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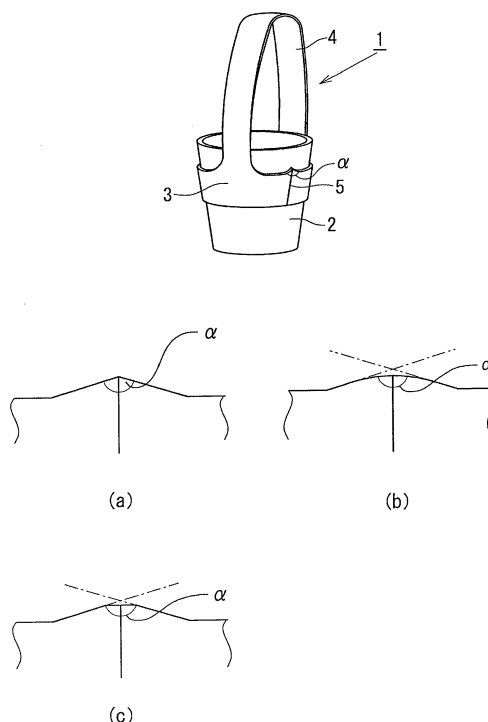
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(54) **DISPOSABLE HOLDER FOR BEVERAGE CONTAINER**

(57) [Problem] The provision of a disposable holder for a beverage container. [Solution] A holder for a beverage container is formed by cutting and welding a folded synthetic resin film, and is provided with: a beverage container receiving portion formed in a cylindrical shape and

joined by the welding of synthetic resin films; and a handle portion comprising a folded part and formed continuously from the top end of the cylindrical receiving portion to the top end at the opposite side thereof. The top ends at the join positions are cut so that the upper border of the receiving portion forms obtuse angles.

FIG. 1



Description

TECHNICAL FIELD

[0001] The present invention relates to disposable beverage container holders that are used to take out a beverage in a cup, and more particularly to disposable beverage container holders formed by cutting and welding a synthetic resin film folded in half, comprising: a beverage container receiving portion formed in a cylindrical shape by joining the synthetic resin film by welding; and a handle portion including the folded part and formed continuously from one of two opposing positions on an upper end of the cylindrical receiving portion to the other, wherein the synthetic resin film is cut so that an upper edge of the receiving portion forms an obtuse angle at an upper end of the joint part.

BACKGROUND ART

[0002] Conventionally, when taking out a beverage in a cup such as coffee, the user holds the cup with a lid with his/her hand as it is, or places it in a plastic bag, a paper bag, etc. to take it home or to an office etc. In order to safely carry a beverage without spilling, it is best for the user to move while holding a cup with a hand. However, the user needs to carry the cup carefully. Moreover, the user may get burned if he/she moves while holding a hot beverage in a cup with his/her hand. It is therefore common to carry the cup in a plastic bag, a paper bag, etc.

[0003] However, when using a plastic bag, a paper bag, etc. to carry a beverage in a cup, it takes a lot of time and labor to place the beverage in a cup in the plastic bag, the paper bag, etc., reducing workability at shops. If the bag is shaken or is subjected to any impact while the user is carrying the beverage, the cup may fall over or lean in the bag and the beverage may spill in the bag, or the lid may get loose and the beverage may spill out of the cup. Moreover, when using a plastic bag, a paper bag, etc., a lot of beverage can spill out of the cup without user's awareness because the user doesn't know what the inside of the bag is like until he/she opens it.

[0004] Furthermore, although a plastic bag, a paper bag, etc. have a larger size than the beverage in a cup, they are discarded after use. Namely, they are disposable bags. The use of a plastic bag, a paper bag, etc. is therefore not a great way both economically and environmentally.

SUMMARY OF THE INVENTION

Problem to be Solved by the Invention

[0005] It is an object of the present invention to provide a disposable beverage container holder that allows the user to hold a beverage in a cup by a simple operation and to safely carry a beverage in a cup without spilling, that has a simple configuration and high strength, and

that is advantageous both economically and environmentally.

Means for Solving the Problem

[0006] The inventors conducted intensive studies in order to achieve the above object, and found that a synthetic resin film product capable of being used as a disposable beverage container holder that allows the user to hold a beverage in a cup by a simple operation and to safely carry a beverage in a cup without spilling can be obtained by partially joining, by welding, a synthetic resin film folded in half, along its both sides located near the terminal end located on the opposite side from the folded part of the synthetic resin film, thereby forming a cylindrical beverage container receiving portion capable of holding a beverage container, and then forming a strip-shaped handle portion including the folded part and continuous with the receiving portion. The inventors also found that if the holder is formed so that an upper edge of the receiving portion forms an obtuse angle with a vertex at an upper end of the joint part, strength of the joint part is increased, whereby the resultant beverage container holder has high strength. The inventors thus completed the invention.

[0007] Accordingly, the present invention relates to:

(1) A disposable beverage container holder formed by cutting and welding a synthetic resin film folded in half, comprising: a beverage container receiving portion formed in a cylindrical shape by joining the synthetic resin film by welding; and a handle portion including the folded part and formed continuously from one of two opposing positions on an upper end of the cylindrical receiving portion to the other, wherein the synthetic resin film is cut so that an upper edge of the receiving portion forms an obtuse angle at an upper end of the joint part;

(2) The beverage container holder according to (1), wherein the beverage container receiving portion has the joint part formed so that the cylindrical portion of the beverage container receiving portion has a tapered inner diameter that gradually decreases toward a lower edge of the receiving portion;

(3) The beverage container holder according to (1), wherein the beverage container receiving portion is further provided with a welded part so that the cylindrical portion of the beverage container receiving portion has a tapered inner diameter that gradually decreases toward a lower edge of the receiving portion;

(4) The beverage container holder according to (3), wherein the welded part is formed by a plurality of stages of welded parts, which are provided at intervals and extend substantially horizontally, and the plurality of stages of welded parts are formed so that the welded parts in each stage are located closer to a centerline of the cylindrical portion from the upper

edge toward the lower edge of the beverage container receiving portion;

(5) The beverage container holder according to (3), wherein the welded part is formed in a substantially linear shape starting from the upper end of the joint part and extending toward a centerline of the cylindrical portion of the beverage container receiving portion from the upper edge to the lower edge of the beverage container receiving portion;

(6) A beverage container holder in a form before use, comprising: the beverage container holder according to any one of (1) to (5); a holder base extended from the lower edge of the beverage container receiving portion; and separation means for allowing the beverage container holder to be separated from the holder base by pulling;

(7) The beverage container holder in the form before use according to (6), wherein the separation means is discontinuous cuts;

(8) The beverage container holder in the form before use according to (6), wherein the separation means is a groove; and

(9) A beverage container holder product, comprising: a holder bundle formed by stacking a multiplicity of the beverage container holders in the form before use according to any one of (6) to (8); and a retaining member that fastens and retains the holder bundle so that the holder bundle can be hung.

Effects of the Invention

[0008] The present invention provides a disposable beverage container holder that allows the user to hold a beverage in a cup by a simple operation and to safely carry a beverage in a cup without spilling, that has a simple configuration and high strength, and that is advantageous both economically and environmentally.

[0009] The beverage container holder of the present invention uses a synthetic resin film folded in half, and the folded part serves as the handle portion of the holder. There is thus no joint in the handle portion. This ensures that the handle portion does not like a handle portion joined by welding, thereby providing high strength.

[0010] The beverage container holder of the present invention is formed so that the upper edge of the beverage container receiving portion forms an obtuse angle with a vertex at the upper end of the joint part formed by welding. This can avoid concentration of load stress on the upper end of the joint part and can disperse the stress extensively in the upper end of the beverage container receiving portion. This makes the beverage container receiving portion less likely to tear from the joint part, and thus significantly improves the overall strength of the beverage container receiving portion.

[0011] As a form before use of the beverage container holder, a form is used in which the lower edge of the beverage container receiving portion of the beverage container holder is connected to the holder base via the

separation means for allowing the beverage container holder to be separated from the holder base by pulling. The use of this form is convenient because the beverage container holder can be provided when necessary by separating it from the holder base by pulling.

[0012] The beverage container holder product comprises: the holder bundle formed by stacking a multiplicity of the beverage container holders in the form before use; and the retaining member that fastens and retains the holder bundle so that the holder bundle can be hung. By merely hanging this beverage container holder product on any convenient place by using the retaining member, a necessary number of beverage container holders can be easily provided when necessary by separating them from the holder bases by pulling. This beverage container holder product therefore achieves high efficiency and high workability.

BRIEF DESCRIPTION OF THE DRAWINGS

[0013]

[FIG. 1] FIG. 1 show schematic views showing a form of a disposable beverage container holder according to the present invention when in use (FIGS. 1(a) to 1(c) are enlarged views of an upper end of a joint part 5).

[FIG. 2] FIG. 2 is a perspective view showing one mode of the disposable beverage container holder according to the present invention.

[FIG. 3] FIG. 3 shows perspective views showing another mode of the disposable beverage container holder according to the present invention (FIG. 3(A) shows a holder having a plurality of stages of welded parts 5a connected to a joint part 5 and having a length increased toward the lowermost stage, FIG. 3(B) shows a holder having a plurality of stages of welded parts 5b formed so as to be slightly separated from the joint part 5 and having a length increased toward the lowermost stage, and FIG. 3(C) shows a holder having a plurality of stages of welded parts 5c having the same length and formed so that the distance from the joint part 5 to the welded part 5c gradually increases toward the lowermost stage).

[FIG. 4] FIG. 4 is a perspective view showing another mode of the disposable beverage container holder according to the present invention.

[FIG. 5] FIG. 5 is a perspective view showing still another mode of the disposable beverage container holder according to the present invention.

[FIG. 6] FIG. 6 shows front views of a beverage container holder in a form before use according to the present invention (FIG. 6(A) shows a mode in which separation means is discontinuous cuts (perforations), and FIG. 6(B) shows a mode in which the separation means is a groove (cut groove)).

[FIG. 7] FIG. 7 shows perspective views of a beverage container holder product according to the

present invention (FIG. 7(A) shows a mode in which separation means is discontinuous cuts (perforations), and FIG. 7(B) shows a mode in which the separation means is a groove (cut groove)).

