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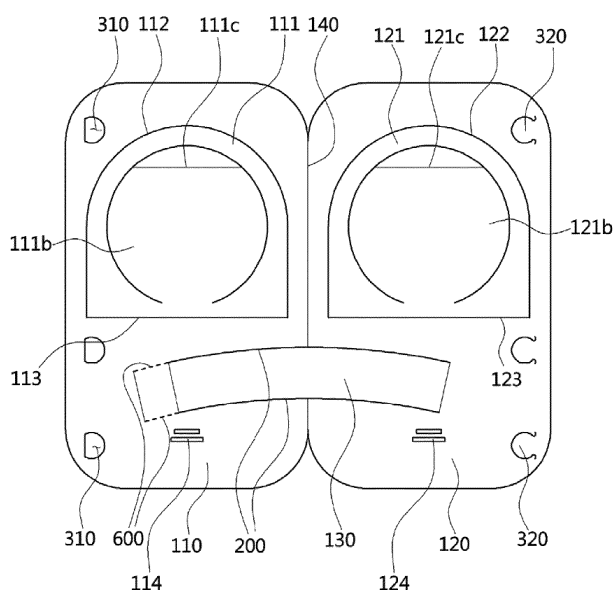
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(54) **RESOURCE-SAVING, ENVIRONMENTALLY FRIENDLY ADHESIVE-FREE CUP CARRIER**

(57) The present invention relates to a resource-saving, environmentally friendly adhesive-free cup carrier, wherein a space for holding cups is variably configured so that the cup carrier can be transformed and utilized in

accordance with the number of cups to be carried, and, even when a plurality of cups are held in one cup carrier, the weight of the cups can be effectively supported so that the stability of the cup carrier can be secured.

[Fig. 4]



## Description

[Technical Field]

**[0001]** The present invention relates to a resource-saving, environmentally friendly adhesive-free cup carrier, and more particularly to a resource-saving, environmentally friendly adhesive-free cup carrier, in which a space for holding cups is variably configured so that the cup carrier can be transformed and utilized in accordance with the number of cups to be carried.

[Background Art]

**[0002]** Many well-known fast food and coffee shops sell a variety of drinks, including soda, cider, and juice. Since these drinks are easy to carry, people often consume them while on the go. In this case, one hand is holding a cup of beverage and the other is holding food.

**[0003]** When people hold a beverage container in one hand and a food container in the other hand, it is difficult to balance the beverage container. Thereby, there is a possibility of dropping the drink or food while moving, and there is a problem that the behavior is not natural because both hands cannot be used.

**[0004]** So as to overcome these problems, various carriers for beverage containers have been developed.

**[0005]** FIG. 1 illustrates a beverage container carrier according to an existing technology.

**[0006]** As shown in FIG. 1, a beverage container carrier according to the existing technology is constituted of a box 10 with an opened top including a hook-shaped male catching piece 11 formed on one side of one side surface of the carrier and a female slit hole 12 formed on another side thereof; a hanger piece 14 horizontally extending from an opened top of the box 10 and having a handle hole 13; and a handle 17 formed of support pieces 15 and 16 that extend, in a planar right angle, from both sides of the hanger piece and extend integrally with an upper end of the opening of the box 10.

**[0007]** However, beverage container carriers according to the existing technology have certain volumes, thereby occupying predetermined spaces. Accordingly, a separate place for storing a carrier should be provided, and the number of carriers that can be stored is also very limited.

**[0008]** In addition, in the case of existing beverage container carriers, the number of beverage container accommodation spaces that can be accommodated in the container carriers is fixedly provided. For example, upon desiring to carry three beverage containers using a container carrier that can accommodate two beverage containers, at least two container carriers should be provided to accommodate and carry the three beverage containers separately. Accordingly, it is not easy to balance a container carrier containing one beverage container because the weight thereof is oriented in a direction in which the beverage container is accommodated. In addition,

the use of the container carrier is inefficient because a surplus space in which a beverage container is not accommodated remains.

**[0009]** In addition, since existing beverage container carriers should be necessarily subjected to a process of bonding members so as to maintain constant shape thereof, a carrier manufacturing process is complicated, and thus problems, such as an increase in manufacturing cost and a decrease in utility, are entailed.

**[0010]** Since existing beverage container carriers are manufactured based on the largest cup among beverage containers, it is inconvenient for a drink maker and an orderer to put and take out a beverage container and beverages therein spill due to mistakes, for example, when the beverage container is small. Further, when the beverage is hot, the drink maker and orderer may be scalded by the beverage.

Related Art Document

Patent Document

**[0011]** Korean Utility Model Registration No. 20-0474366

[Disclosure]

[Technical Problem]

**[0012]** Therefore, the present invention has been made in view of the above problems, and it is one object of the present invention to provide a resource-saving, environmentally friendly adhesive-free cup carrier, wherein a space for holding cups is variably configured so that the cup carrier can be transformed and utilized in accordance with the number of cups to be carried, and, even when a plurality of cups are held in one cup carrier, the weight of the cups can be effectively supported so that the stability of the cup carrier can be secured.

**[0013]** It is another object of the present invention to provide a resource-saving, environmentally friendly adhesive-free cup carrier allowing cost reduction and production efficiency increase due to omission of a bonding process upon manufacture of the cup carrier.

**[0014]** It is yet another object of the present invention to provide a resource-saving, environmentally friendly adhesive-free cup carrier that can be conveniently used due to omission of a separate assembly process of forming a skeleton of a cup carrier, allows easy storage due to minimization of a volume occupied by the cup carrier, is easy to use due to rapid deployment of the cup carrier, and can suit different cup sizes to accommodate a variety of cups.

[Technical Solution]

**[0015]** In accordance with an aspect of the present invention, the above and other objects can be accom-

plished by the provision of a resource-saving, environmentally friendly adhesive-free cup carrier, including: a plate-shaped plate material 100 folded in half by a central bending line 140 to be divided into a first plate 110 and a second plate 120; a first cradle 111 formed by cutting a portion of an upper part of the first plate 110 to be foldable and configured to include a first fixture hole 111a for mounting a cup in the center thereof; a second cradle 121 formed by cutting a portion of an upper part of the second plate 120 to be foldable and configured to include a second fixture hole 121a for mounting a cup in the center thereof; and a third holding piece 130 formed from the plate material 100 by a pair of incision lines 200 for simultaneously cutting lower parts of the first plate 110 and the second plate 120, wherein a movable piece is partially cut from at least one of the first and second cradles 111 and 121 to be foldable, and the third holding piece 130 configured to form a virtual hollow portion while being drawn out to an inner side where the first and second plates 110 and 120 face each other when the first and second plates 110 and 120 are folded in a direction facing each other so that a cup can be mounted in the hollow portion.

**[0016]** In addition, the movable piece may include a bent line by which an end thereof is folded, insertion holes where the folded movable piece is inserted and fixed may be formed to penetrate a lower part of at least one of the first and second plates, and, when the end is inserted into and fixed to the insertion holes to support an outer circumferential surface of a cup, the cup may be kept horizontal.

**[0017]** In addition, the cup carrier may be made of a plate material and may further include a fixation means for maintaining a folded state of the first plate and the second plate when the first plate and the second plate are folded to face each other.

**[0018]** In addition, the resource-saving, environmentally friendly adhesive-free cup carrier may further include a variable means for varying a diameter of at least one of the first fixture hole and the second fixture hole, wherein the variable means is formed at at least one of the first cradle and the second cradle.

**[0019]** The resource-saving, environmentally friendly adhesive-free cup carrier may further include a support piece for preventing the plate material from eccentrically inclining, wherein the support piece is formed by cutting a portion of the plate material to be pulled out from one side of the plate material and to be supported by the ground.

#### [Advantageous effects]

**[0020]** The present invention has the following effects.

**[0021]** First, since a third holding piece can be selectively drawn out in accordance with the number of cups to be carried, it is possible to prevent the occurrence of a surplus space in which a cup is not accommodated, and the cup carrier can be appropriately transformed and

utilized in accordance with the number of cups to be carried.

**[0022]** Second, in manufacturing cup carriers, a bonding process and a separate assembly process of forming the skeleton of a cup carrier can be omitted, thereby reducing production costs and increasing production efficiency.

**[0023]** Third, since first and second cradles of the present invention are formed by folding predetermined portions of a flat plate material, the volume of the cup carrier of the present invention can be minimized during storage, thereby increasing the ease of storage, and the cup carrier can be rapidly deployed, thereby allowing convenient use.

**[0024]** Fourth, since cups can be respectively mounted in the first to third cradles, a plurality of cups can be accommodated in one cup carrier.

**[0025]** Fifth, since a support piece can effectively support the weights of cups, the stability of the cup carrier can be secured.

**[0026]** Sixth, since the diameter of a fixture hole can be variously adjusted to fit cups having various sizes by a variable means, cups having various sizes can be accommodated in the cup carrier.

#### [Description of Drawings]

#### [0027]

FIG. 1 is a conceptual view illustrating a beverage container carrier according to an existing technology.

FIGS. 2 and 3 are perspective views illustrating use states of cup carriers of the present invention.

FIG. 4 illustrates a deployment view of a cup carrier according to the present invention.

FIG. 5 is a perspective view illustrating a use state of a cup carrier of the present invention when a third holding piece is not used.

FIG. 6 is a conceptual view illustrating actions of first and second movable pieces.

FIG. 7 is a conceptual view illustrating an adjustment example of an angle formed by an end of a first movable piece.

FIG. 8 is a perspective view illustrating a use state of a cup carrier according to another embodiment of the present disclosure.

