



(11) **EP 1 736 413 B1**

(12) **EUROPEAN PATENT SPECIFICATION**

(45) Date of publication and mention of the grant of the patent:
12.03.2008 Bulletin 2008/11

(51) Int Cl.:
B65D 5/48 (2006.01)

(21) Application number: **06012487.2**

(22) Date of filing: **19.06.2006**

(54) **Separator for using in packaging of items or products**

Abstandshalter für Produktverpackung

Séparateur pour l'emballage des produits

(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC NL PL PT RO SE SI SK TR

(30) Priority: **24.06.2005 AR 0502625**

(43) Date of publication of application:
27.12.2006 Bulletin 2006/52

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Description

[0001] The present invention refers to a separator for using in the packaging of various kinds of items or products such as unit packings made of glass, plastics, metal, ceramics and the like in boxes or in any other such type of containers, preferably for preparing the long- or short-distance transport of said items or products or for the conditioning during the storage thereof.

[0002] Various packaging elements are widely known for assuring that the packaged contents to be transported will undergo the smallest number possible of breakages or damages. Generally speaking, in the packaging of glass bottles, preferably wine bottles, different types of jigs are used for assuring the separation among the bottles arranged within boxes. These boxes usually carry six bottles per box, and the use of jigs prevents said packaged bottles to collide during transportation and handling.

[0003] In order to improve the transportation of said bottles arranged within boxes, a great variety of jigs are used made of materials such as corrugated cardboard, paperboard, plastics, which allow to attain a better stability during their transportation, thus minimizing the risks of breakages and damages. For instance, the better known jigs and in fact used nowadays, are those jigs comprising three individual plates, one of them being wider than the other two ones and presenting two cuts or troughs which project parallel towards the middle part of the plate, whereas the other two plates, smaller sized, show each a single groove with a size similar to the grooves of the widest plate. The assembling of said jig is easy and requires only the fitting of the smallest plates in the grooves of the biggest plate in such a way to be arranged transversally, the fitting of the biggest plate with the smaller ones, and the latter fitting parallel between themselves, thus defining a separator for six unit packings.

[0004] Although this kind of jig is easy to manufacture and its costs are low, it generates inconveniences in its assembling and also builds up dirt due to the fact that the grooves always show rough edges from which material become loose upon assembling said jig. Moreover, the time required for its assembling and positioning cause the use of said jig in a production line to create a bottleneck, it being necessary to assemble said jigs with anticipation and in a great number.

[0005] Another important drawback found with conventional jigs: although it is possible to assemble them in anticipation in order to avoid creating a bottleneck in the production line, once said jigs start moving, they often tend to disassemble, this requiring the operator to reassemble them, and this extends the packaging times and thus restricts the possibility to automate this operation. In order to solve said issue, jigs have been designed with the basic concept of the above-mentioned jigs but with the addition of a kind of lock in the groove base. This kind of lock provides that when assembling the jigs outside the production line, they do not disassemble when being

used. Unfortunately, although this approach is effective in assuring that the jig, once assembled, will not disassemble after its handling, the cost for obtaining this type of jig is high as compared with the conventional jig, the result being a high cost for packaging the product; besides, even so it is not possible to automate the packaging process.

[0006] Jigs are also known made of plastics, injected into moulds with predetermined sizes. Said jigs perform correctly, but their cost is high as compared with the conventional separators, this making the final cost of the product to increase joined to the drawback that they are made of a non-biodegradable material.

[0007] The embodiment disclosed by Patent of invention US2002-0017555 A1 to Taylor et al. is cited hereby as prior art. It refers to a "Method For Adhesively Bonding Laminates And Composite Structures". Said invention discloses the presence of flat strips (12) composed of adhesively bonded laminae (10) and (11). Specifically, as can be seen in Figure 4, there is provided a strip (24) extending between two opposed sides of the vessel to which the flat strips (25) and (26) are bonded.

[0008] Although this patent discloses a manner of using adhesive for forming multilaminar plates, as well as the connection between plates for defining spaces capable of storing a variety of objects, it neither shows nor teaches how to form spaces for inserting objects on the basis of two laminar plates joined together through a transversal adhesive stripe arranged in the middle zone of the opposing faces of both laminar plates.

