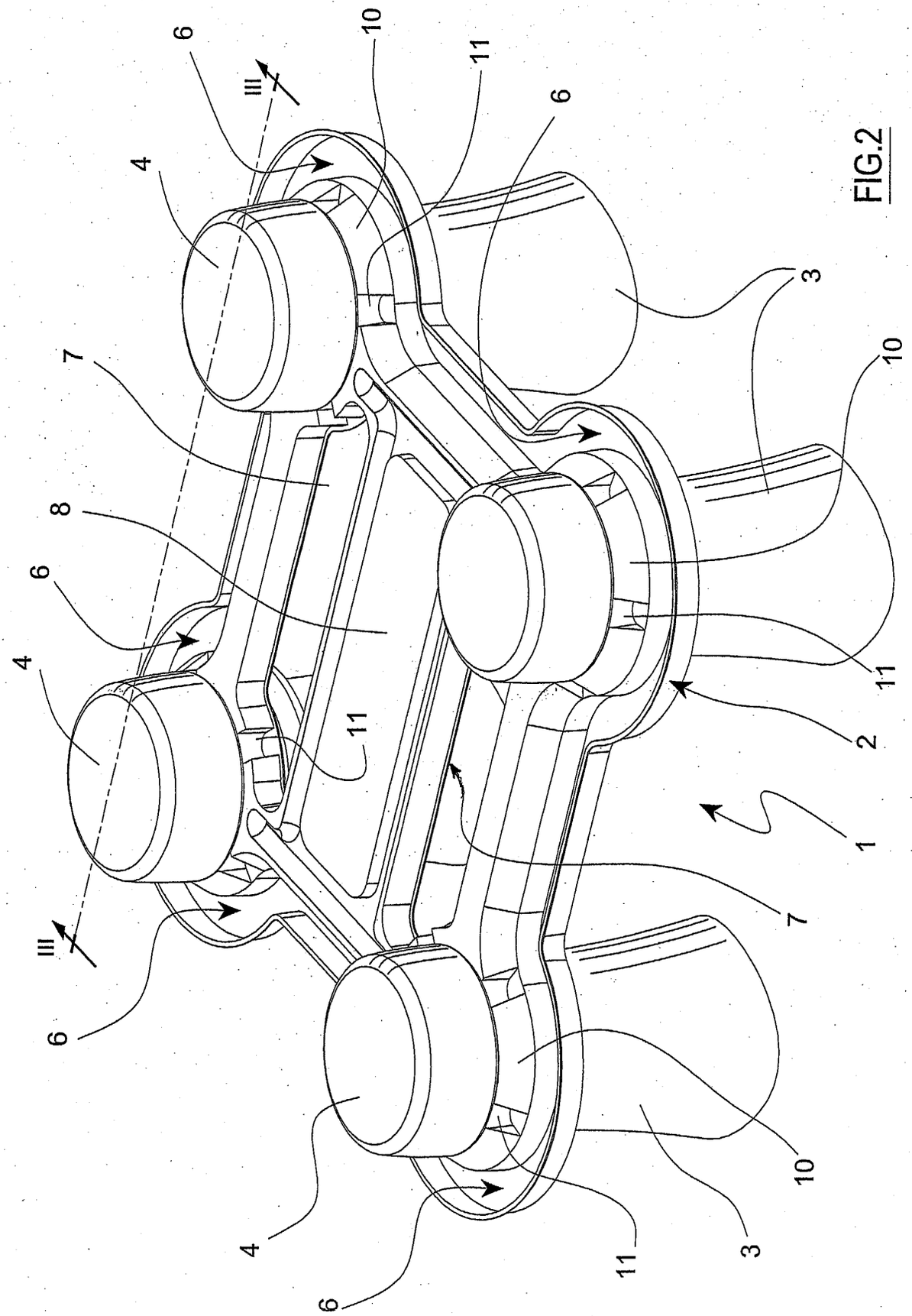

FIG.2

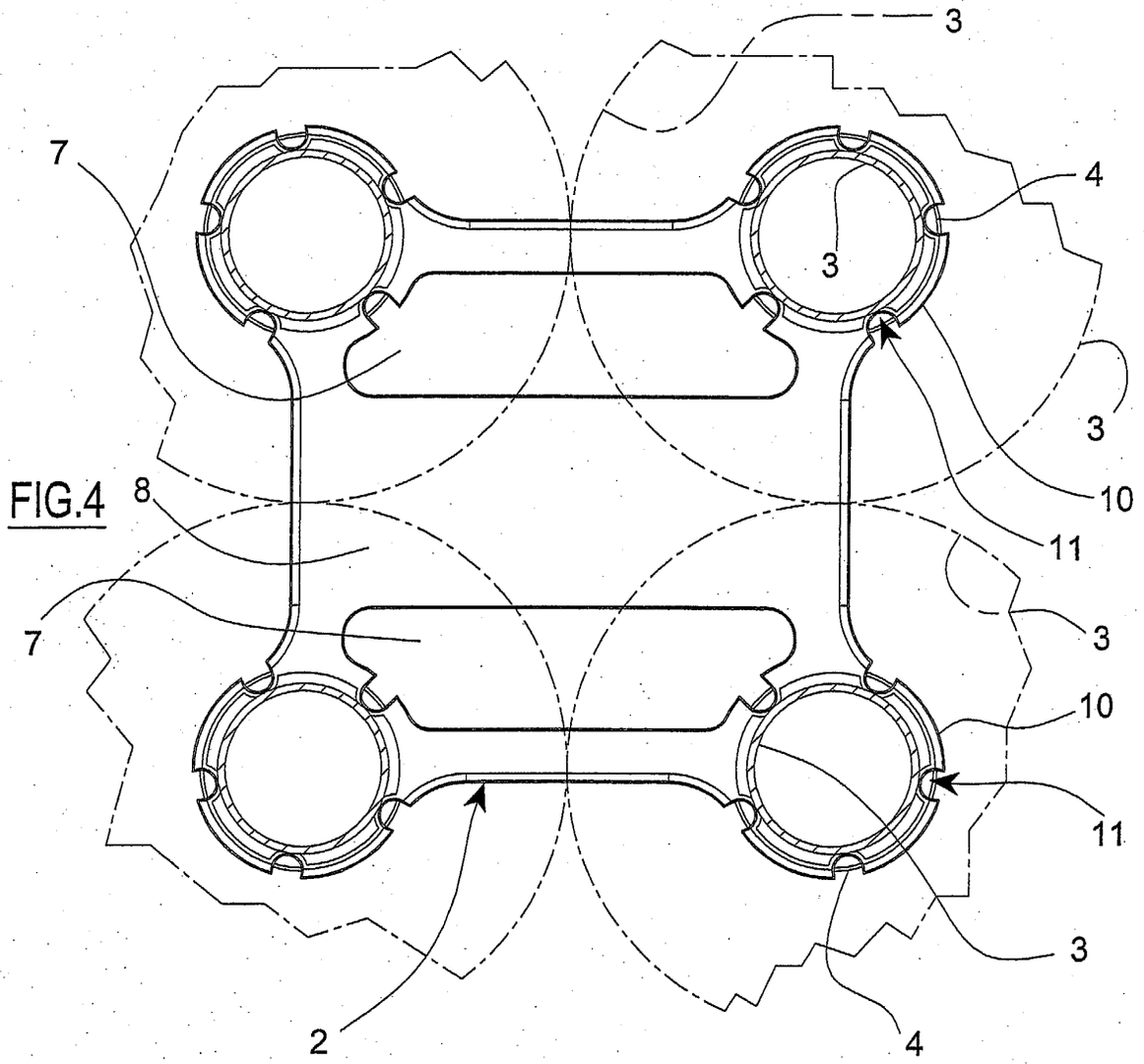

FIG.4

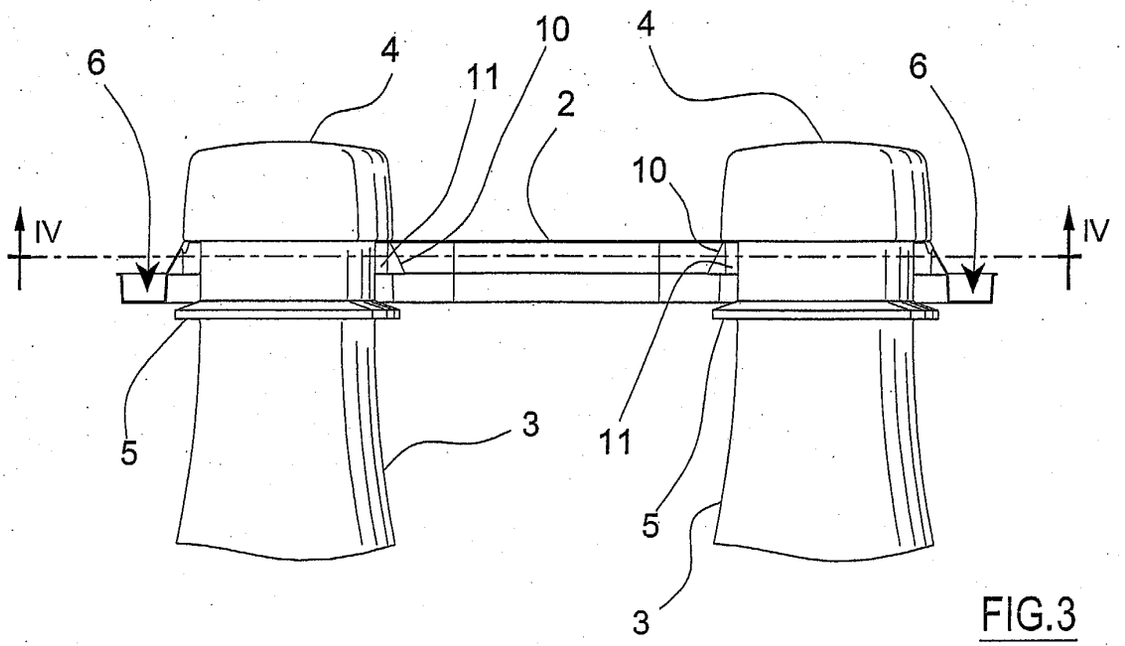

FIG.3

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EUROPEAN SEARCH REPORT

Application Number
EP 04 07 7861

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
X	WO 02/060780 A2 (DOMOKOS, JOZSEF) 8 August 2002 (2002-08-08) * page 9, line 8 - line 15; figure 5 *	1-7	B65D71/50
X	CA 2 330 220 A1 (OREGON PRECISION INDUSTRIES, INC) 5 July 2002 (2002-07-05) * claim 1; figures 1-5 *	1-7	
X,P	US 2004/046406 A1 (BORG JAMES C) 11 March 2004 (2004-03-11) * figures 2,4 *	1-4,6	
			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			B65D

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	31 January 2005	Bevilacqua, V

CATEGORY OF CITED DOCUMENTS

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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 04 07 7861

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
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31-01-2005

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