FIG. 9 illustrates a deployment view of the cup carrier shown in FIG. 8.

FIG. 10 is a perspective view illustrating a use state of the cup carrier shown in FIG. 8 when a third holding piece is not used.

FIGS. 11 and 12 are deployment views schematically illustrating various embodiments of a plate material.

FIG. 13 is a conceptual view illustrating a billboard according to the present invention.

FIG. 14 is a conceptual view schematically illustrating

ing a process of cutting plate materials according to the present invention in a base plate.

FIG. 15 is a photograph illustrating an actual use state of a cup carrier according to the present invention.

[Best mode]

**[0028]** The present invention will be described in detail by explaining exemplary embodiments of the invention with reference to the attached drawings. The invention may, however, be embodied in many different forms and should not be construed as being limited to the embodiments set forth herein; rather, these embodiments are provided so that this disclosure will be thorough and complete, and will fully convey the concept of the invention to those skilled in the art. In the drawings, the shapes of elements may be exaggerated for clarity. It should be noted that like reference numerals in the drawings denote like elements. A detailed description of known functions and configurations incorporated herein will be omitted when it may make the subject matter of the present invention unclear.

**[0029]** A cup carrier according to the present invention includes a plate-shaped plate material 100 folded in half by a central bending line 140 to be divided into a first plate 110 and a second plate 120; a first cradle 111 formed by cutting a portion of an upper part of the first plate 110 to be foldable and configured to include a first fixture hole 111a for mounting a cup in the center thereof; a second cradle 121 formed by cutting a portion of an upper part of the second plate 120 to be foldable and configured to include a second fixture hole 121a for mounting a cup in the center thereof; and a third holding piece 130 formed from the plate material 100 by a pair of incision lines 200 for simultaneously cutting lower parts of the first plate 110 and the second plate 120, wherein a movable piece is partially cut from at least one of the first and second cradles 111 and 121 to be foldable, and the third holding piece 130 configured to form a virtual hollow portion while being drawn out to an inner side where the first and second plates 110 and 120 face each other when the first and second plates 110 and 120 are folded in a direction facing each other so that a cup can be mounted in the hollow portion.

**[0030]** More particularly, the plate material 100 is generally cut by means of a known punching machine in a state in which a plurality of plate materials 100 is continuously arranged on a substantially rectangular base plate B, as shown in FIG. 14. In particular, the base plate B may be made of a variety of paper, such as recycled paper or corrugated paper, or a synthetic resin material in various sizes. That is, a material of the cup carrier may be determined according to a material of the base plate B. Preferably, a plurality of plate materials 100 is formed on a whole paper-sized base plate B.

**[0031]** As shown in FIGS. 2 to 4, the plate material 100 has a flat planar shape, and is divided into the first plate

110 and the second plate 120 by the central bending line 140 that crosses the center of the plate material 100. Here, the first plate 110 and the second plate 120 may be folded to face each other by the central bending line 140, or may maintain a state of being opened at a predetermined angle by the third holding piece 130 to be described below.

**[0032]** In this embodiment, the first plate 110 and the second plate 120 are folded to face each other when two cups are accommodated as shown in FIG. 5. When three cups are to be accommodated, the third holding piece 130 is drawn out in a state in which the first plate 110 and the second plate 120 are opened at a predetermined angle, so that a cup can be accommodated in the third holding piece 130, as shown in FIGS. 2 and 3. The third holding piece 130 is described in detail below.

**[0033]** That is, since the plate material 100 is simply punched by means of a punching machine, a bonding process or additional assembly process performed to manufacture existing cup carriers may be omitted, so that the productivity of cup carriers can be improved and production costs can be reduced.

**[0034]** Meanwhile, an outer shape of the plate material 100 may be at least one of a circle, an oval and a polygon as shown in FIG. 12. In this embodiment, the plate material 100 implemented in a polygonal shape, more preferably in a rectangular shape, is described.

**[0035]** In addition, it is natural that the first and second cradles 111 and 121 and the first and second fixture holes 111a and 121a may also be modified into various shapes, similar to the shape of the plate material 100.

**[0036]** Prior to a detailed description of the first, second, and third cradles 111, 121, and 130, an example of the first cradle 111 formed in the first plate 110 and an example of the second cradle 121 formed in the second plate 12 are respectively described in the following embodiment.

**[0037]** First, the first cradle 111 is operated to be foldable vertically with respect to the first plate 110 by cutting a portion of an upper part of the first plate 110 along a first perforated line 112 having a substantially '∩' shape. Here, the first cradle 111 is operated to be foldable by a first vertically bent line 113 connecting both ends of the first perforated line 112.

**[0038]** When the first cradle 111 of the first plate 110 and the second cradle 121 of the second plate 120 are respectively folded, a handle for holding the cup carrier is naturally formed in upper parts of the first and second plates 110 and 120.

**[0039]** Since the configuration and operation of the second cradle 121 are the same as those of the first cradle 111, a detailed description of the second cradle 121 is omitted. Subsequently, the first fixture hole 111a for mounting a cup is formed in the first cradle 111, and a movable piece is partially cut from the first cradle 111. When the movable piece is folded, the first fixture hole 111a is naturally formed in the first cradle 111.

**[0040]** Here, the movable piece may include a first

movable piece 111b formed in the first cradle 111; and a second movable piece 121b formed in the second cradle 121.

**[0041]** Since the first movable piece 111b is not completely cut and separated from the first cradle 111, the first movable piece 111b is implemented to be folded downward from the first cradle 111.

**[0042]** Meanwhile, the movable piece has a bent line by which an end thereof is folded. Insertion holes where the folded movable piece is inserted and fixed are formed to penetrate a lower part of at least one of the first and second plates 110 and 120. When the end is inserted into and fixed to the insertion holes to support an outer circumferential surface of a cup, the cup is kept horizontal.

**[0043]** More particularly, the bent line may include a first bent line 111c and a second bent line 121c formed respectively at the first movable piece 111b and the second movable piece 121b. The insertion holes include a first insertion hole 114 and a second insertion hole 124 where folded ends of the first movable piece 111b and the second movable piece 121b are respectively inserted and fixed.

**[0044]** When the first movable piece 111b of the first cradle 111 is folded downward to form the first fixture hole 111a and an end of the first movable piece 111b is folded and inserted into and fixed to the first insertion hole 114, the first movable piece 111b is bent in a substantially 'C' shape.

**[0045]** When a cup is mounted in the first fixture hole 111a in this state, an outer circumferential surface of the cup is supported by the first movable piece 111b so that the cup is not eccentric. That is, the cup is leveled to ensure stable movement even if a lid of the cup is not completely closed or a cup lid is not present.

**[0046]** Meanwhile, an angle ( $\theta$ ) formed by an end of the first movable piece 111b may be adjusted such that cups having various gradients are supported by the first movable piece 111b, as shown in FIG. 7.

**[0047]** For this, a plurality of first insertion holes 114 may be formed in a vertical direction. When an end of the first movable piece 111b is inserted into and fixed to the plurality of first insertion holes 114, an angle ( $\theta$ ) formed by the end of the first movable piece 111b may be adjusted within a certain range.

**[0048]** Next, the third holding piece 130 is formed from the plate material 100 by a pair of incision lines 200 for simultaneously cutting portions of lower parts of the first plate 110 and the second plate 120 in a substantially horizontal direction.

**[0049]** More particularly, the plate material 100 includes the incision lines 200 for simultaneously cutting portions of the first plate 110 and the second plate 120, wherein the incision lines 200 are formed to be spaced apart from each other in a vertical direction. By the incision lines 200, the third holding piece 130 is formed in the plate material 100. By operations of the first plate 110 and the second plate 120, the third holding piece 130 is

selectively drawn out from the plate material 100.

**[0050]** In other words, a virtual hollow portion is formed while the third holding piece 130 is drawn out to an inner side where the first and second plates 110 and 120 face each other when the first and second plates 110 and 120 are folded in a direction in which the first and second plates 110 and 120 face each other, and a cup may be mounted in the hollow portion.

**[0051]** Here, the third holding piece 130 may be implemented in a substantial band shape to grip an outer circumferential surface of a cup. When a cup having a gradient is fitted into the virtual hollow portion, the cup may be naturally maintained in the cup carrier while the third holding piece 130 grips the circumference of the cup.

**[0052]** In addition, when two or fewer cups are to be accommodated in the cup carrier, the cups are only accommodated in the first and second cradles 111 and 121 in a state in which the first plate 110 and the second plate 120 are folded to face each other. That is, since the third holding piece 130 may be selectively used, the cup carrier may be efficiently used.

**[0053]** Next, the cup carrier according to the present invention may further include a fixation means 300 for maintaining a folded state of the first plate 110 and the second plate 120 when the first plate 110 and the second plate 120 are folded to face each other, wherein the fixation means 300 is formed in the plate material 100.

**[0054]** Here, the fixation means 300 includes a fastening groove 310 and a fastening wing 320. The fastening groove 310 is formed on one side of the first plate 110 to penetrate the first plate 110, and the fastening wing 320 is formed on the second plate 120. The fastening wing 320 is formed at a portion corresponding to the fastening groove 310 when the first plate 110 and the second plate 120 are folded to face each other. Here, the fastening wing 320 is formed by cutting a portion of the second plate 120 to be fitted into the fastening groove 310. When the fastening wing 320 is fitted into the fastening groove 310 in a state in which the first plate 110 and the second plate 120 are folded to be completely attached to each other, the first plate 110 and the second plate 120 may be maintained in a closely attached state to each other.