[FIG. 8] FIG. 8 shows schematic views illustrating one mode of a manufacturing process of the beverage container holder in the form before use according to the present invention.

[FIG. 9] FIG. 9 shows schematic views illustrating another mode of the manufacturing process of the beverage container holder in the form before use according to the present invention.

[FIG. 10] FIG. 10 is a front view showing another mode of the beverage container holder in the form before use according to the present invention.

[FIG. 11] FIG. 11 shows perspective views showing another mode of the beverage container holder product according to the present invention.

MODES FOR CARRYING OUT THE INVENTION

[0014] The present invention will be described in more detail.

[0015] A disposable beverage container holder according to the present invention is a beverage container holder formed by cutting and welding a synthetic resin film folded in half, characterized by comprising: a beverage container receiving portion formed in a cylindrical shape by joining the synthetic resin film by welding; and a handle portion including the folded part and formed continuously from one of two opposing positions on an upper end of the cylindrical receiving portion to the other, wherein the synthetic resin film is cut so that an upper edge of the receiving portion forms an obtuse angle at an upper end of the joint part.

[0016] An example of the synthetic resin film that can be used in the present invention is a polyolefin film. Examples of polyolefin include polyethylene, high-density polyethylene, polypropylene, ethylene-vinyl acetate copolymer, ethylene-methyl methacrylate copolymer, polystyrene, blends of two or more of these polyolefins, etc., and high-density polyethylene is preferred.

[0017] An example of the synthetic resin film folded in half is a film produced by cutting a cylindrical film formed by inflation molding in the longitudinal direction thereof.

[0018] The thickness of the synthetic resin film is, e.g., in the range of 10 to 50 μm , and preferably in the range of 20 to 40 μm .

[0019] The diameter of the cylinder formed by the beverage container receiving portion is set to a value between minimum and maximum outer diameters of a beverage container such as a beverage cup to be held by the receiving portion.

[0020] For example, when cups of several sizes (outer diameters) are used, it is preferable to prepare beverage container holders corresponding to each cup size.

[0021] The handle portion preferably has a length suitable for carrying the beverage container holder by hold-

ing the handle portion with a hand or by hanging the handle portion over the hand. For example, the handle portion has a length of 10 to 30 cm, and preferably 13 to 22 cm.

[0022] The handle portion preferably has a width of about 3 to 7 cm.

[0023] The boundary region between the handle portion and the beverage container receiving portion is preferably formed by making a curved cut so that the width of the handle portion gradually decreases from the beverage container receiving portion toward the handle portion.

[0024] For example, the beverage container holder of the present invention has a shape shown in FIG. 2.

[0025] That is, the beverage container holder 1 of the present invention is characterized by comprising: a beverage container receiving portion 3 formed in a cylindrical shape by joining a synthetic resin film by welding; and a handle portion 4 including the folded part and formed continuously from one of two opposing positions on an upper end of the cylindrical receiving portion to the other, wherein the synthetic resin film is cut so that an upper edge of the receiving portion forms an obtuse angle at an upper end of the joint part.

[0026] FIG. 1 shows a form of the disposable beverage container holder of the present invention when in use.

[0027] The disposable beverage container holder 1 can easily and safely hold a beverage container 2 by a simple operation of placing the beverage container 2 such as a beverage cup in the cylinder formed by the beverage container receiving portion 3 of the disposable beverage container holder 1. When taking a beverage out, the disposable beverage container holder 1 also allows the user to safely carry the beverage without spilling it by holding the handle portion 4 with his/her hand or by hanging the handle portion 4 over his/her hand.

[0028] The beverage container holder 1 of the present invention uses a synthetic resin film folded in half, and the folded part serves as the handle portion 4 of the holder. As shown in FIGS. 1 and 2, there is thus no joint in the handle portion 4. This ensures that the handle portion 4 does not tear like a handle portion joined by welding, thereby providing high strength. As shown in FIG. 1, the beverage container receiving portion 3 is formed so that its upper edge forms an obtuse angle α with a vertex at the upper end of the joint part 5. This can avoid concentration of load stress on the upper end of the joint part 5 and can disperse the stress extensively in the upper end of the beverage container receiving portion 3. This makes the beverage container receiving portion 3 less likely to tear from the joint part 5, and thus significantly improves the overall strength of the beverage container receiving portion 3.

[0029] The upper end of the joint part 5 may have any shape such as, e.g., a shape of a vertex of a triangle as shown in FIG. 1(a), a gently curved shape as shown in FIG. 1(b), or a shape of a flat vertex as shown in FIG. 1(c).

[0030] The obtuse angle is, e.g., larger than 90 de-

degrees and smaller than 180 degrees, and preferably 95 degrees to 170 degrees, and more preferably 100 degrees to 160 degrees.

[0031] The disposable beverage container holder of the present invention is preferably a beverage container holder in which the beverage container receiving portion is further provided with a welded part so that the cylindrical portion of the beverage container receiving portion has a tapered inner diameter that gradually decreases toward a lower edge of the receiving portion.

[0032] In one mode of the welded part, the welded part is formed by a plurality of stages of welded parts, which are provided at intervals and extend substantially horizontally, and the plurality of stages of welded parts are formed so that the welded parts in each stage are located closer to the centerline of the cylindrical portion from the upper edge toward the lower edge of the beverage container receiving portion.

[0033] The beverage container holder in this mode will be described with reference to FIGS. 3(A), 3(B), and 3(C).

[0034] In the beverage container holder in this mode, the beverage container receiving portion 3 is provided with a plurality of stages of welded parts 5a (FIG. 3(A)), 5b (FIG. 3(B)), or 5c (FIG. 3(C)), which are provided at intervals and extend substantially horizontally, so that the cylindrical portion of the beverage container receiving portion 3 has a tapered inner diameter that gradually decreases toward the lower edge of the receiving portion. The plurality of stages of welded parts are formed so that the welded parts in each stage are located closer to the centerline of the cylindrical portion from the upper edge toward the lower edge of the beverage container receiving portion. For example, as shown in FIG. 3(A), the welded part may be a plurality of stages of welded parts 5a connected to the joint part 5 and having a length increased toward the lowermost stage. As shown in FIG. 3(B), the welded part may be a plurality of stages of welded parts 5b formed so as to be slightly separated from the joint part 5 and having a length increased toward the lowermost stage. As shown in FIG. 3(C), the welded part may be a plurality of stages of welded parts 5c having the same length and formed so that the distance from the joint part 5 to the welded part 5c gradually increases toward the lowermost stage.

[0035] Regarding the number of welded parts in each of the plurality of stages of welded parts 5a, 5b, or 5c, 2 to 7 welded parts, and preferably 3 to 6 welded parts are formed on respective sides of the beverage container receiving portion.

[0036] The degree of the taper of the inner diameter of the cylindrical portion is preferably set according to the outer diameter of a beverage container to be used and the degree to which the outer diameter of the beverage container varies.

[0037] In this mode, the beverage container receiving portion is tapered by forming the plurality of parallel welded parts 5a, 5b, or 5c. This eliminates the need to cut off a part of the resin film in order to taper the beverage

container receiving portion. This mode is therefore advantageous in that such a part of the resin film that is to be discarded is not produced.

[0038] In another preferred mode of the welded part of the beverage container receiving portion formed so that the cylindrical portion has a tapered inner diameter that gradually decreases toward the lower edge of the receiving portion, the welded part is formed in a substantially linear shape starting from the upper end of the joint part and extending toward the centerline of the cylindrical portion of the beverage container receiving portion from the upper edge to the lower edge of the beverage container receiving portion.

[0039] The beverage container holder in this mode will be described with reference to FIG. 4.

[0040] In the beverage container holder 1 in this mode, welded parts 5d are formed in the beverage container receiving portion 3 so as to have a substantially linear shape starting from the upper end of the joint part 5 and extending toward the centerline of the cylindrical portion of the beverage container receiving portion 3 from the upper edge to the lower edge of the beverage container receiving portion 3 so that the cylindrical portion has a tapered inner diameter that gradually decreases toward the lower edge of the receiving portion.

[0041] The degree of the taper of the inner diameter of the cylindrical portion, e.g., the angle between the substantially straight line formed by the welded part 5d extending toward the centerline of the cylindrical portion of the beverage container receiving portion 3 and the joint part 5, is preferably set according to the outer diameter of a beverage container to be used and the degree to which the outer diameter of the beverage container varies.

[0042] In this mode, the beverage container receiving portion is tapered by forming the welded parts 5d. This eliminates the need to cut off a part of the resin film in order to taper the beverage container receiving portion. This mode is therefore advantageous in that such a part of the resin film that is to be discarded is not generated.

[0043] In the mode in which the welded parts 5d are formed so that the cylindrical portion of the beverage container holder has a tapered inner diameter that gradually decreases toward the lower edge of the receiving portion, a mode can be employed in which each portion surrounded by the substantially linear part formed by the welded part 5d, the joint part 5, and the lower edge of the beverage container receiving portion is removed. Namely, a mode can be employed in which the beverage container receiving portion has the joint part formed so that the cylindrical portion of the beverage container receiving portion has a tapered inner diameter that gradually decreases toward the lower edge of the receiving portion.

[0044] As shown in FIG. 5, in the beverage container holder 1 in this mode, the beverage container receiving portion 3 has substantially linear welded parts 5d formed so that the cylindrical portion of the beverage container

receiving portion 3 has a tapered inner diameter that gradually decreases toward the lower edge of the receiving portion.

[0045] The present invention also relates to a beverage container holder in a form before use, comprising: the beverage container holder; a holder base extended from the lower edge of the beverage container receiving portion; and separation means for allowing the beverage container holder to be separated from the holder base by pulling.

[0046] The separation means is not particularly limited as long as it is separation means for allowing the beverage container holder to be separated. Preferably, the separation means is discontinuous cuts, a groove, etc. An example of the discontinuous cuts is perforations etc., and an example of the groove is a cut groove etc.

[0047] The holder base may have a hole that allows a plurality of the beverage container holders in the form before use to be bundled together.

[0048] A mode of the beverage container holder in the form before use will be described with reference to FIG. 6.