[0009] Reference is also made to Patent of Invention EP 0 934 885 to the company Videcart SA (Es), which refers to a Separator for Cardboard Boxes. In this case it is preferred to use the combination of both flat strips (1) that extend between two opposed walls (4) of the box and dividing walls (2) in which each plate (2) is provided with flaps or marginal flanges (3, 3a) that are adhesively arranged to the flat strips (1) and the walls (4), thereby forming the compartments or spaces that receive the objects.

[0010] This prior art does not teach how to use an adhesive stripe so arranged in the middle portion of the opposing faces of two laminar plates that, by pulling apart the marginal ends of said plates it becomes possible to form the spaces aimed at receiving the objects.

[0011] It is therefore an object of present invention to provide a separator for using in the packaging of various kinds of items or products such as for instance packings made of glass, plastics, ceramics, metal, and the like in boxes or in any other such type of containers, preferably for the conditioning for the long- or short-distance transport of said items, and for the conditioning during the storage thereof, allowing to protect them in a correct way, the separator having to be very easy to position, and to be produced fast, simply and at a very low cost.

[0012] Therefore, an object of present invention is to provide a separator for using in the packaging of various kinds of items or products such as for instance packings

made of glass, plastics, ceramics, metal, and the like in boxes or in any other such type of containers, preferably for the conditioning for the long- or short-distance transport of said items, and for the conditioning during the storage thereof, the separator comprising at least a first sheetlike plate and a second sheetlike plate, said first and second sheetlike plates being joined in their faces by means of at least one adhesion point.

[0013] Another object of present invention is to provide a separator for using in the packaging of various kinds of items or products such as for instance packings made of glass, plastics, ceramics, metal, and the like in boxes or in any other such type of containers, preferably for the conditioning for the long- or short-distance transport of said items, and for the conditioning during the storage thereof, allowing to facilitate its manual positioning and further allowing its positioning by automated means, commercially available or not.

[0014] And yet another object of present invention is to provide a separator for using in the packaging of various kinds of items or products such as for instance packings made of glass, plastics, ceramics, metal, and the like in boxes or in any other such type of containers, preferably for the conditioning for the long- or short-distance transport of said items, and for the conditioning during the storage thereof, the separator being an integral part and allowing its use for various types of items or products. And a further object of present invention is to provide a separator for using in the packaging of various kinds of items or products such as for instance packings made of glass, plastics, ceramics, metal, and the like in boxes or in any other such type of containers, preferably for the conditioning for the long- or short-distance transport of said items, and for the conditioning during the storage thereof, said separator providing a considerable reduction of the storage room needed and avoiding at the same time the loosening or liberation of material from rough edges upon being manipulated.

[0015] For greater clarity and better understanding of the object of present invention, same has been illustrated in several figures, the latter representing the invention in one of the preferred embodiments, all of them in an exemplary way, and wherein:

Figure 1 is a perspective view of the separator object of present invention;

Figure 2 is a perspective exploded view of the separator of Figure 1;

Figure 3 is a perspective view of a first alternative embodiment of the separator of Figure 1;

Figure 4 is a perspective view of a second alternative embodiment of the separator of Figure 1; and

Figure 5 is a perspective view showing the utilization of the separator with bottles.

[0016] Referring now to Figures 1 and 2, it is possible to view the separator object of present invention denoted with the general reference number (1), comprising at

least a first sheetlike plate (2) and a second sheetlike plate (3). Both plates are substantially quadrangular-shaped and may be made of any kind of material, such as corrugated cardboard, paperboard, plastics, etc. Said plates (2) and (3) are joined in their respective faces, (4) and (5), by at least one adhesion point (6). It should be mentioned that in present particular embodiment said at least one adhesion point (6) is defined through transversal adhesion stripe (7), shown in phantom lines.

[0017] Importantly, said at least one adhesion point (6) may be represented in a variety of ways, such as for instance a transversal segmented adhesion line or any other manner for adhering both sides or faces (4) and (5). This adhesion point allows attaining folding areas in the sheetlike plates for conforming packaging spaces.