**[0055]** Meanwhile, the fastening groove 310 and the fastening wing 320 of the fixation means 300 are provided as only one embodiment, and thus the present invention is not limited thereto. Various examples for fixing the first plate 110 and the second plate 120 to each other are possible. Hereinafter, another embodiment of the cup carrier according to the present invention is described with reference to the accompanying drawings. The same or similar parts as the above embodiment are omitted so as to avoid repetition.

**[0056]** The cup carrier according to the embodiment further includes a variable means 400 for varying a diameter of at least one of the first fixture hole 111a and the second fixture hole 121a, wherein the variable means 400 is formed at at least one of the first cradle 111 and the second cradle 121.

**[0057]** That is, this embodiment does not include the first movable piece 111b and the second movable piece 121b unlike the aforementioned embodiment. This embodiment is characterized in that the first fixture hole 111a and the second fixture hole 121a are completely perforated and the diameters thereof may be varied.

**[0058]** Meanwhile, an embodiment of the variable means 400 formed in the first cradle 111 is described in the present embodiment for convenience of explanation.

**[0059]** The variable means 400 may include perforated lines 410 and an adjustment piece 420. By the perforated lines 410, the adjustment piece 420 may be selectively removed from the first cradle 111. The perforated lines 410 refer to portions formed by making cuts around the first fixture hole 111a using a sharp tool so as to easily remove the adjustment piece 420 from the first cradle 111.

**[0060]** That is, the diameter of the first fixture hole 111a may be changed by removing the adjustment piece 420 from the first cradle 111 according to the diameter of a cup accommodated in the first fixture hole 111a. Accordingly, cups having various sizes may be accommodated in the cup carrier.

**[0061]** Meanwhile, to expand the range of a virtual hollow portion formed in the third holding piece 130, auxiliary perforated lines 600 may be further formed in the plate material 100. Here, the auxiliary perforated lines 600 are extended from one side of the incision lines 200. The auxiliary perforated lines 600 are formed in the same shape as the perforated lines 410, not as the incision lines 200 formed by completely cutting the plate material 100. As needed, one side of the third holding piece 130 may be implemented to be torn off from the first plate 110 to expand the virtual hollow portion. Accordingly, the third holding piece 130 may also accommodate cups having various sizes as in the first and second cradles 111 and 121.

**[0062]** Meanwhile, FIG. 11 illustrates a plate material 100 having a substantially circular shape. In this case, the cup carrier may be eccentrically inclined when placed on the ground. Here, the cup carrier of the present embodiment may further include a support piece 500 for preventing the plate material 100 from eccentrically inclining, wherein the support piece 500 is formed by cutting a portion of the plate material 100 to be pulled out from one side of the plate material 100 and to be supported by the ground.

**[0063]** When the cup carrier is placed on the ground, the cup carrier may be prevented from being eccentrically inclined by pulling out and folding the support piece 500 to contact the ground, thereby securing the stability of the cup carrier.

**[0064]** In addition, the cup carrier according to the present invention may further include a billboard 700 as shown in FIG. 13. Here, the billboard 700 is a portion wherein a logo or phrase to be publicized may be printed, and may be formed on at least one of the first plate 110 and the second plate 120. In the present embodiment,

the billboard 700 is illustrated as being formed on both the first plate 110 and the second plate 120. For convenience of description, only the billboard 700 formed on the first plate 110 is described.

**[0065]** More particularly, the billboard 700 is disposed inside the first fixture hole 111a and is configured to be connected to the first plate 110, whereby the billboard 700 is not folded with the first cradle 111 even when the first cradle 111 is folded from the first plate 110.

**[0066]** In addition, at least one of the first cradle 111 and the second cradle 121 may be perforated to have a straw fixation hole H where a straw is inserted and mounted. Although not shown, a cup carrier wherein the first movable piece 111b is formed in the first cradle 111 and the variable means 400 is applied to the second cradle 121 may be implemented.

**[0067]** While the present invention has been particularly shown and described with reference to exemplary embodiments thereof, it will be understood by those of ordinary skill in the art that various changes in form and details may be made therein without departing from the spirit and scope of the present invention. Accordingly, the present invention should not be construed as limited to the exemplary embodiments set forth herein. Therefore, the true technical protection scope of the present invention should be defined by the technical spirit of the appended claims. In addition, it is to be understood that the invention includes all modifications, equivalents and alternatives falling within the spirit and scope of the invention as defined by the appended claims.

#### Description of Symbols

##### **[0068]**

100:	plate material
110:	first plate
111:	first cradle
111a:	first fixture hole
112:	second perforated line
120:	second plate
121:	second cradle
121a:	second fixture hole
122:	second perforated line
130:	third holding piece
140:	central bending line
200:	incision line
300:	fixation means
400:	variable means
500:	support piece
600:	auxiliary perforated lines
700:	billboard
B:	base plate
H:	straw fixation hole

**Claims**

1. A resource-saving, environmentally friendly adhesive-free cup carrier, comprising:

a plate-shaped plate material (100) folded in half by a central bending line (140) to be divided into a first plate (110) and a second plate (120);  
 a first cradle (111) formed by cutting a portion of an upper part of the first plate (110) to be foldable and configured to comprise a first fixture hole (111a) for mounting a cup in the center thereof;  
 a second cradle (121) formed by cutting a portion of an upper part of the second plate (120) to be foldable and configured to comprise a second fixture hole (121a) for mounting a cup in the center thereof; and  
 a third holding piece (130) formed from the plate material (100) by a pair of incision lines (200) for simultaneously cutting lower parts of the first plate (110) and the second plate (120), wherein a movable piece is partially cut from at least one of the first and second cradles (111) and (121) to be foldable, and the third holding piece (130) configured to form a virtual hollow portion while being drawn out to an inner side where the first and second plates (110) and (120) face each other when the first and second plates (110) and (120) are folded in a direction facing each other so that a cup can be mounted in the hollow portion.

2. The resource-saving, environmentally friendly adhesive-free cup carrier according to claim 1, wherein the movable piece comprises a bent line by which an end thereof is folded, insertion holes where the folded movable piece is inserted and fixed are formed to penetrate a lower part of at least one of the first and second plates, and, when the end is inserted into and fixed to the insertion holes to support an outer circumferential surface of a cup, the cup is kept horizontal.

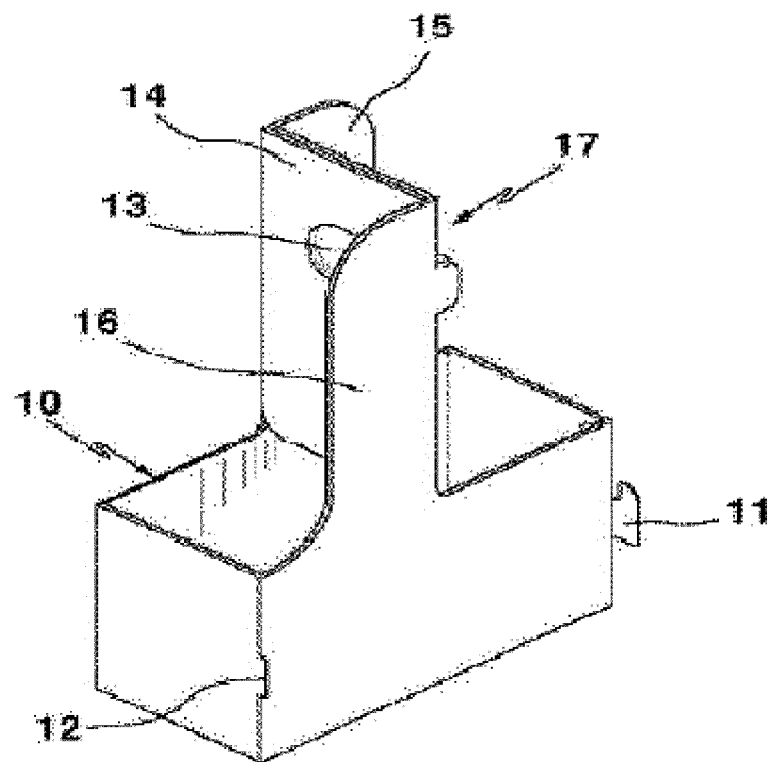
3. The resource-saving, environmentally friendly adhesive-free cup carrier according to claim 1, wherein the cup carrier is made of a plate material and further comprises a fixation means for maintaining a folded state of the first plate and the second plate when the first plate and the second plate are folded to face each other.

4. The resource-saving, environmentally friendly adhesive-free cup carrier according to claim 1, further comprising a variable means for varying a diameter of at least one of the first fixture hole and the second fixture hole, wherein the variable means is formed at at least one of the first cradle and the second cradle.

dle.