[0049] FIG. 6(A) shows a mode in which the separation means is the discontinuous cuts (perforations), and FIG. 6(B) shows a mode in which the separation means is the groove (cut groove).

[0050] In a beverage container holder 6 in a form before use shown in FIG. 6(A), the beverage container holder including the beverage container receiving portion 3 and the handle portion 4 is connected to a holder base 8 having holes 9 via perforations 7 as the discontinuous cuts. In a beverage container holder 6 in a form before use shown in FIG. 6(B), the beverage container holder including the beverage container receiving portion 3 and the handle portion 4 is connected to the holder base 8 having the holes 9 via a cut groove 7b as the groove.

[0051] The beverage container holder in the form before use is convenient because the beverage container holder can be provided when necessary by separating it from the holder base by pulling.

[0052] The present invention further relates to a beverage container holder product, comprising: a holder bundle formed by stacking a multiplicity of the beverage container holders in the form before use; and a retaining member that fastens and retains the holder bundle so that the holder bundle can be hung.

[0053] As described above, the base of the beverage container holder in the form before use has the hole. The holder bundle can therefore be fastened by inserting a rod or a string through the hole of each holder.

[0054] The retaining member used herein is formed by a fastener that is inserted through the hole formed in the base of the beverage container holder in the form before use, a cover that serves to assist in fastening the holder bundle, and a hanger that allows the holder bundle to be hung on a hook etc. when in use.

[0055] The fastener is in the form of a rod or a string, and is made of metal, wood, synthetic resin, etc. For reusability, the fastener is preferably made of synthetic resin,

especially the same synthetic resin as that of the beverage container holder in the form before use.

[0056] The cover is formed to cover a part of the holder bundle, and the cover may be formed integrally with the hanger. For reusability, the cover and the hanger are also preferably made of the same synthetic resin as that of the beverage container holder in the form before use.

[0057] A mode of the beverage container holder product of the present invention will be described with reference to FIG. 7.

[0058] FIG. 7(A) shows a mode in which the separation means is the discontinuous cuts (perforations), and FIG. 7(B) shows a mode in which the separation means is the groove (cut groove).

[0059] A beverage container holder product 10 shown in FIG. 7(A) includes: a holder bundle formed by stacking, by fastening and retaining via the holes 9, a multiplicity of the beverage container holders in the form before use, in each of which the beverage container holder including the beverage container receiving portion 3 and the handle portion 4 is connected to the holder base having the holes 9 via the perforations 7 as the discontinuous cuts; and a retaining member that fastens and retains the holder bundle so that the holder bundle can be hung. The retaining member is formed by a cover 11 that covers a part of the holder bundle, a hanger portion 11a formed integrally with the cover 11, and fasteners 12.

[0060] A beverage container holder product 10 shown in FIG. 7(B) includes: a holder bundle formed by stacking, by fastening and retaining via the holes 9, a multiplicity of the beverage container holders in the form before use, in each of which the beverage container holder including the beverage container receiving portion 3 and the handle portion 4 is connected to the holder base having the holes 9 via the cut groove 7b as the groove; and a retaining member that fastens and retains the holder bundle so that the holder bundle can be hung. The retaining member is formed by a cover 11 that covers a part of the holder bundle, a hanger portion 11a formed integrally with the cover 11, and fasteners 12.

[0061] By merely hanging the beverage container holder product of the present invention on any convenient place by using the retaining member, a necessary number of beverage container holders can be easily provided when necessary by separating them from the holder bases by pulling. The beverage container holder product of the present invention therefore achieves high efficiency and high workability.

[0062] Another mode of the beverage container holder product of the present invention will be described with reference to FIG. 11.

[0063] A beverage container holder product 10 shown in FIG. 11 is formed by a holder bundle formed by stacking a multiplicity of the beverage container holders 6 in the form before use, and a retaining member 26. The retaining member 26 is formed by a holder cover 27, a hanger 28, and fasteners 29 (see FIG. 11(a)).

[0064] The holder cover 27 is shaped to cover a part

of the holder bundle of the multiplicity of beverage container holders 6 in the form before use, and is formed by a front surface 27a, a spine portion 27b, and a rear surface 27c. Each of the front surface 27a and the rear surface 27c of the holder cover 27 has two holes corresponding to the holes 9 of the beverage container holders 6 in the form before use (27d to 27g).

[0065] The hanger 28 has holes (28a, 28b) and a hanging portion 28c that allows the holder bundle to be hung, and the two fasteners 29 are provided so as to be inserted through the holes of the hanger 28.

[0066] The holder bundle of the multiplicity of beverage container holders 6 in the form before use, and the holder cover 27 are unified by the hanger 28 and the two fasteners 29 via the holes 27d to 27g of the holder cover and the holes 9 of the beverage container holders 6 in the form before use.

[0067] By merely hanging the beverage container holder product in this mode on any convenient place by using the hanging portion of the holder hanger, a necessary number of beverage container holders can be easily provided when necessary by separating them from the holder bases by pulling. The beverage container holder product in this mode therefore achieves high efficiency and high workability.

[0068] A method for manufacturing the beverage container holder in the form before use will be described below.

[0069] By way of example, the beverage container holder in the form before use, for example, the beverage container holder shown in FIG. 2, can be manufactured according to a method shown in FIG. 8.

[0070] As shown in FIG. 8, a continuous cylindrical synthetic resin film 13 fed in a folded state from a forming machine is heat-welded by heat sealing along thick lines 14 extending at regular intervals in a direction perpendicular to a longitudinal direction of the film. The separation means for allowing the beverage container holder to be separated, namely the discontinuous cuts (e.g., perforations) or the groove (e.g., a cut groove), and as necessary, holes 16 and/or a plurality of parallel welded parts (corresponding to 5a, 5b, or 5c in FIG. 3) or welded parts (corresponding to 5d in FIG. 4) as straight lines extending toward the centerline of each cylindrical portion, which are used to taper each beverage container receiving portion, are formed along lines 15 in the longitudinal direction of the film. Lastly, the synthetic resin film 13 is cut with a cutter along the heat-welding lines 14 and cut lines 17, 18, and as necessary, a part of each beverage container receiving portion (each triangular portion interposed between the welded part 5d and the joint part 5 shown in FIG. 4) is cut away. A plurality of beverage container holders in the form before use can be thus manufactured at a time.

[0071] As can be seen from the figure, the synthetic resin film 13 is cut along the cut lines 17 so as to form protrusions in each contact portion between the holders so that the upper edge of each beverage container re-

ceiving portion forms an obtuse angle.

[0072] This manufacturing method is advantageous because the beverage container holders in the form before use can be efficiently manufactured by a very simple process. This manufacturing method is also economically and environmentally advantageous because only a small amount of the cylindrical synthetic resin film 13 is discarded, and most of the cylindrical synthetic resin film 13 is used for manufacturing.

[0073] The beverage container holder shown in FIG. 5 can be manufactured according to, e.g., a process diagram shown in FIG. 9.

[0074] As shown in FIG. 9, a continuous cylindrical synthetic resin film 13 fed in a folded state from a forming machine (FIG. 9a) is heat-welded and cut along melt cut lines 19, 20 (FIG. 9b) to form a basic holder pattern 21. Separation means 22 for allowing the beverage container holder to be separated, namely the discontinuous cuts (e.g., perforations) or the groove (e.g., a cut groove), and holes 23 are formed along lines in the longitudinal direction of the film (FIG. 9c).

[0075] Then, the synthetic resin film 13 is cut with a cutter along cut lines 24 (FIG. 9d) to remove unnecessary portions 25. The beverage container holders in the form before use can thus be manufactured (FIG. 9e).

[0076] As shown in the process diagram shown in FIG. 9 (see FIGS. 9b to 9c), the basic holder pattern 21 in this example is a combination of two beverage container holders in the form before use, which are inverted with respect to each other. Two holders are thus manufactured at a time.

[0077] According to this manufacturing method, not only the beverage container holder of the present invention can be efficiently manufactured by a very simple process, but also only a very small amount of the cylindrical synthetic resin film 13 is discarded, and most of the cylindrical synthetic resin film 13 is used for manufacturing. This manufacturing method is therefore advantageous environmentally as well as economically.

Examples

First Example: Manufacturing of Beverage Container Holder in the Form Before Use (Separation Means: Perforations)

[0078] A method for manufacturing the beverage container holder in the form before use shown in FIG. 5 will be described with reference to the process diagram of FIG. 9.

[0079] A cylindrical film 13 made of high density polyethylene and having a thickness of 30 μm (FIG. 9(a)) was heat-welded and cut along melt cut lines 19, 20 to form a basic holder pattern portion 21. Perforations 22 (6 mm-long cut portions and 1.5 mm-long non-cut portions) were formed in the basic holder pattern portion 21 with a perforation cutter, and holes 23 were formed (see FIGS. 9(b) and 9(c)).

[0080] Subsequently, the basic holder pattern 21 was cut along cut lines 24 to remove removal portions 25. Beverage container holders 6 in the form before use were thus manufactured.

[0081] As shown in, e.g., FIG. 10, the beverage container holder 6 in the form before use thus obtained had the following size.

The length 1a of the holder 1: 25 cm;

[0082] The width 3a on the handle portion side of the beverage container receiving portion 3: 12 cm, the length 3b of the beverage container receiving portion 3: 8 cm, and the width 3c on the holder base side of the beverage container receiving portion 3: 10.2 cm;

The width 4a of the handle portion 4: 3.5 cm;

[0083] The width 8a of the holder base: 10.2 cm, and the length 8b of the holder base: 1.5 cm; and

[0084] The diameter 9a of the hole 9: 5.5 mm, the length 9b from the end of the holder base to the center of the hole 9: 7 mm; and the distance 9c from the center of the hole 9 to the centerline X-X' in the longitudinal direction of the holder 1: 4 cm.

[0085] The vertex of the joint part 5 of the holder 1 had such a gently curved shape as shown in FIG. 1(b), and the angle α was 160 degrees.

Second Example: Beverage Container Holder Product (Separation Means: Perforations)

[0086] A method for manufacturing a beverage container holder product (separation means: perforations) will be described with reference to FIG. 11.