[0018] Figure 1 shows that adhesion stripe (7) is positioned in the middle part of the sheetlike plates' side. This causes that upon manipulating separator (1) and separating ends (8) and (9) of the respective plates (2) and (3), the adhesion stripe allows the folding of sheetlike plate (3) in such a way to form three spaces for the insertion of bottles (10) (see Figure 5). It is therefore apparent that the conformation of separator (1) object of present invention is basically the joining of plates (2) and (3), face (4)'-to-face (5) by means of at least one adhesion point (6).

[0019] Referring now to Figure 3, a first alternative embodiment is shown. It should be mentioned that for a better understanding of the invention, similar parts are designated with similar reference numbers. Indeed, this first alternative embodiment of separator (11) rests on the same basic principle as separator (1), i.e., it comprises mainly a first sheetlike plate (2) and a second sheetlike plate (3), joined at their faces (4) and (5) by means of at least one adhesion point (6) defined by an adhesion stripe (7). However, the difference resides in the fact that further to said first and second plates, (2) and (3) respectively, a third plate (12) has been added joined by its face (13) to the face opposite to face (4) of sheetlike plate (2). As shown in Figure 3, the addition of a third sheetlike plate (12) in separator (11), allows to attain twice the spaces for accommodating the bottles (10), i.e., the space shown in Figure 5 is increased twofold.

[0020] Turning now to Figure 4, same illustrates a second alternative embodiment for a separator (14), also comprising first and second sheetlike plates, (2) and (3), but unlike the above explained embodiments, sheetlike plates (2) and (3) are joined in their faces (4) and (5) by means of two adhesion stripes (7). It should be mentioned that the utilization of two adhesion stripes (7) in separator (14) allows to provide packaging spaces for items with a square or rectangular transversal section. It is important to point out that based on the disclosure in present description any person skilled in the art to which present invention belongs, will be able to realize a separator with twice the packaging spaces by utilizing the principle explained when referring to Figure 3, i.e., by merely adding a third sheetlike plate (not shown) joined in its face to

first sheetlike plate (2) and by utilizing two adhesion stripes (7). It should be noted that although adhesion stripes (7) have been shown arranged parallel, their arrangement and mutual separation will depend on the product to be packaged, it being possible to accommodate unit packings with any geometrical configuration. Referring again to Figures 1, 3 and 5, it should be pointed out that although first and third plates, (2) and (12) respectively, have been illustrated provided with a noticeable curvature, in fact the latter is not attained until the separator is inserted among the items to be separated - in this particular case the bottles -, the original state of the separator, be it separator (1), (11) or (14), being flat or plane, as shown in Figure 2. On the other hand, it is important to make clear that the adhesion stripe may be implemented with any kind of adhesive commercially available, but same has to be strong enough for resisting the load exerted by the inherent resiliency of the material from which the separator is made, i.e., the thicker the sheetlike plate, the greater the strength of the adhesive will have to be.

Claims

1. A separator for using in the packaging of various kinds of items or products such as packings made of glass, plastics, ceramics, metal, and the like in boxes or in various type of containers made of various materials, preferably for the conditioning for short-distance transport or long-distance transport of the various items or products, and for the conditioning during the storage of said items, said separator comprising a first sheetlike plate (2) and a second sheetlike plate (3) joined together by adhesive, **characterized in that** the adhesive joining of said first and second sheetlike plates (2,3) is achieved by means of adhesion points that define at least a first transversal adhesion stripe (7) arranged in the central zone of the opposing faces of said first and second plates.
2. The separator according to claim 1, **characterized in that** it further comprises a third plate (12) similar to said first and second plates (2) and (3), said third plate (12) being supportedly arranged on the non-adhered face of said first plate (2).
3. The separator according to claim 2, **characterized in that** said third plate (12) supported on the non-adhered face of said first plate (2), is adhered by means of a second transversal adhesion stripe symmetrically opposed to said first transversal adhesion stripe (7).
4. The separator according to claim 3, **characterized in that** said first and second transversal adhesion stripes define folding zones of said first and third

sheetlike plates.