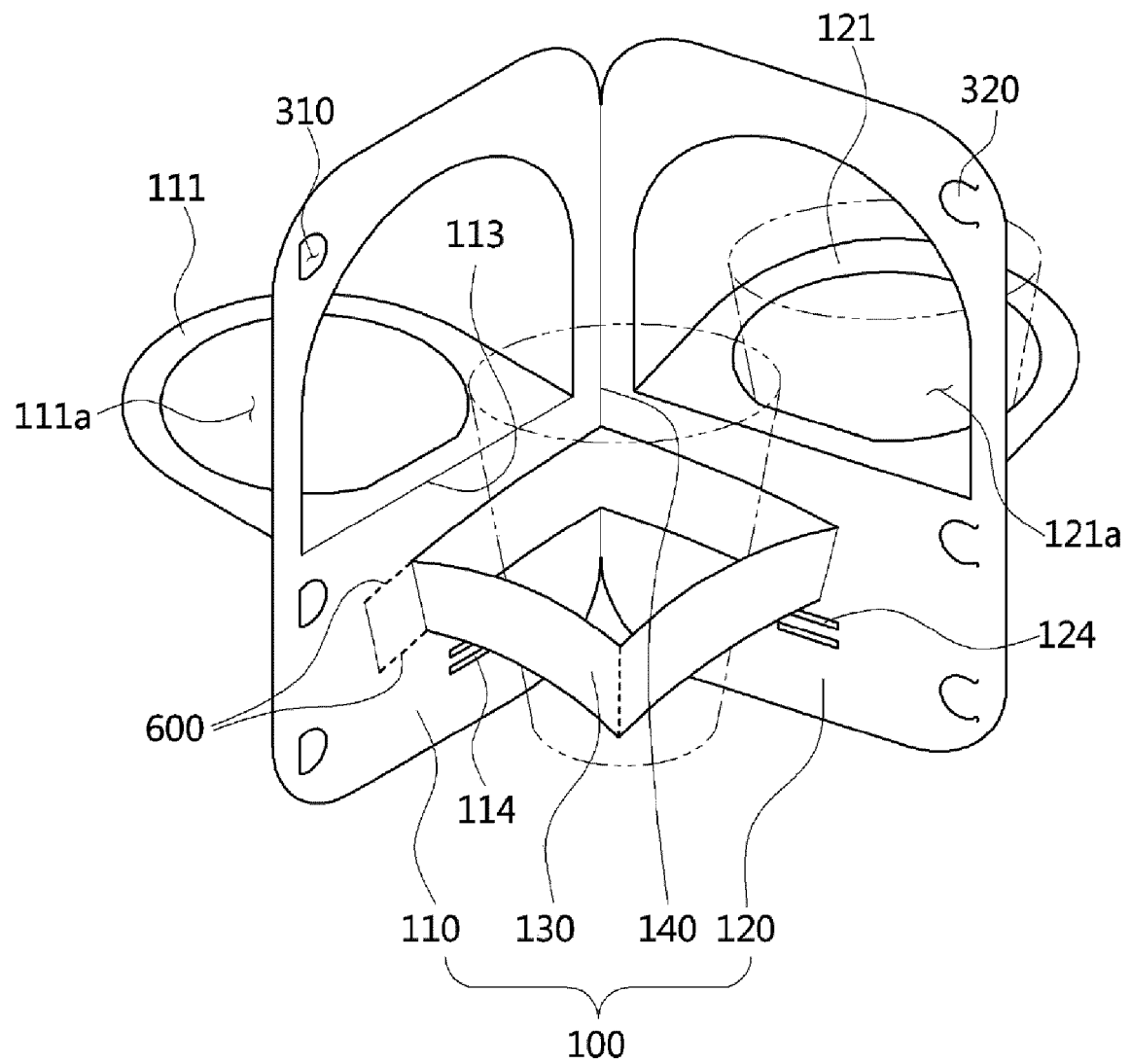
5. The resource-saving, environmentally friendly adhesive-free cup carrier according to claim 1, further comprising a support piece for preventing the plate material from eccentrically inclining, wherein the support piece is formed by cutting a portion of the plate material to be pulled out from one side of the plate material and to be supported by the ground.

[Fig. 1]

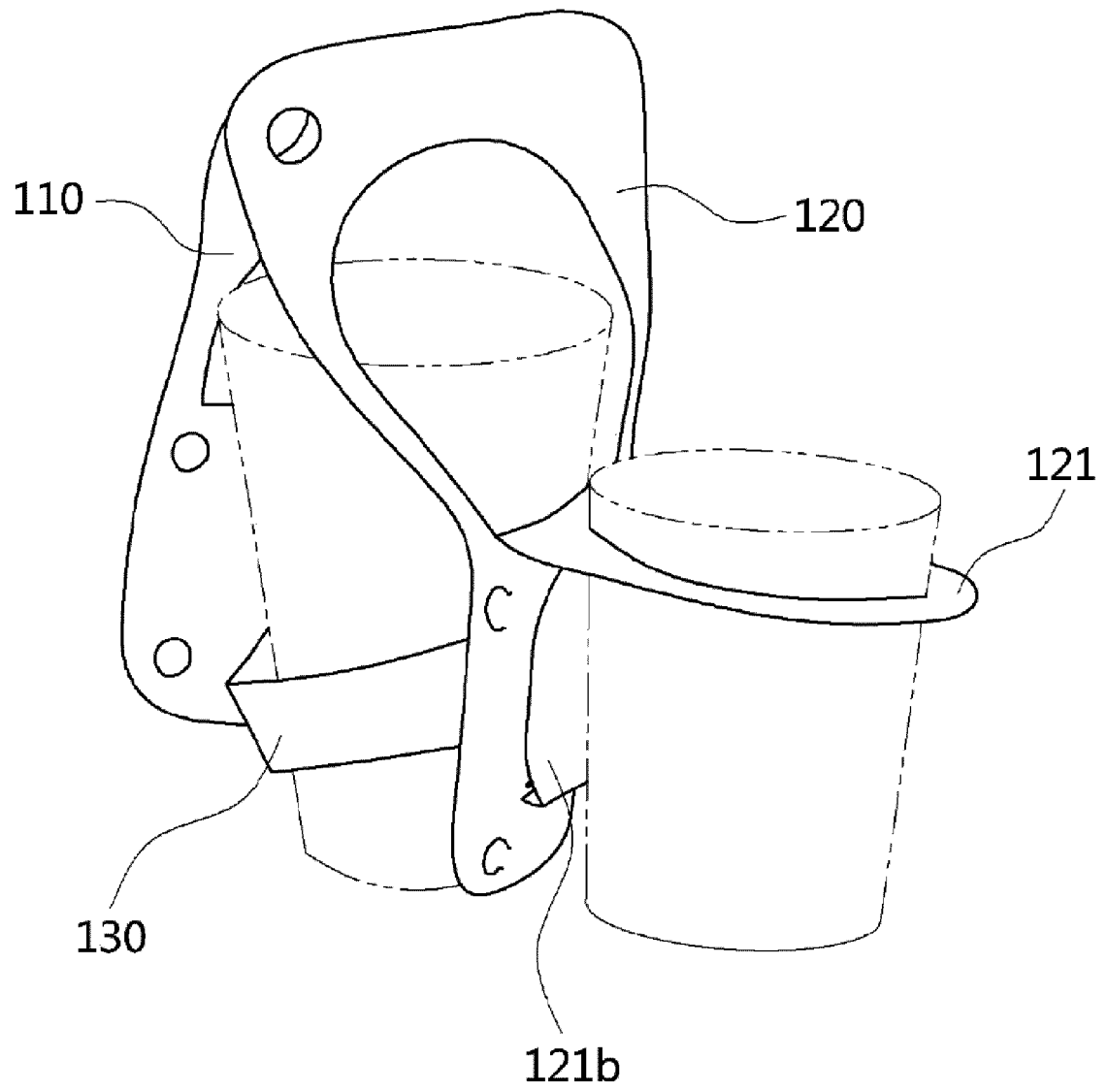




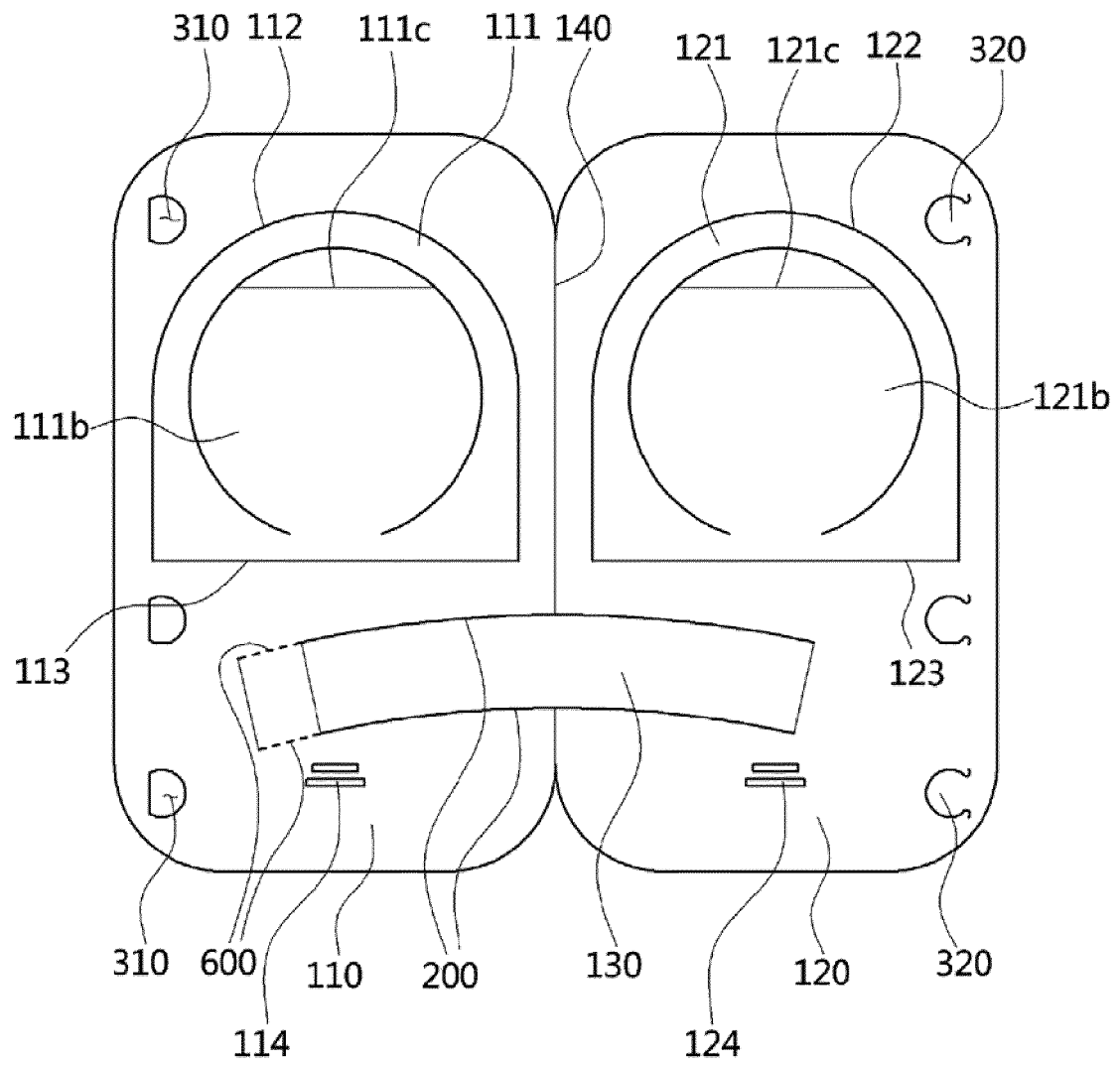
[Fig. 2]