[0087] 200 of the beverage container holders 6 in the form before use manufactured in the first example were stacked to form a holder bundle. In this example, a retaining member 26 was formed by a holder cover 27, a hanger 28, and fasteners 29.

[0088] A plate of high-density polyethylene having a thickness of 1 mm was used as the holder cover 27 for the beverage container holder product 10. The holder cover 27 was formed to have a front surface 27a covering 90% or more of the beverage container receiving portion 3 of the beverage container holder 1 and having holes 27d, 27e (hole diameter: 5 mm, located 7.5 mm away from the upper end, and distance between the holes: 9 cm) at positions corresponding to the holes 9 of the holder, a spine portion 27b formed continuously with the front surface 27a, and a rear surface 27c formed continuously with the spine portion 27b and having holes 27f, 27g (hole diameter: 5 mm, located 7.5 mm away from the upper end, and distance between the holes: 9 cm) at positions corresponding to the holes 9 of the holder. The boundary between the front surface 27a and the spine portion 27b and the boundary between the spine portion 27b and the rear surface 27c were processed so that the plate could

be easily folded.

[0089] Both the hanger 28 and the fasteners 29 were made of high-density polyethylene.

[0090] Holes 28a, 28b were formed in the hanger 28 at positions corresponding to the two holes 9 formed in the holder base 8 of the beverage container holder 6 in the form before use, and a hanging portion 28c that allows the holder bundle to be hung on a hook etc. when in use.

[0091] Each fastener 29 had a rod shape with a diameter of 5 mm. One tip end of the fastener 29 was processed to serve as a stopper when the fastener 29 was inserted in the hole of the hanger 28, and the other tip end thereof was processed to serve as a stopper against the hole of the beverage container holder 6 in the form before use. That is, the one tip end of each fastener 29 was processed so as not to allow the fasteners 29 to easily come off once inserted into the holes of the hanger 28, and the holes 28a, 28b of the hanger 28 and the other tip end of each fastener 29 were processed so as not to allow the beverage container holders 6 in the form before to come off from the fasteners 29 when the fasteners 29 were inserted through the beverage container holders 6 via the holes 9 thereof.

[0092] The holes 28a, 28b in the hanger 28, the holes 27d, 27e in the front surface 27a of the holder cover 27, the holes 9 formed in the holder base 8 of the beverage container holders 6 in the form before use, and the holes 27f, 27g in the rear surface 27c of the holder cover 27 were aligned, and the fasteners 29 were inserted there-through from the rear surface 27c side of the holder cover 27. The beverage container holder product was thus manufactured.

Third Example: Disposable Beverage Container Holder

[0093] One of the holders bundled in the beverage container holder product (separation means: perforations) manufactured in the second example was separated along the perforations by pulling to obtain a disposable beverage container holder.

[0094] In the disposable beverage container holder thus obtained, a beverage container, which was a coffee cup with a lid, was able to be easily placed and held in the cylindrical beverage container receiving portion of the holder. The disposable beverage container holder holding the beverage container was convenient to hold with a hand or to hang over the hand, and no coffee spilled from the cup. The handle portion and the beverage container receiving portion had enough strength.

Fourth Example: Manufacturing of Beverage Container Holder in Form before Use (Separation Means: Perforations)

[0095] Manufacturing of a beverage container holder in the form before use will be described according to the manufacturing method shown in FIG. 8.

[0096] A cylindrical film 13 made of high-density poly-

ethylene and having a thickness of 30 μm (width when folded in half: 51 cm) was heat-welded in a direction perpendicular to the longitudinal direction of the cylindrical film 13 along its entire width at intervals of 12 cm by using a 2 mm-wide flat heat sealer, thereby forming heat-welding lines 14. Two lines of perforations 15 (having 6 mm-long cut portions and 1.5 mm-long non-cut portions) were formed with a perforation cutter at positions that were located on both sides of the centerline dividing the cylindrical film 13 into two in the longitudinal direction and located 1.5 cm away from the centerline. Four holes 16 with a diameter of 5 mm were formed in each quadrilateral surrounded by the two lines of perforations and the two heat-welding lines, such that the holes in each quadrilateral were separated from each other by 9 cm in the longitudinal direction of the cylindrical film and by 1.5 cm in the direction perpendicular to the longitudinal direction. Subsequently, in order to form handle portions, the cylindrical film 13 was cut with a width of 7 cm and a height of 17.5 cm along each cut line 17 with a cutter so as to form a gentle curve in each boundary region between the handle portion and the beverage container receiving portion and a protrusion (height: 3 mm, angle: 130 degrees) in each contact portion between the holders. The resultant cylindrical film 13 was cut with the cutter along both the centerline 18 dividing the cylindrical film 13 into two in the longitudinal direction and each heat-welding lines 14 (the middle of the line). Beverage container holders in the form before use were thus manufactured.

Fifth Example: Manufacturing of Beverage Container Holder in Form before Use (Separation Means: Cut Groove)

[0097] Manufacturing of a beverage container holder in the form before use will be described according to the manufacturing method shown in FIG. 8.

[0098] A cylindrical film 13 made of high-density polyethylene and having a thickness of 30 μm (width when folded in half: 51 cm) was heat-welded in a direction perpendicular to the longitudinal direction of the cylindrical film 13 along its entire width at intervals of 12 cm by using a 2 mm-wide flat heat sealer, thereby forming heat-welding lines 14.

Cut grooves 15 (two cut grooves) were formed at positions that were located on respective sides of the centerline dividing the cylindrical film 13 into two in the longitudinal direction and located 1.5 cm away from the centerline. Four holes 16 with a diameter of 5 mm were formed in each quadrilateral surrounded by the two cut grooves and the two heat-welding lines, such that the holes in each quadrilateral were separated from each other by 9 cm in the longitudinal direction of the cylindrical film and by 1.5 cm in the direction perpendicular to the longitudinal direction. Subsequently, in order to form handle portions, the cylindrical film 13 was cut with a width of 7 cm and a height of 17.5 cm along each cut line 17 with a cutter so as to form a gentle curve in each boundary region be-

tween the handle portion and the beverage container receiving portion and a protrusion (height: 3 mm, angle: 130 degrees) in each contact portion between the holders. The resultant cylindrical film 13 was cut with the cutter along both the centerline 18 dividing the cylindrical film 13 into two in the longitudinal direction and each heat-welding line 14 (the middle of the line). Beverage container holders in the form before use were thus manufactured.

Sixth Example: Manufacturing of Beverage Container Holder in Form before Use (Separation Means: Perforations and Tapering)

[0099] A beverage container holder in the form before use having a tapered beverage container receiving portion was manufactured by performing the operation similar to the fourth example except that welded parts corresponding to the plurality of parallel welded parts 5a in FIG. 3 were formed with a 2 mm-wide flat heat sealer after forming the holes 16.

[0100] The welded parts were provided at four positions (on respective sides) located 1.3 cm (length: 4 mm, width: 2 mm), 2.6 cm (length: 3 mm, width: 2 mm), 3.9 cm (length: 2 mm, width: 2 mm), and 5.2 cm (length: 1 mm, width: 2 mm) away from the lower end of the beverage container receiving portion, respectively.

Seventh Example: Manufacturing of Beverage Container Holder in Form before Use (Separation Means: Perforations and Tapering)

[0101] A beverage container holder in the form before use having a tapered beverage container receiving portion was manufactured by performing the operation similar to the fourth example except that welded parts corresponding to the welded parts 5d in FIG. 4 were formed with a 2 mm-wide flat heat sealer after forming the holes 16.

[0102] The distance between the substantially linear shape formed by the welded part 5d and the straight line formed by the joint part 5 was set to be 5 mm at the lower edge of the beverage container receiving portion.

Eighth Example: Manufacturing of Beverage Container Holder in Form before Use (Separation Means: Perforations and Tapering)

[0103] A beverage container holder in the form before use, which was intended to produce the beverage container holder shown in FIG. 5, was manufactured by performing the operation similar to the seventh example except that each portion surrounded by the substantially linear shape formed by the welded part 5d shown in FIG. 4, the joint part 5, and the lower edge of the beverage container receiving portion was removed.

Ninth Example: Manufacturing of Beverage Container Holder Product (Separation Means: Perforations)

[0104] Manufacturing of a beverage container holder product (separation means: perforations) will be described with reference to FIG. 7(A).

[0105] A cover as shown by "11" in FIG. 7(A) was prepared. Namely, a cover was prepared which was formed by a high-density polyethylene plate having a thickness of 1 mm, which had a front surface covering 90% or more of the beverage container receiving portion of the holder and had holes (hole diameter: 5 mm, located 7.5 mm away from the upper end, and distance between the holes: 9 cm) at positions corresponding to the holes 9 of the holder, and a part of which formed a hanger portion 11a allowing a holder bundle to be hung.

[0106] 100 of the beverage container holders in the form before use (separation means: perforations) manufactured in the fourth example were stacked and placed in the prepared cover. The holes 9 in the holders were aligned with the holes in the cover, and high-density polyethylene rods (two rods) with a diameter of 5 mm were inserted therethrough as the fasteners 12. Both ends of each rod were melted by heat to fix each rod so that it wouldn't come off. The beverage container holder product was thus manufactured.

Tenth Example: Manufacturing of Beverage Container Holder Product (Separation Means: Cut Groove)

[0107] Manufacturing of a beverage container holder product (separation means: cut groove) will be described with reference to FIG. 7(B).

[0108] A cover as shown by "11" in FIG. 7(B) was prepared. Namely, a cover was prepared which was formed by a high-density polyethylene plate having a thickness of 1 mm, which had a front surface covering 90% or more of the beverage container receiving portion of the holder and had holes (hole diameter: 5 mm, located 7.5 mm away from the upper end, and distance between the holes: 9 cm) at positions corresponding to the holes 9 of the holder, and a part of which formed a hanger portion 11a allowing a holder bundle to be hung.

[0109] 100 of the beverage container holders in the form before use (separation means: cut groove) manufactured in the fifth example were stacked and placed in the prepared cover. The holes 9 in the holders were aligned with the holes in the cover, and high-density polyethylene rods (two rods) with a diameter of 5 mm were inserted therethrough as the fasteners 12. Both ends of each rod were melted by heat to fix each rod so that it wouldn't come off. The beverage container holder product was thus manufactured.