Patentansprüche

1. Trennvorrichtung zur Verwendung bei der Verpackung von verschiedenen Arten von Gegenständen oder Produkten, beispielsweise aus Glas, Kunststoff, Keramik, Metall und dergleichen hergestellten Verpackungen, in Kartons oder verschiedenen Arten von Behältern, die aus verschiedenen Materialien hergestellt sind, vorzugsweise zur Aufbereitung der verschiedenen Gegenstände oder Produkte für den Kurzstreckentransport oder Langstreckentransport und zur Aufbereitung während der Lagerung der Gegenstände, welche Trennvorrichtung eine erste tafelfartige Platte (2) und eine zweite tafelfartige Platte (3) enthält, die durch Klebstoff miteinander verbunden sind, **dadurch gekennzeichnet, dass** die Klebeverbindung der ersten und der zweiten tafelfartigen Platte (2, 3) durch Klebepunkte erreicht wird, die mindestens einen ersten quer verlaufenden Klebestreifen (7) bilden, der in dem Mittelbereich der einander gegenüberliegenden Flächen der ersten und der zweiten Platte angeordnet ist.
2. Trennvorrichtung nach Anspruch 1, **dadurch gekennzeichnet, dass** sie ferner eine dritte Platte (12) ähnlich der ersten und der zweiten Platte (2) und (3) enthält, welche dritte Platte (12) an der nicht verklebten Fläche der ersten Platte (2) befestigt angeordnet ist.
3. Trennvorrichtung nach Anspruch 2, **dadurch gekennzeichnet, dass** die dritte Platte (12), die an der nicht verklebten Fläche der ersten Platte (2) befestigt ist, mittels eines zweiten quer verlaufenden Klebestreifens verklebt ist, der dem ersten quer verlaufenden Klebestreifen (7) symmetrisch gegenüberliegt.
4. Trennvorrichtung nach Anspruch 3, **dadurch gekennzeichnet, dass** der erste und der zweite quer verlaufende Klebestreifen Faltzonen der ersten und der dritten tafelfartigen Platte bilden.

Revendications

1. - Séparateur pour utilisation dans l'emballage de différents types d'articles ou de produits tels que des emballages réalisés en verre, en plastique, en céramique, en métal, et en matériaux similaires, dans des boîtes ou dans différents type de récipients réalisés en matériaux divers, de préférence pour le conditionnement pour le transport à courte distance ou pour le transport à longue distance des divers articles ou produits, et pour le conditionnement pendant le stockage desdits articles, ledit séparateur com-

prenant une première plaque (2) substantiellement en forme de feuille et une deuxième plaque (3) substantiellement en forme de feuille reliées ensemble par un adhésif, **caractérisé en ce que** l'adhésif reliant lesdites première et deuxième plaques substantiellement en forme de feuille (2, 3) est réalisé au moyen de points d'adhésion qui définissent au moins une première bande d'adhésion transversale (7) agencée sur la zone centrale des faces opposées desdites première et deuxième plaques.

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2. - Séparateur selon la revendication 1, **caractérisé en ce qu'**il comprend en outre une troisième plaque (12) similaire auxdites première et deuxième plaques (2) et (3), ladite troisième plaque (12) étant agencée de façon à être supportée sur la face non-adhérente de ladite première plaque (2).

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3. - Séparateur selon la revendication 2, **caractérisé en ce que** ladite troisième plaque (12) supportée sur la face non-adhérente de ladite première plaque (2), est collée au moyen d'une deuxième bande d'adhésion transversale symétriquement opposée à ladite première bande d'adhésion transversale (7).

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4. - Séparateur selon la revendication 3, **caractérisé en ce que** lesdites première et deuxième bandes d'adhésion transversales définissent des zones pliantes desdites première et troisième plaques substantiellement en forme de feuille.