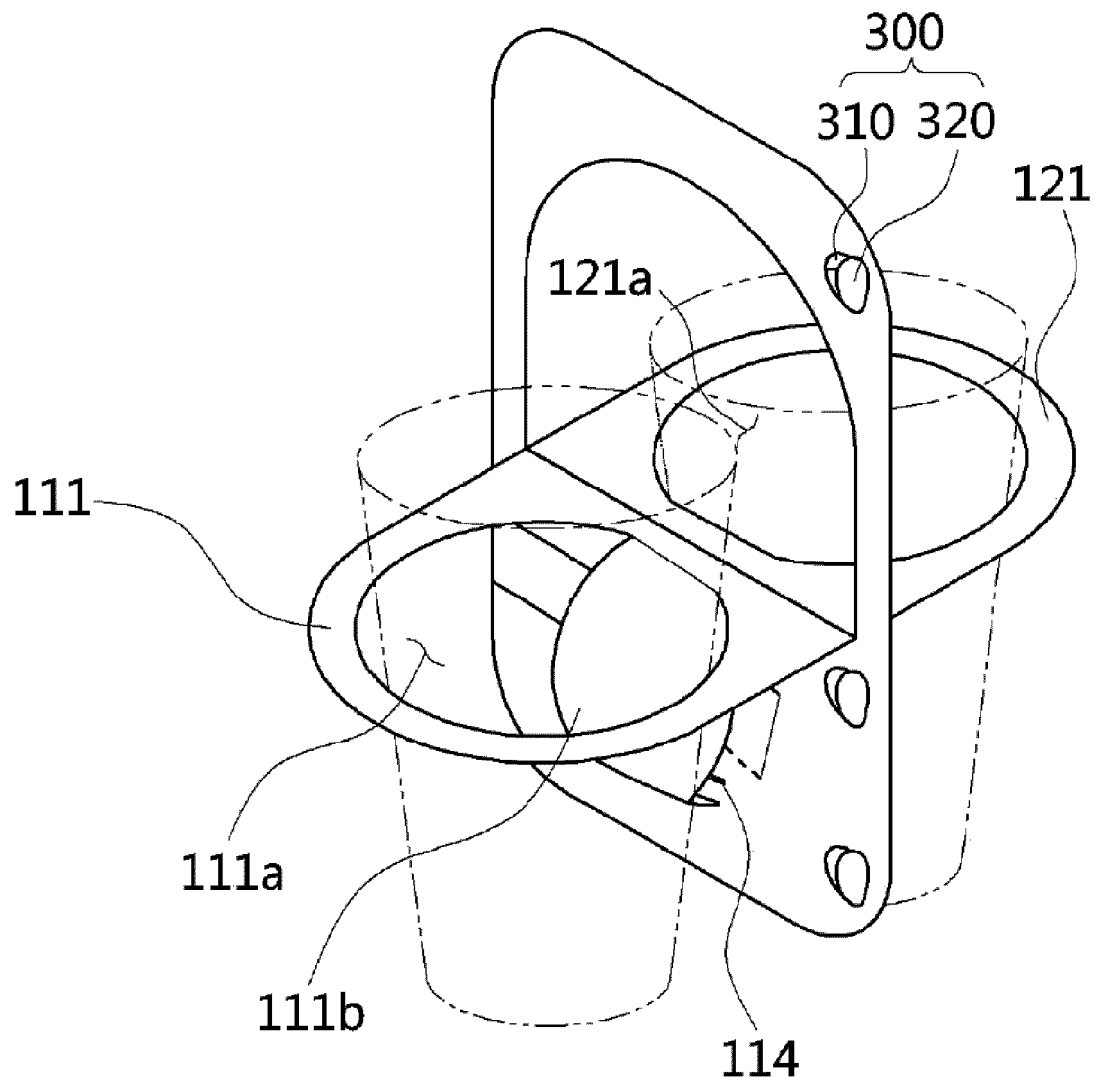
[Fig. 3]



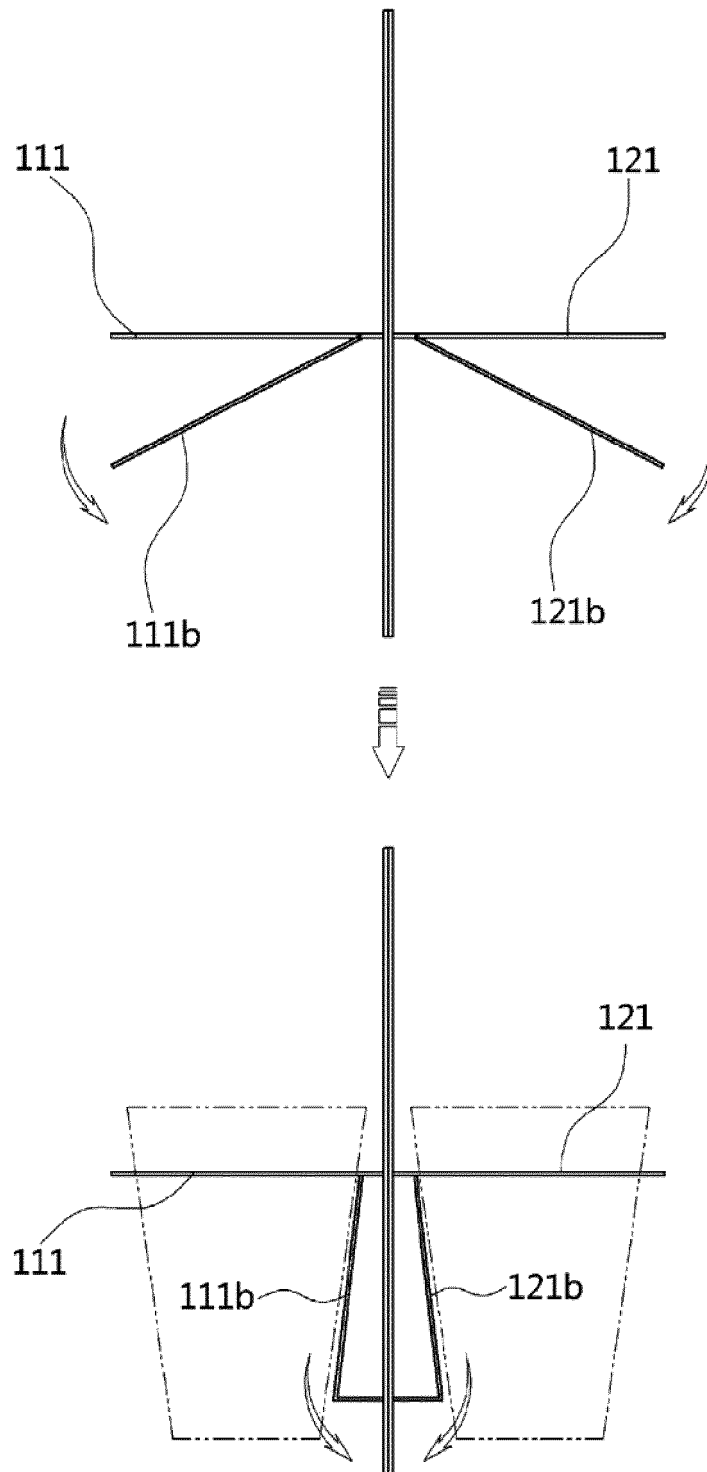
[Fig. 4]