Eleventh Example: Manufacturing of Beverage Container Holder Product (Separation Means: Perforations and Tapering)

[0110] A beverage container holder product (separation means: perforations and tapering) was manufactured by performing the operation similar to the ninth example except that the beverage container holders in the form before use (separation means: perforations and tapering) manufactured in the sixth example were used instead of the beverage container holders in the form before use (separation means: perforations) manufactured in the fourth example.

Twelfth Example: Manufacturing of Beverage Container Holder Product (Separation Means: Perforations and Tapering)

[0111] A beverage container holder product (separation means: perforations and tapering) was manufactured by performing the operation similar to the ninth example except that the beverage container holders in the form before use (separation means: perforations and tapering) manufactured in the seventh example were used instead of the beverage container holders in the form before use (separation means: perforations) manufactured in the fourth example.

Thirteenth Example: Manufacturing of Beverage Container Holder Product (Separation Means: Perforations and Tapering)

[0112] A beverage container holder product (separation means: perforations and tapering) was manufactured by performing the operation similar to the ninth example except that the beverage container holders in the form before use (separation means: perforations and tapering) manufactured in the eighth example were used instead of the beverage container holders in the form before use (separation means: perforations) manufactured in the fourth example.

Fourteenth Example: Disposable Beverage Container Holder

[0113] One of the holders bundled in the beverage container holder product (separation means: perforations) manufactured in the ninth example was separated along the perforations by pulling to obtain a disposable beverage container holder.

[0114] In the disposable beverage container holder thus obtained, a beverage container, which was a coffee cup with a lid, was able to be easily placed and held in the cylindrical beverage container receiving portion of the holder. The disposable beverage container holder holding the beverage container was convenient to hold with a hand or to hang over the hand, and no coffee spilled from the cup. The handle portion and the beverage con-

tainer receiving portion had enough strength.

Fifteenth Example: Disposable Beverage Container Holder

[0115] One of the holders bundled in the beverage container holder product (separation means: cut groove) manufactured in the tenth example was separated along the cut groove by pulling to obtain a disposable beverage container holder.

[0116] In the disposable beverage container holder thus obtained, a beverage container, which was a coffee cup with a lid, was able to be easily placed and held in the cylindrical beverage container receiving portion of the holder. The disposable beverage container holder holding the beverage container was convenient to hold with a hand or to hang over the hand, and no coffee spilled from the cup. The handle portion and the beverage container receiving portion had enough strength.

Sixteenth Example: Disposable Beverage Container Holder

[0117] One of the holders bundled in the beverage container holder product (separation means: perforations and tapering) manufactured in the eleventh example was separated along the perforations by pulling to obtain a disposable beverage container holder.

[0118] In the disposable beverage container holder thus obtained, a beverage container, which was a coffee cup with a lid, was able to be easily placed and held in the cylindrical beverage container receiving portion of the holder. The disposable beverage container holder holding the beverage container was convenient to hold with a hand or to hang over the hand, and no coffee spilled from the cup. The handle portion and the beverage container receiving portion had enough strength.

Seventeenth Example: Disposable Beverage Container Holder

[0119] One of the holders bundled in the beverage container holder product (separation means: perforations and tapering) manufactured in the twelfth example was separated along the perforations by pulling to obtain a disposable beverage container holder.

[0120] In the disposable beverage container holder thus obtained, a beverage container, which was a coffee cup with a lid, was able to be easily placed and held in the cylindrical beverage container receiving portion of the holder. The disposable beverage container holder holding the beverage container was convenient to hold with a hand or to hang over the hand, and no coffee spilled from the cup. The handle portion and the beverage container receiving portion had enough strength.

Eighteenth Example: Disposable Beverage Container Holder

[0121] One of the holders bundled in the beverage container holder product (separation means: perforations and tapering) manufactured in the thirteenth example was separated along the perforations by pulling to obtain a disposable beverage container holder.

[0122] In the disposable beverage container holder thus obtained, a beverage container, which was a coffee cup with a lid, was able to be easily placed and held in the cylindrical beverage container receiving portion of the holder. The disposable beverage container holder holding the beverage container was convenient to hold with a hand or to hang over the hand, and no coffee spilled from the cup. The handle portion and the beverage container receiving portion had enough strength.

Description of the Reference Numerals

[0123]

1: Disposable Beverage Container Holder

1a: Length of Holder 1

2: Beverage Container

3: Beverage Container Receiving Portion

3a: Width on Handle Portion Side of Beverage Container Receiving Portion

3b: Length on Handle Portion Side of Beverage Container Receiving Portion

3c: Width on Holder Base Side of Beverage Container Receiving Portion

4: Handle Portion

4a: Width of Handle Portion

5: Joint Part

5a: Heat-Welded Part

5b: Heat-Welded Part

5c: Heat-Welded Part

5d: Heat-Welded Part

α : Obtuse Angle

6: Beverage Container Holder in Form before Use

7: Discontinuous Cuts (Perforations)

7b: Groove (Cut Groove)

8: Holder Base

8a: Width of Holder Base

8g: Length of Holder Base

9: Hole

9a: Diameter of Hole			angle at an upper end of the joint part.
9b: Length from End of Holder Base to Center of Hole 9			
9c: Distance from Center of Hole 9 to Centerline X-X' in Longitudinal Direction of Holder 1	5		
X-X': Centerline in Longitudinal Direction of Holder 1			
10: Beverage Container Holder Product			
11: Cover	10		
11a: Hanger Portion			
12: Fastener			
13: Cylindrical Synthetic Resin Film	15		
14: Heat-Welding Line			
15: Separation Means			
16: Hole			
17: Cut Line (Forms Handle Portion)			
18: Cut Line (Centerline)	20		
19: Melt Cut Line			
20: Melt Cut Line			
21: Basic Holder Pattern			
22: Separation Means			
23: Hole	25		
24: Cut Line			
25: Unnecessary Portion			
26: Retaining Member			
27: Holder Cover	30		
27a: Front Surface			
27b: Spine Portion			
27c: Rear Surface			
27d to 27g: Hole	35		
28: Hanger			
28a, 28b: Hole			
28c: Hanging Portion	40		
29: Fastener			
Claims	45		
1. A disposable beverage container holder formed by cutting and welding a synthetic resin film folded in half, comprising:			
a beverage container receiving portion formed in a cylindrical shape by joining the synthetic resin film by welding; and	50		
a handle portion including the folded part and formed continuously from one of two opposing positions on an upper end of the cylindrical receiving portion to the other, wherein			
the synthetic resin film is cut so that an upper edge of the receiving portion forms an obtuse	55		
		2.	The beverage container holder according to claim 1, wherein the beverage container receiving portion has the joint part formed so that the cylindrical portion of the beverage container receiving portion has a tapered inner diameter that gradually decreases toward a lower edge of the receiving portion.
		3.	The beverage container holder according to claim 1, wherein the beverage container receiving portion is further provided with a welded part so that the cylindrical portion of the beverage container receiving portion has a tapered inner diameter that gradually decreases toward a lower edge of the receiving portion.
		4.	The beverage container holder according to claim 3, wherein the welded part is formed by a plurality of stages of welded parts, which are provided at intervals and extend substantially horizontally, and the plurality of stages of welded parts are formed so that the welded parts in each stage are located closer to a centerline of the cylindrical portion from the upper edge toward the lower edge of the beverage container receiving portion.
		5.	The beverage container holder according to claim 3, wherein the welded part is formed in a substantially linear shape starting from the upper end of the joint part and extending toward a centerline of the cylindrical portion of the beverage container receiving portion from the upper edge to the lower edge of the beverage container receiving portion.
		6.	A beverage container holder in a form before use, comprising: the beverage container holder according to any one of claims 1 to 5; a holder base extended from the lower edge of the beverage container receiving portion; and separation means for allowing the beverage container holder to be separated from the holder base by pulling.
		7.	The beverage container holder in the form before use according to claim 6, wherein the separation means is discontinuous cuts.
		8.	The beverage container holder in the form before use according to claim 6, wherein the separation means is a groove.
		9.	A beverage container holder product, comprising:

a holder bundle formed by stacking a multiplicity of the beverage container holders in the form before use according to any one of claims 6 to 8; and

a retaining member that fastens and retains the holder bundle so that the holder bundle can be hung.