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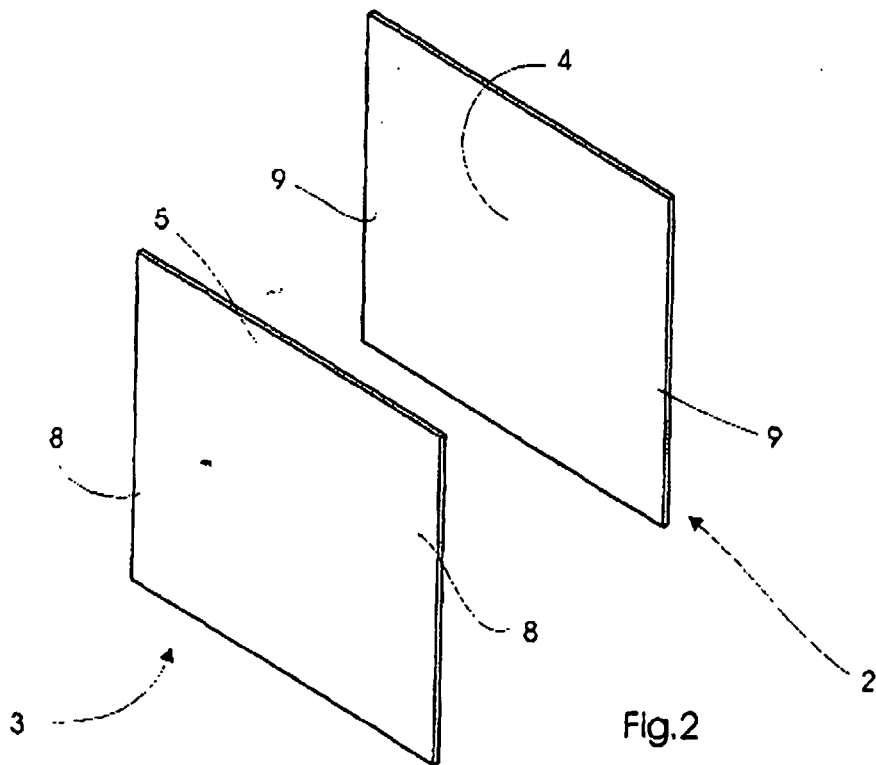
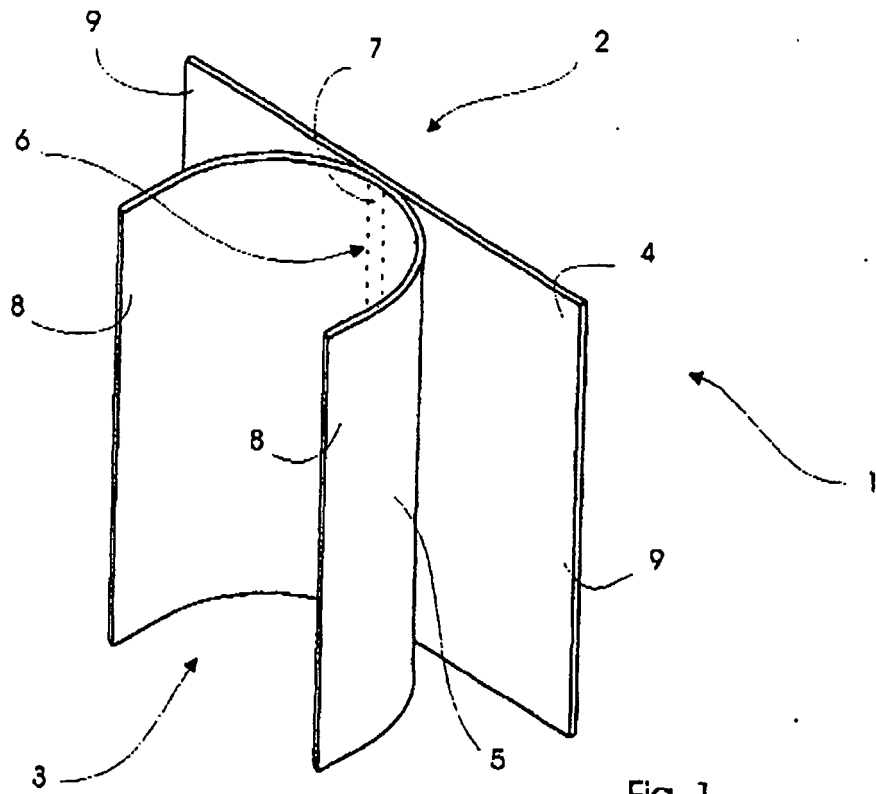
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