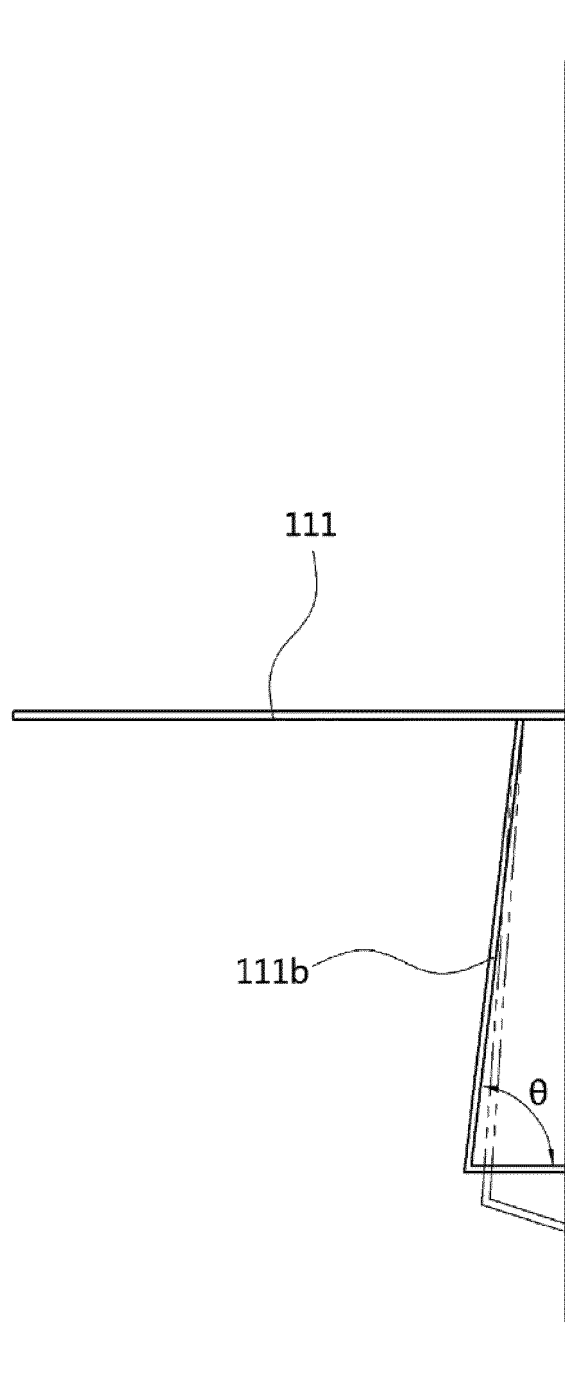
[Fig. 5]



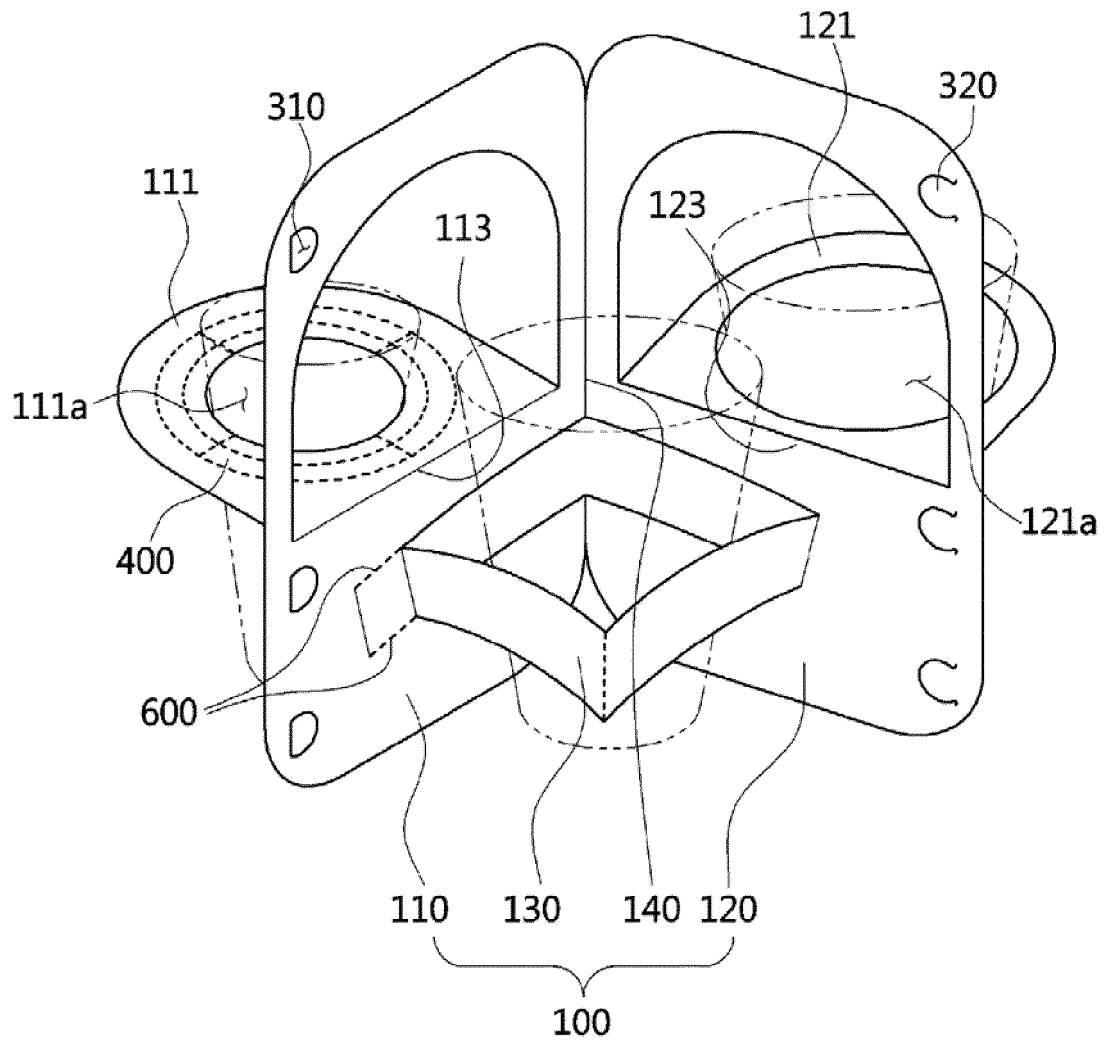
[Fig. 6]



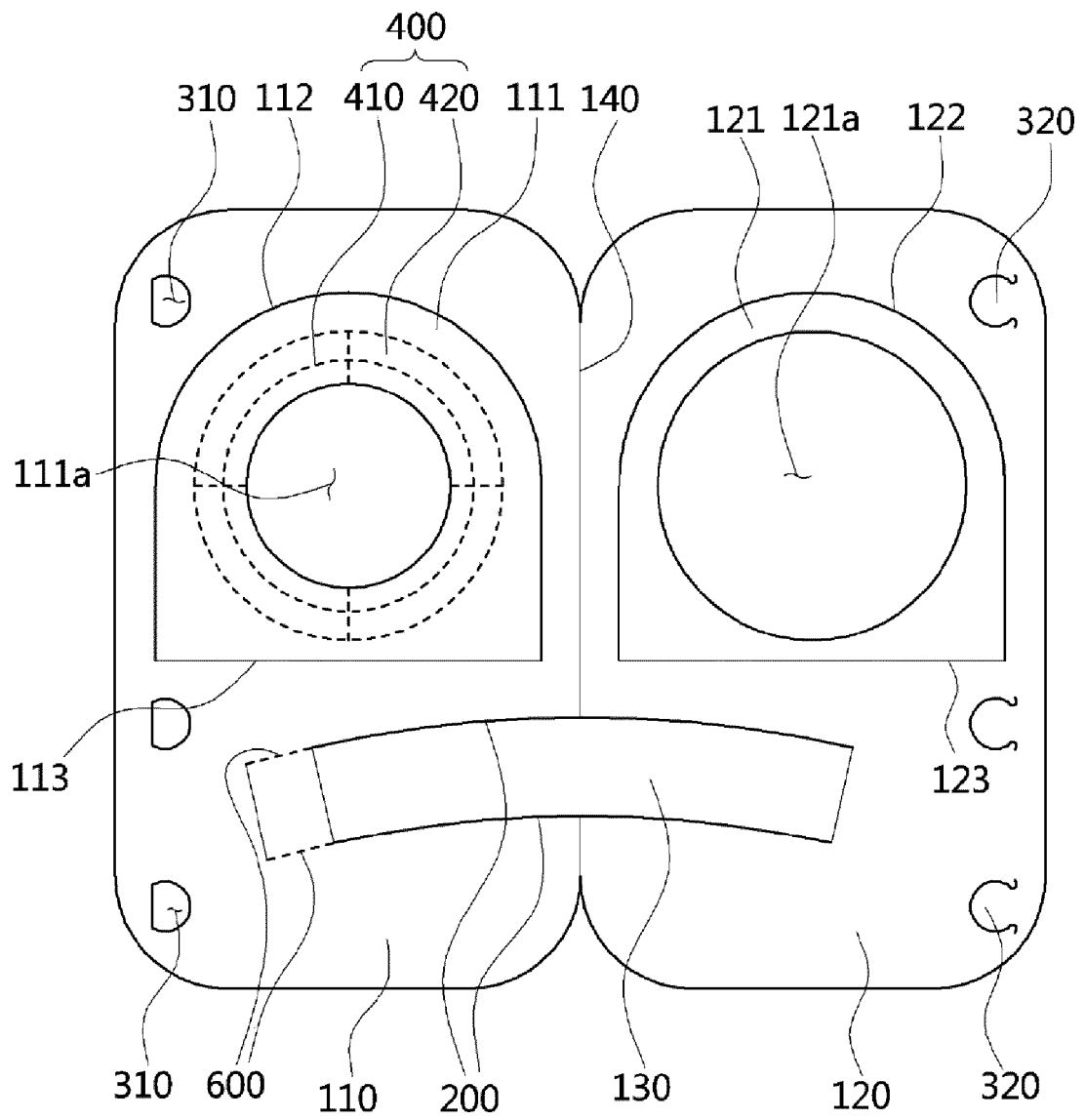
[Fig. 7]



[Fig. 8]