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FIG. 1

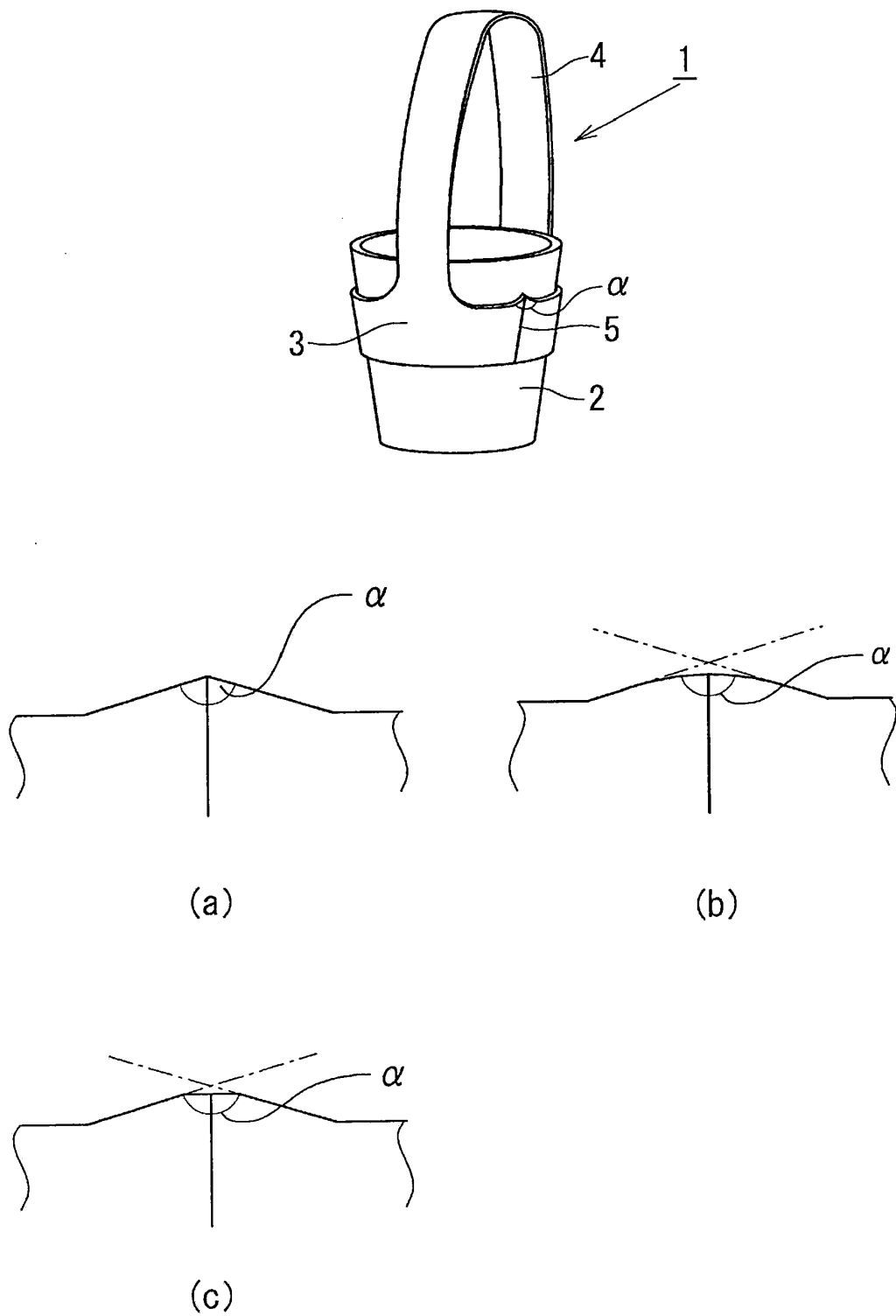


FIG. 2

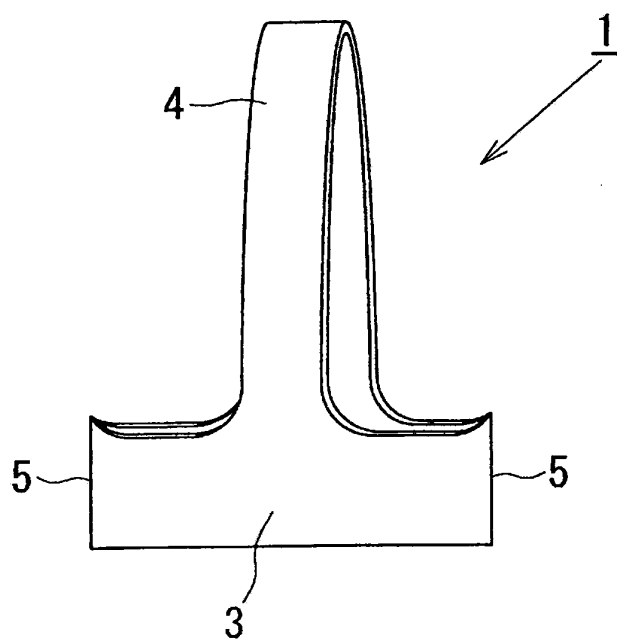


FIG. 3

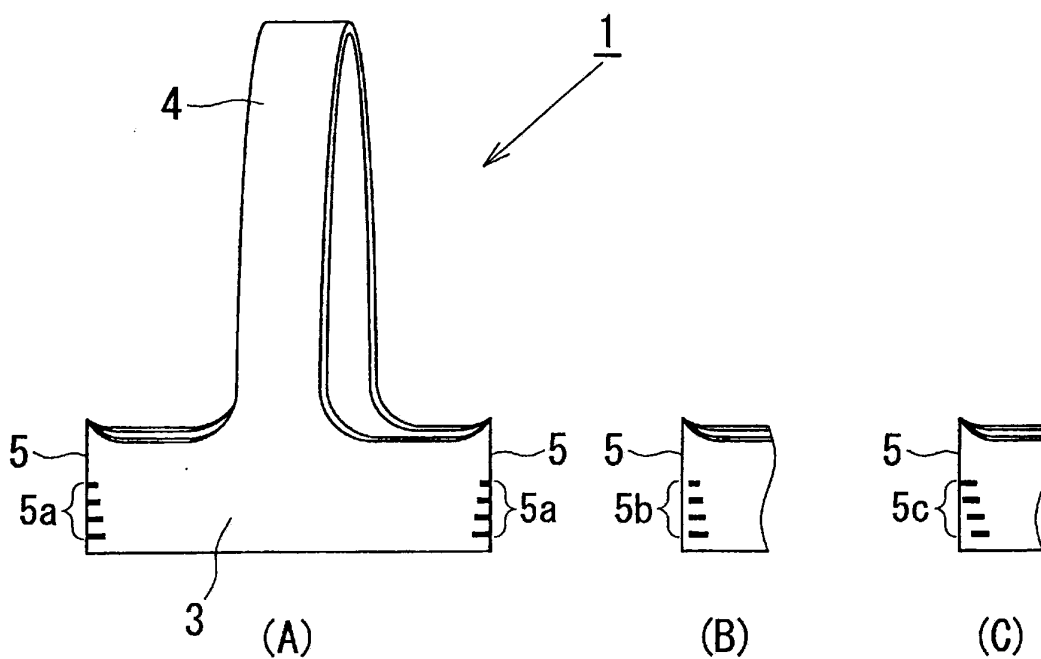


FIG. 4

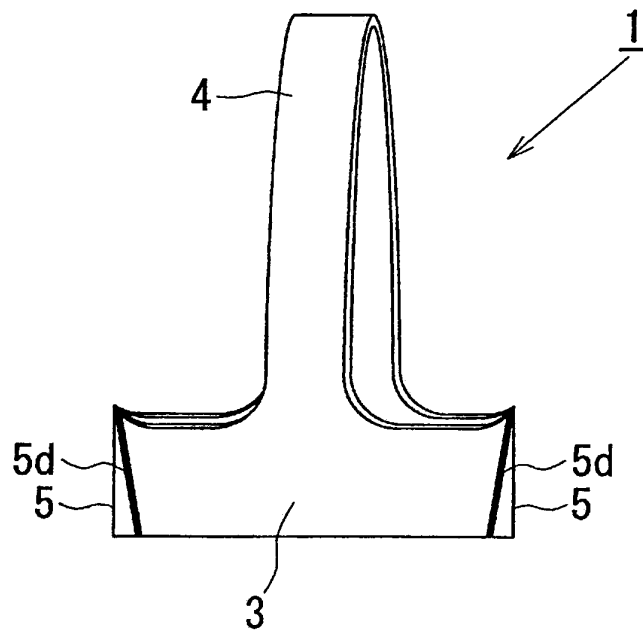


FIG. 5

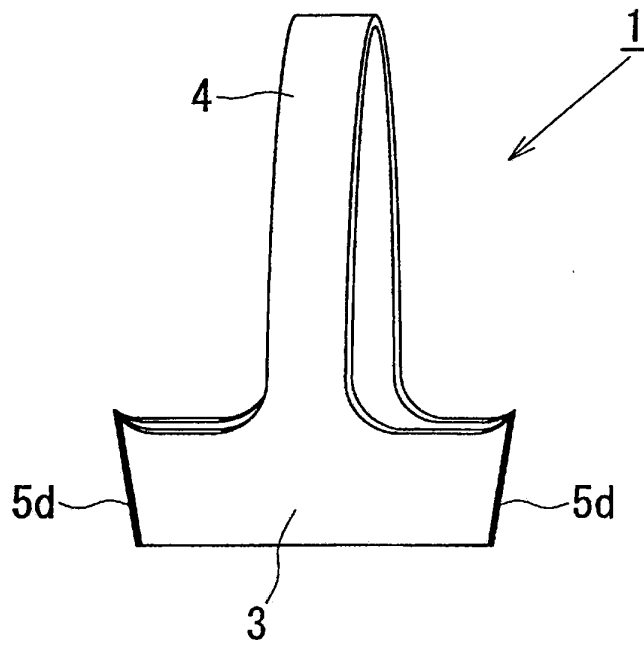


FIG. 6

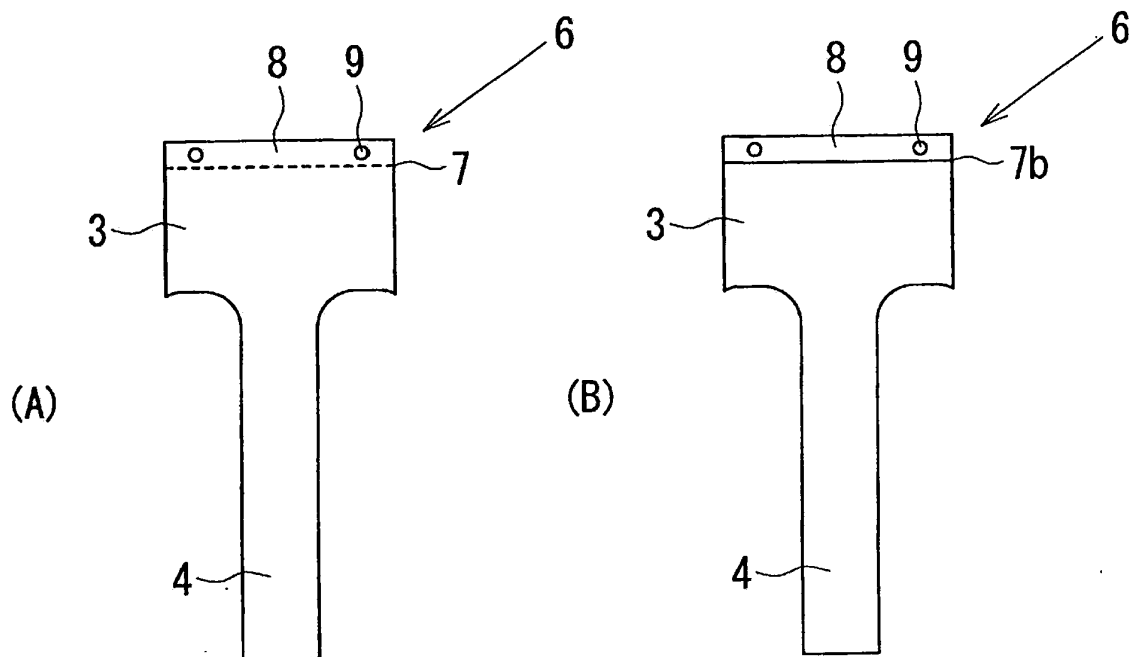


FIG. 7

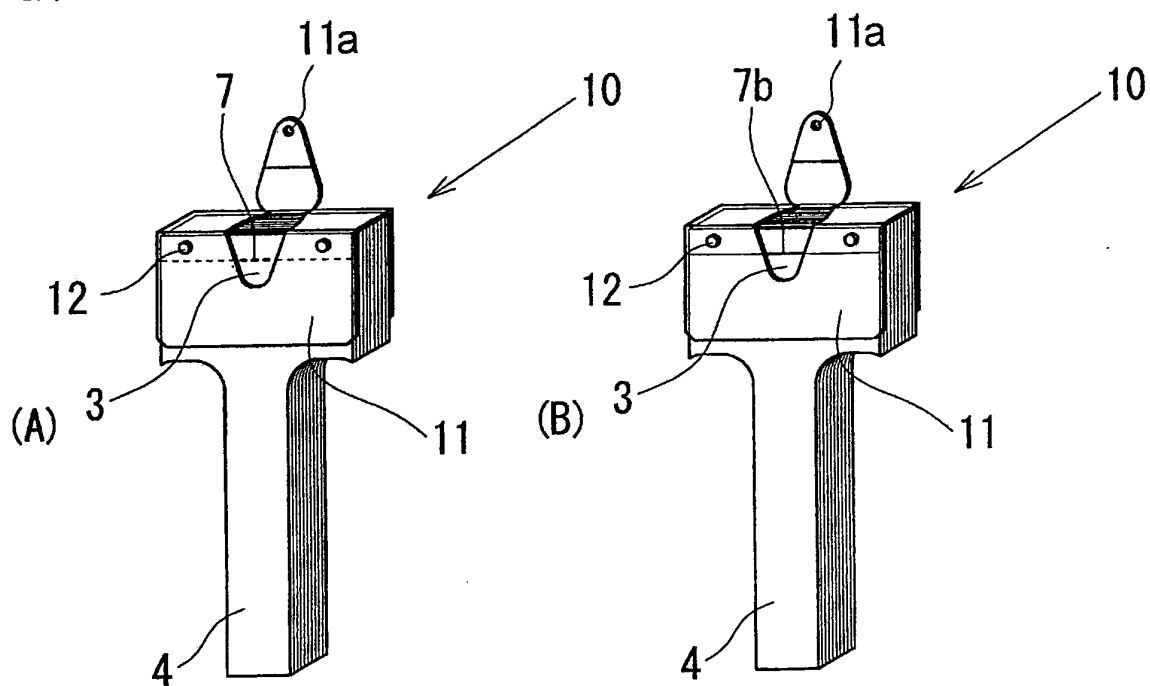


FIG. 8

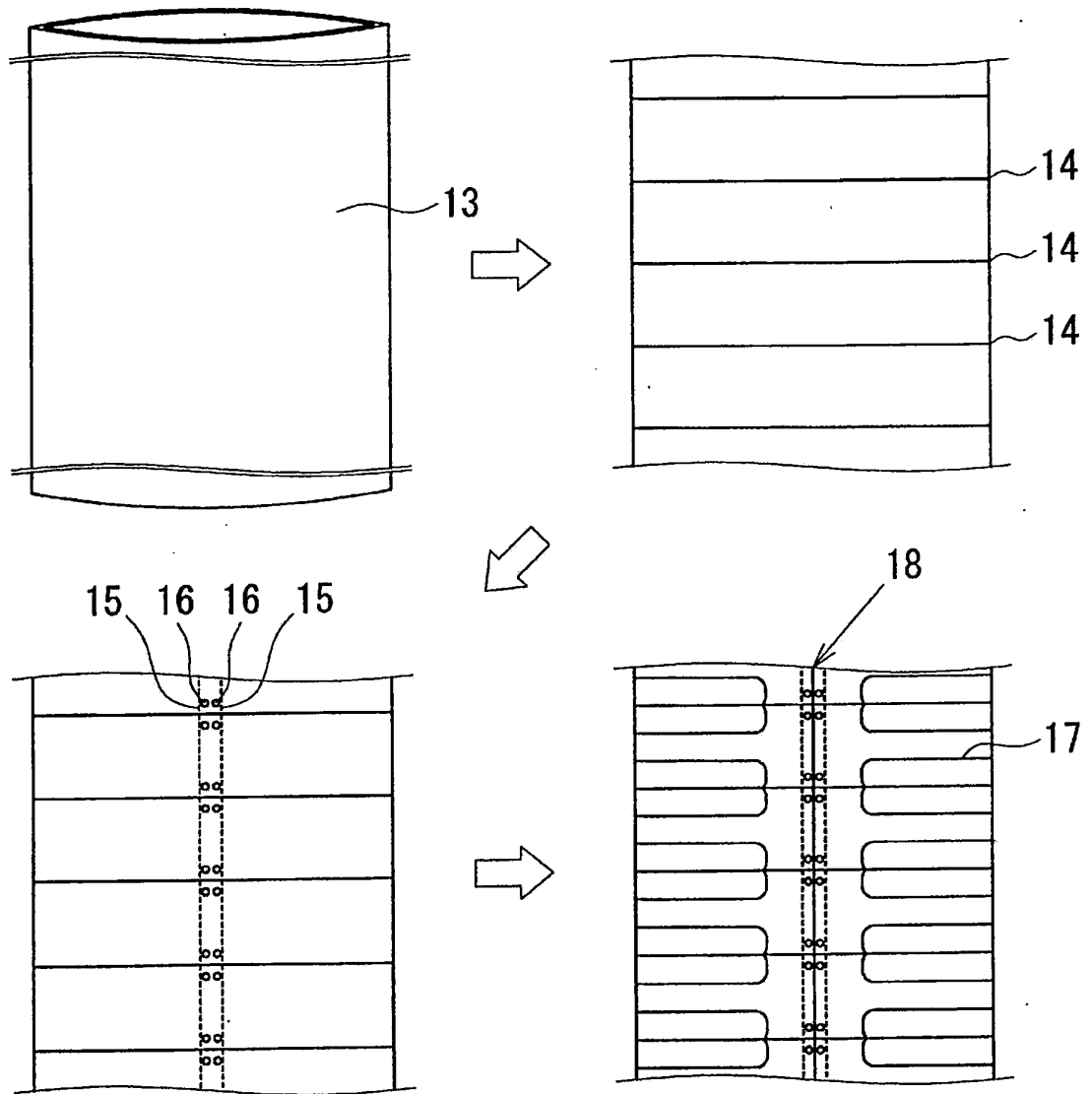


FIG. 9

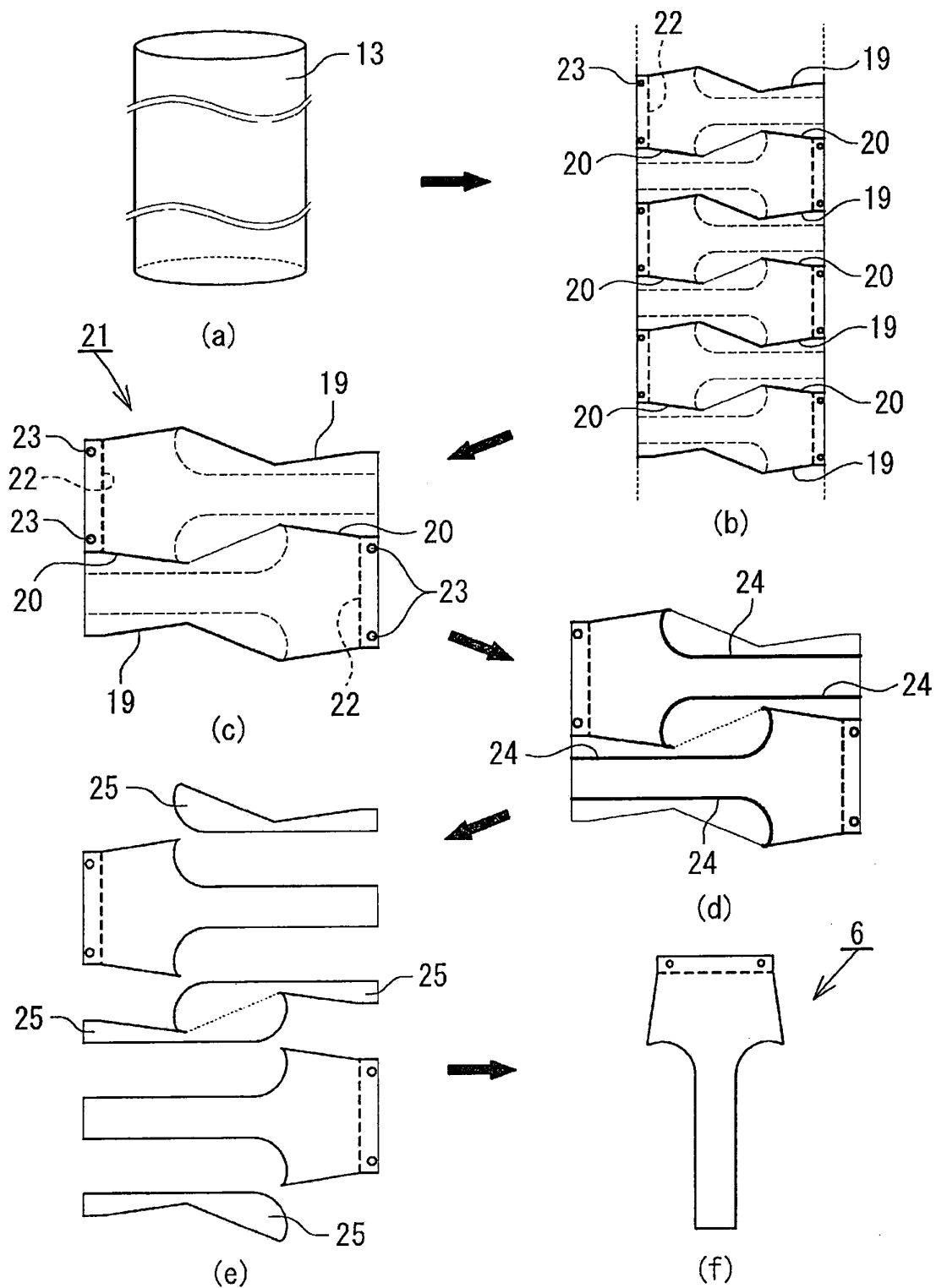


FIG. 10

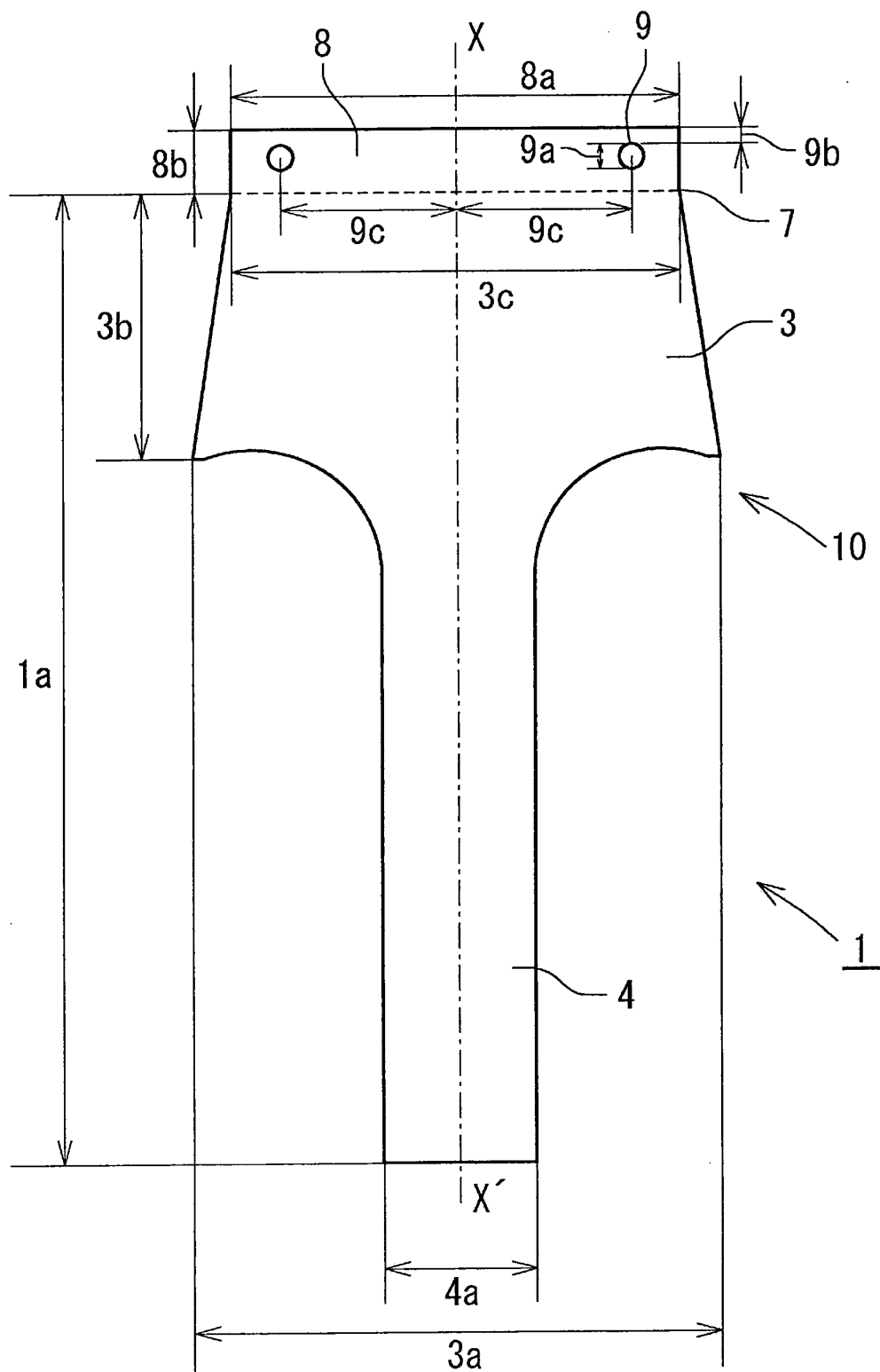
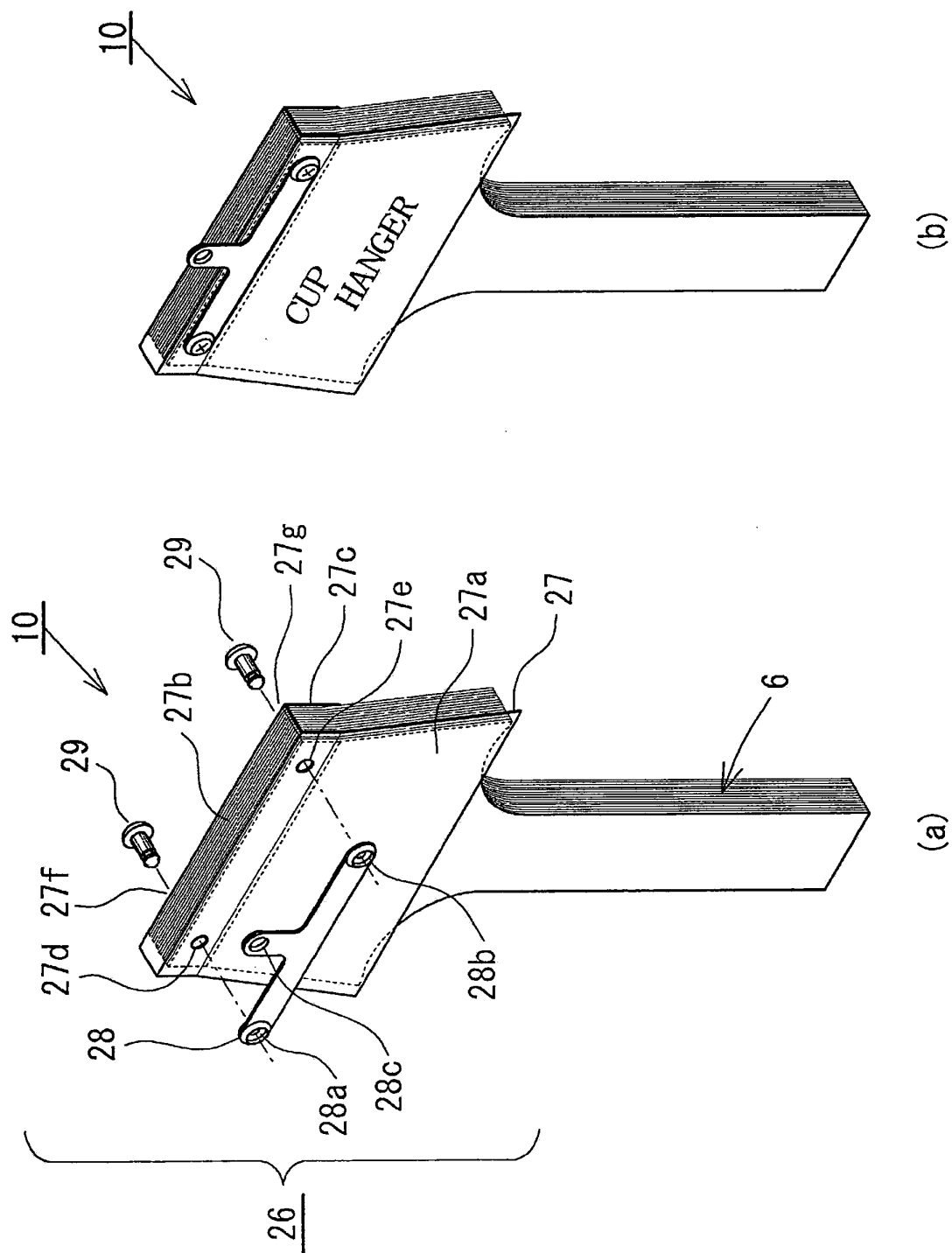


FIG. 11



INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2011/068779

A. CLASSIFICATION OF SUBJECT MATTER

B65D25/28 (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)

B65D25/28

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