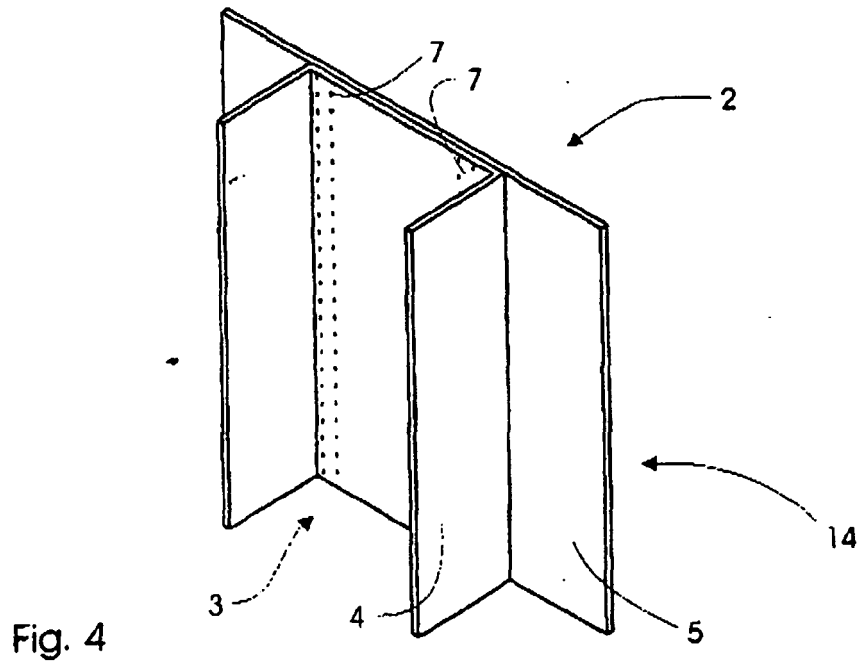
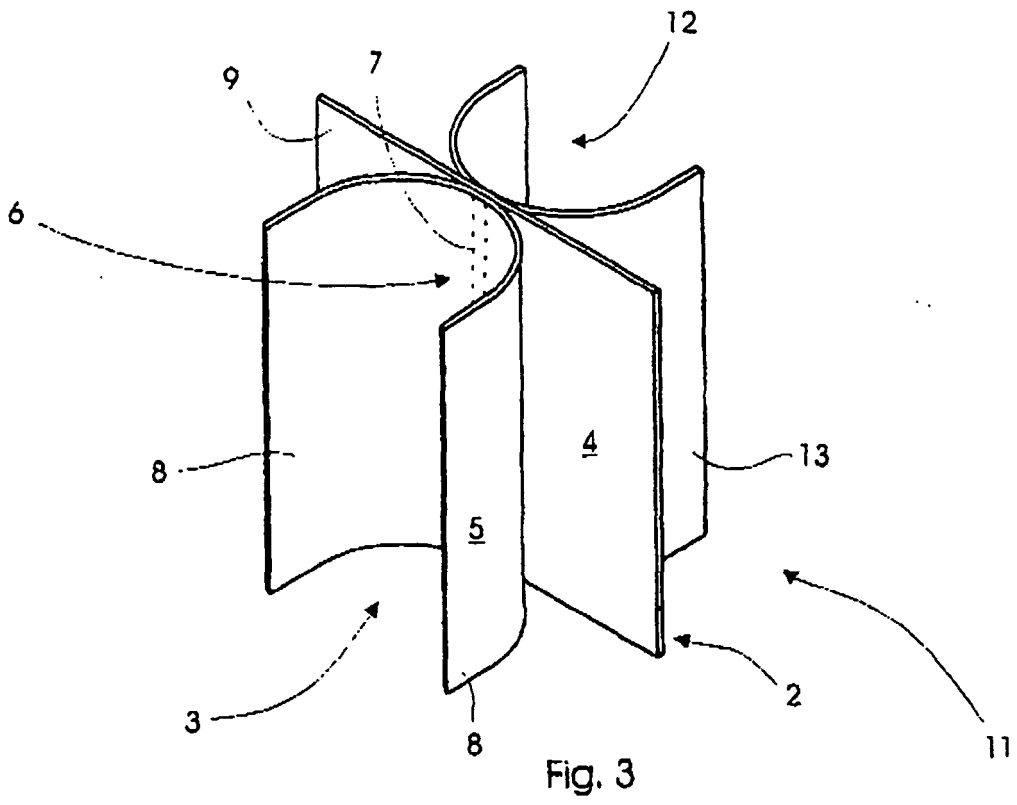
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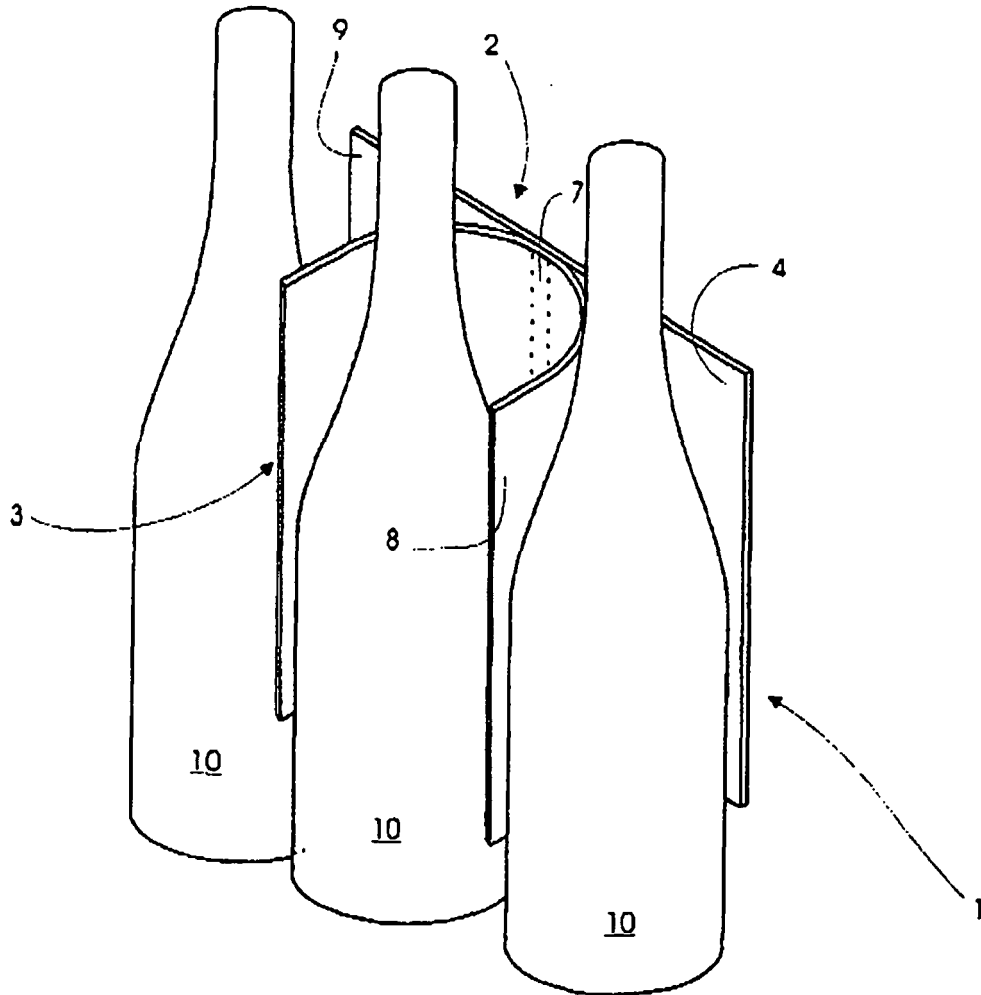


Fig. 5

REFERENCES CITED IN THE DESCRIPTION

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- US 20020017555 A1, Taylor **[0007]**
- EP 0934885 A **[0009]**