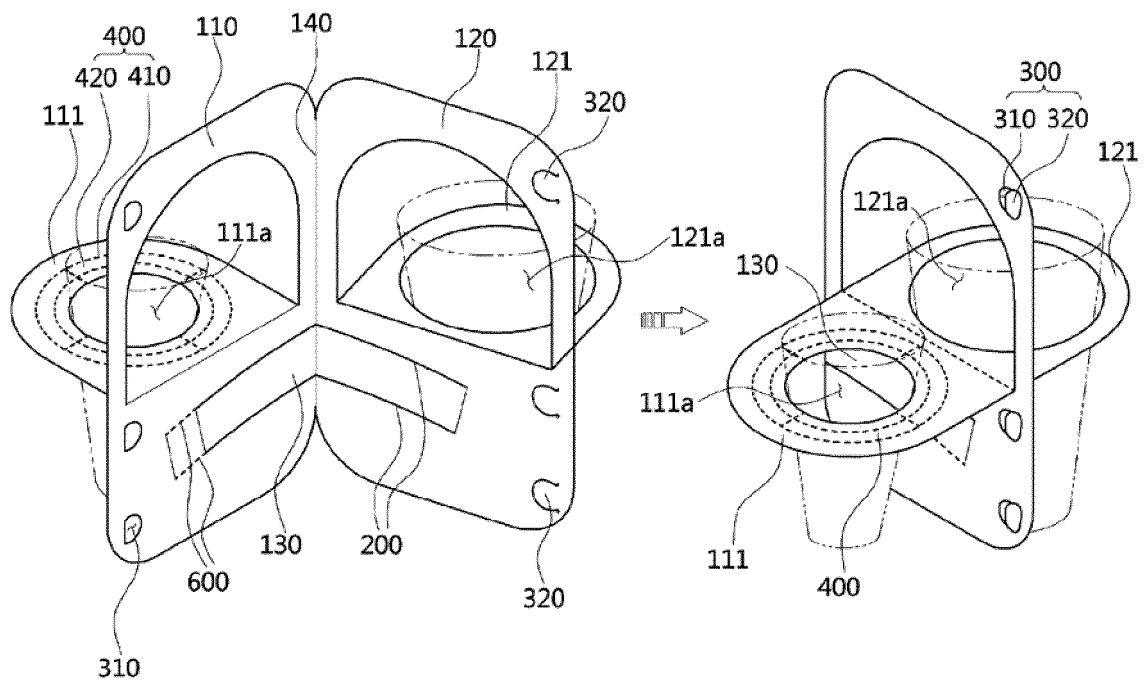


[Fig. 9]

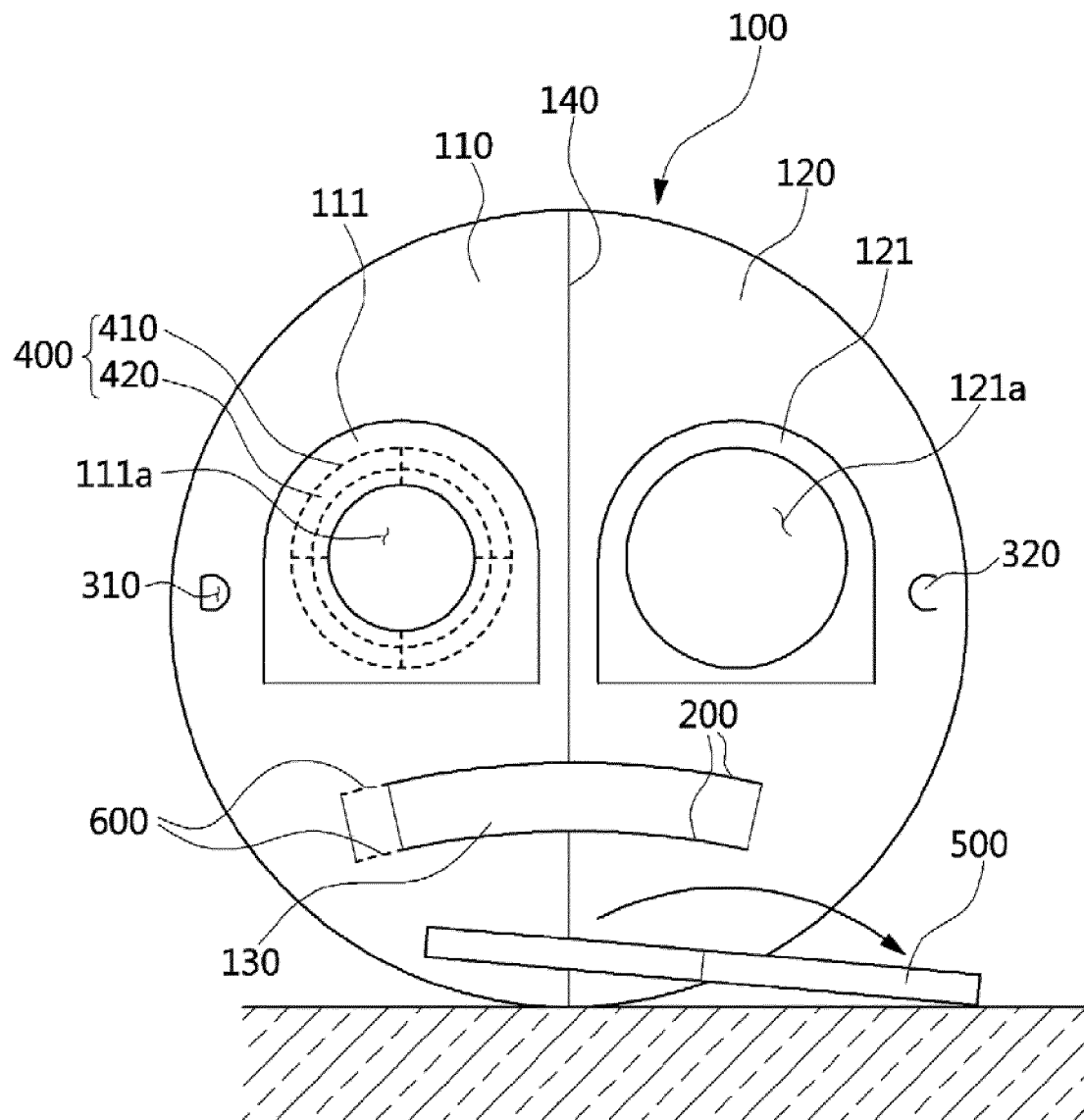




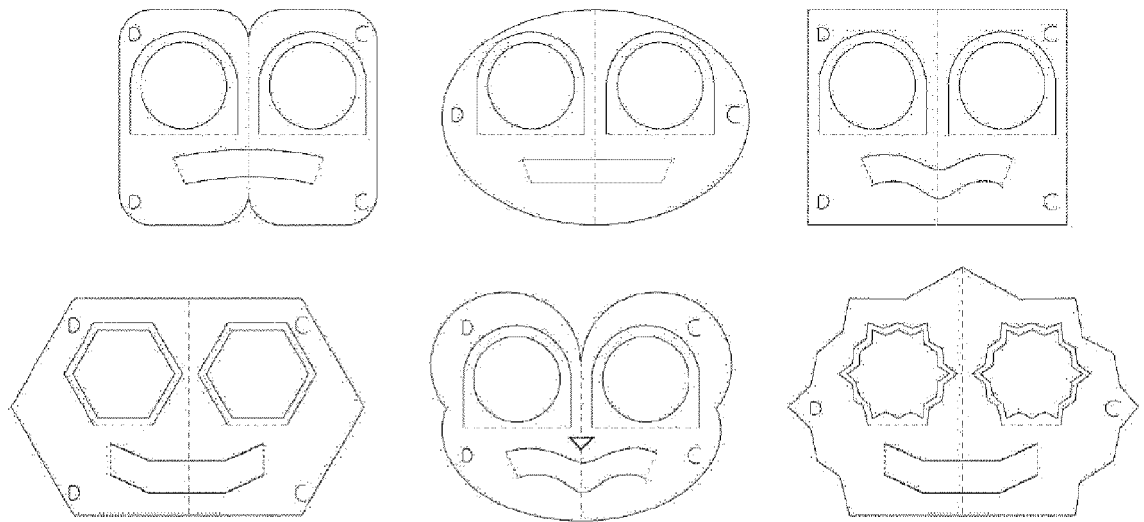
[Fig. 10]