Jitsuyo Shinan Koho	1922-1996	Jitsuyo Shinan Toroku Koho	1996-2011
Kokai Jitsuyo Shinan Koho	1971-2011	Toroku Jitsuyo Shinan Koho	1994-2011

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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	JP 2008-80072 A (Yasuyuki MIYAZAKI), 10 April 2008 (10.04.2008), paragraphs [0017] to [0025]; fig. 1 to 4 (Family: none)	1-9
Y	JP 9-30533 A (Yamagata Gravure Co., Ltd.), 04 February 1997 (04.02.1997), paragraphs [0010] to [0028]; fig. 1, 3, 4 (Family: none)	1-9

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

* Special categories of cited documents:

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"&" document member of the same patent family

Date of the actual completion of the international search
31 August, 2011 (31.08.11)Date of mailing of the international search report
13 September, 2011 (13.09.11)Name and mailing address of the ISA/
Japanese Patent Office

Authorized officer

Facsimile No.

Telephone No.

Form PCT/ISA/210 (second sheet) (July 2009)

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2011/068779

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	Microfilm of the specification and drawings annexed to the request of Japanese Utility Model Application No. 24081/1986 (Laid-open No. 134832/1987) (Morofuji Co., Ltd.), 25 August 1987 (25.08.1987), claims; fig. 1 to 4 (Family: none)	6-9
Y	JP 31-1581 Y1 (Takenori ASANO), 03 February 1956 (03.02.1956), (Family: none)	1-9
A	JP 2004-238075 A (Yugen Kaisha Mahora Create), 26 August 2004 (26.08.2004), (Family: none)	1-9

Form PCT/ISA/210 (continuation of second sheet) (July 2009)