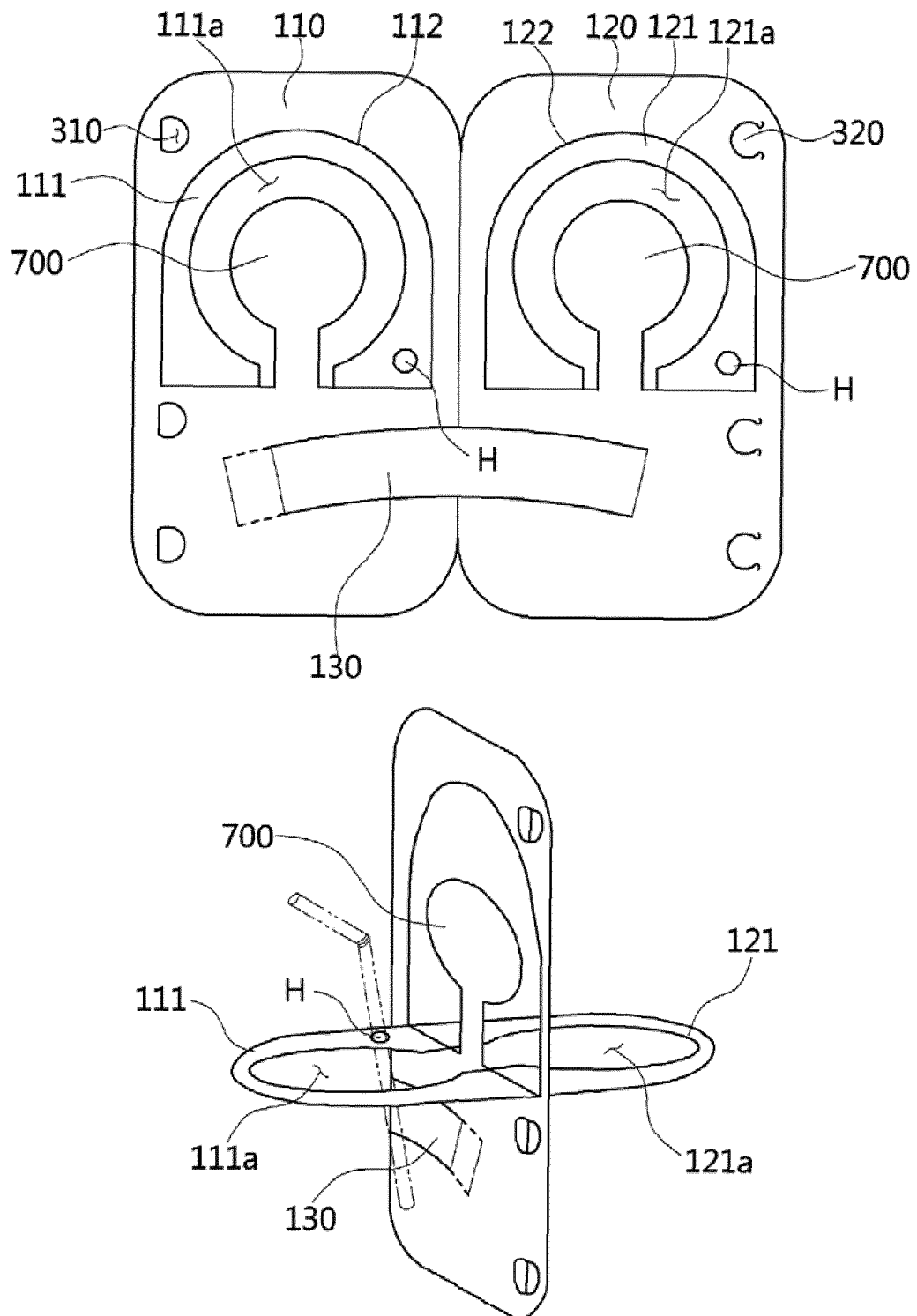
[Fig. 11]



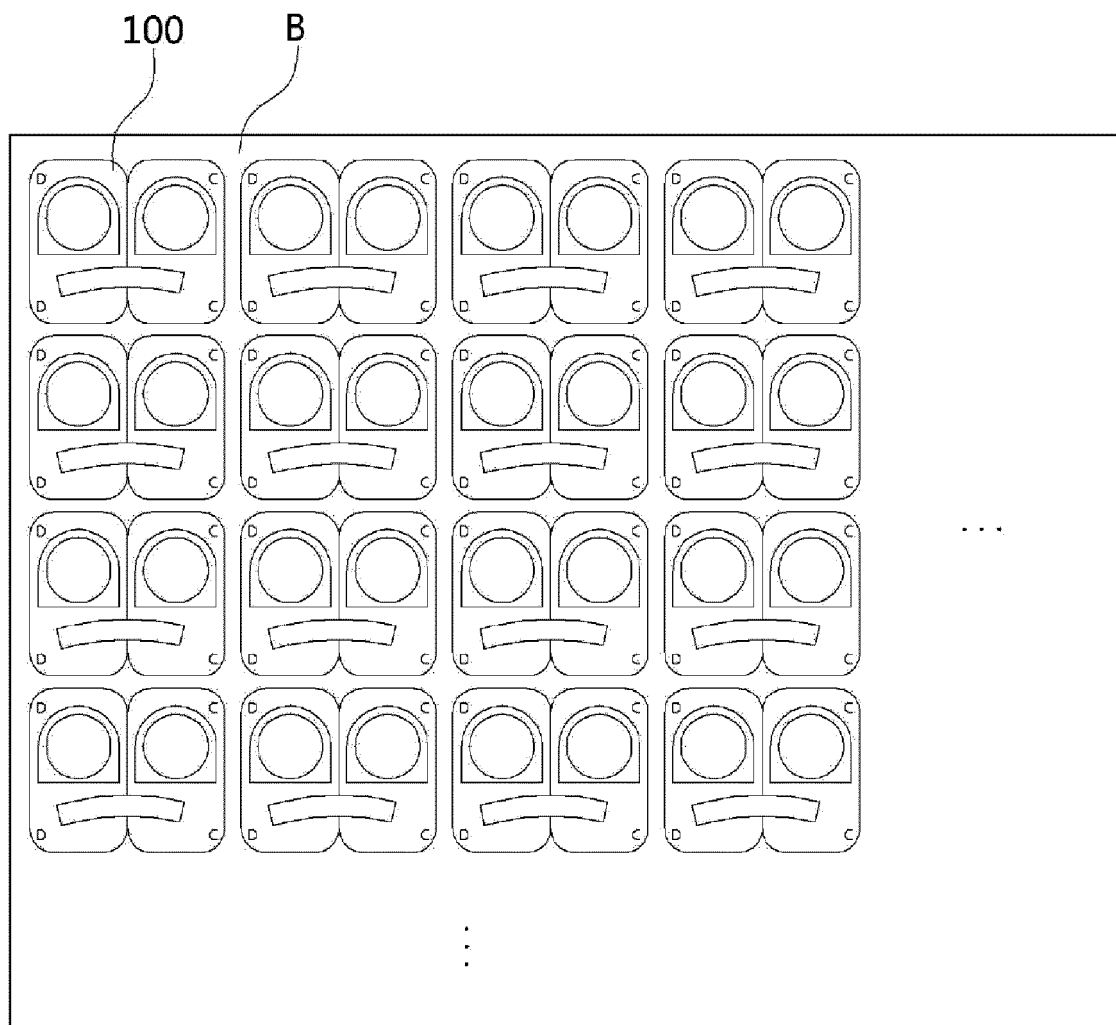
[Fig. 12]



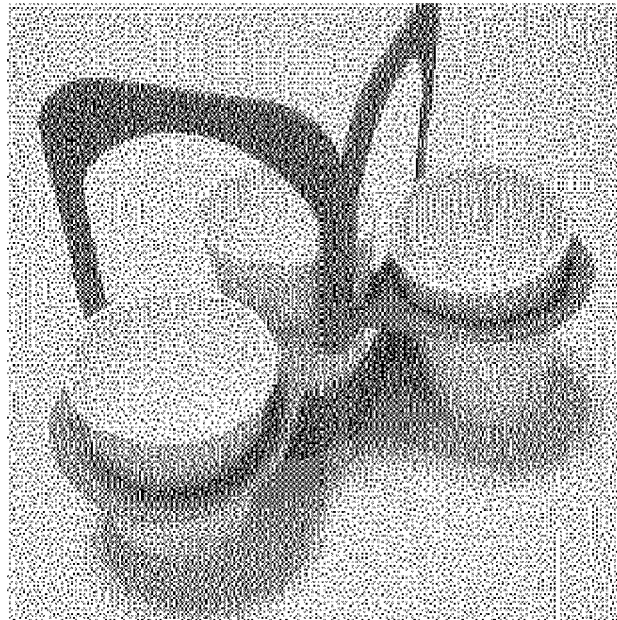
[Fig. 13]



[Fig. 14]



[Fig. 15]



## INTERNATIONAL SEARCH REPORT

International application No.

PCT/KR2018/007855

## A. CLASSIFICATION OF SUBJECT MATTER

*B65D 71/52(2006.01)i, B65D 5/42(2006.01)i, B65D 5/54(2006.01)i*

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)

B65D 71/52; B65D 71/00; B65D 71/12; B65D 71/24; B65D 71/28; B65D 71/40; B65D 5/42; B65D 5/54

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

Korean Utility models and applications for Utility models: IPC as above

Japanese Utility models and applications for Utility models: IPC as above

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

eKOMPASS (KIPO internal) &amp; Keywords: carrier, cup, container, board material, center bending line, holding piece, operating piece, cutting, hollow part

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	KR 10-1200164 B1 (LEE, Won Kook) 13 November 2012 See claim 1 and figures 1-4.	1-5
A	US 3421790 A (CARSON, Raymond M.) 14 January 1969 See column 2, line 24-column 3, line 15 and figures 1-3.	1-5
A	KR 10-1697955 B1 (CHOI, Eun Young et al.) 19 January 2017 See claim 1 and figures 1-5.	1-5
A	JP 10-095455 A (JUJO CENTRAL K.K.) 14 April 1998 See paragraphs [0017]-[0026] and figures 1-3.	1-5
A	US 4850479 A (BIRD, Stanford W.) 25 July 1989 See claim 1 and figure 4.	1-5

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

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"&amp;" document member of the same patent family

Date of the actual completion of the international search

10 OCTOBER 2018 (10.10.2018)

Date of mailing of the international search report

11 OCTOBER 2018 (11.10.2018)

Name and mailing address of the ISA/KR


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Authorized officer

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INTERNATIONAL SEARCH REPORT  
Information on patent family members

International application No.  
**PCT/KR2018/007855**

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Patent document cited in search report	Publication date	Patent family member	Publication date
KR 10-1200164 B1	13/11/2012	NONE	
US 3421790 A	14/01/1969	NONE	
KR 10-1697955 B1	19/01/2017	NONE	
JP 10-095455 A	14/04/1998	NONE	
US 4850479 A	25/07/1989	NONE	



**REFERENCES CITED IN THE DESCRIPTION**

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**Patent documents cited in the description**

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