

Title : **PAPER-MADE CONTAINER**

BACKGROUND OF THE INVENTION

(1) FIELD OF THE INVENTION

5 The present invention relates to a paper-made container, and more particularly, to a paper-made container with reinforcement structure.

(2) DESCRIPTION OF THE PRIOR ART

 Conventional containers such as plates, cups and food boxes are generally made of plastic material which is not bio-degradable and becomes
10 a burden for the environment.

 Although there are several paper-made containers seen in the market, the paper-made containers are made to include foldings or ridges to keep their shape. However, the foldings or ridges require a long time to form in the molds and adhesive is not easily applied to those portions so that the
15 containers are easily separated when multiple parts are adhered together. A prior art known to applicant discloses a paper-made container which is formed by a paper sheet which is machined to form a bottom and a peripheral wall which is separated from the bottom. The peripheral wall includes an outward inclined wall and a lip which is connected to the edge of
20 the outward inclined wall. A notch is defined at the conjunction of the outward inclined wall and the lip, and two sides of the notch are combined to form a converge portion. The underside of the outward inclined wall and the bottom are glued to form a container. The gluing process has to be completed manually due to the complicated structure and this increases the
25 manufacturing cost and the time required.

Fig. 1 shows a conventional paper-made container 91 with a film 92 coated thereon, wherein the container 91 includes four walls 41 and each wall 41 includes a connection lip and four corner parts 93 are connected to the adjacent ends of the adjacent lips to form a complete and continuous lip.

5 The film 92 is then coated to the inside of the container 91 and the lip to form a non-leak container. However, the corner parts 93 cannot be made to be in flush with the top surface or the bottom surface of the lips as shown in the two circled drawings in Fig. 1. The film 92 cannot smoothly to match the gap between the corner parts 93 and the lips, therefore, leakage can
10 happen at that area. Besides, some containers are rectangular containers and the long sides may bend during coating process and the film cannot firmly coat on the long sides of the containers.

The present invention intends to provide a paper-made container which improves the shortcomings of the conventional similar products.

15 SUMMARY OF THE INVENTION

The present invention relates to a paper-made container includes a paper sheet which has a bio-degradable layer coated thereto and an adhesive and bio-degradable glue layer is coated on proper portions such as the underside or the peripheral portion of the paper sheet such that the
20 paper sheet is made to be a container.

The present invention will become more obvious from the following description when taken in connection with the accompanying drawings which show, for purposes of illustration only, a preferred embodiment in
25 accordance with the present invention.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is an exploded view to show a conventional paper-made container;

5 Fig. 2 is an exploded view to show a paper-made plate of the present invention;

Fig. 3 is a perspective view to show the reverse side of the paper-made plate of the present invention;

Fig. 4 is a perspective view to show the paper-made plate of the present invention, wherein the adhesive glue layers are disclosed;

10 Fig. 5 is a side cross sectional view of the paper-made plate of the present invention;

Fig. 6 shows that the glue layer can be made to be a protrusion along the periphery of the bottom plate;

15 Fig. 7 is a side cross sectional view of the paper-made plate disclosed in Fig. 6 of the present invention;

Fig. 8 is a perspective view to show the paper-made food box of the present invention,

20 Fig. 9 is an exploded view to show the paper-made food box of the present invention;

Fig. 10 is a side cross sectional view of the paper-made food box of the present invention;

Fig. 11 shows a second embodiment of the connection of the film and the lips of the paper-made food box of the present invention;

Fig. 12 is a cross sectional view to show the second embodiment of the connection of the glue layer and the lips of the paper-made food box of the present invention;

5 Fig. 13 is a cross sectional view to show the second embodiment of the connection of the glue layer and the lips of the paper-made food box of the present invention, wherein a cover is mounted to the food box and engaged with the hook portion formed by the glue layer;

Fig. 14 shows a third embodiment of the connection of the glue layer and the lips of the paper-made food box of the present invention;

10 Fig. 15 is a cross sectional view to show the third embodiment of the connection of the glue layer and the lips of the paper-made food box of the present invention;

Fig. 16 is a cross sectional view to show the third embodiment of the
15 connection of the glue layer and the lips of the paper-made food box of the present invention, wherein a cover is mounted to the food box and engaged with the hook portion formed by the glue layer, and

Fig. 17 shows the paper-made cup of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

20 Referring to Figs. 2 to 17, the paper-made container of the present invention comprises a paper sheet 10 and an adhesive and bio-degradable glue layer 20 is coated on the paper sheet 10. The paper sheet is an elongate paper sheet and has a bio-degradable layer 11 coated thereto. The bio-degradable layer 11 is made of PE, PP, PET, or non-toxic resin or

degradable PLA. The paper sheet 10 is glued and folded to make to be a paper-made container 1 so as to contain water or food.

The adhesive and bio-degradable glue layer 20 can be PE, PP, PET, or non-toxic resin or degradable PLA, and is coated to the paper sheet 10 by way of injection such that the desired portions of the paper sheet 10 is coated with the glue layer 20.

Referring to Figs. 2 to 5, when the paper-made container is a plate which is composed of a bottom plate 12 and a peripheral wall 13, wherein the bottom plate 12 is a circular plate and the peripheral wall 13 is a ring-shaped paper made by connecting two ends of an elongate paper sheet. The diameter of the bottom plate 12 is the same as the bottom edge 131 of the peripheral wall 13 such that the bottom plate 12 is connected to the bottom edge 131 of the peripheral wall 13 by the glue layer 20. The bottom edge 131 of the peripheral wall 13 includes a glue layer 20.

Referring to Figs. 6 and 7, the glue layer 20 can be made to have extra function such as disclosed in Figs. 6 and 7, wherein the glue layer 20 is made to protrude outward as a protrusion 21 which is functioned as a support at the underside of the bottom plate 12.

When the paper-made container 1 is a food box as shown in Figs. 8 to 10, the paper sheet 10 includes multiple walls which are folded upward and each wall includes a lip 14. A corner space 15 is defined between two adjacent ends of the adjacent lips 14. The glue layer 20 is coated on the lips 14 and fills in the corner spaces 15 so as to reinforce the structural strength

of the lips 14. The glue layer 20 is coated on the food box by injection technique and a film 30 is then coated to the inside of the food box and the walls and the lips 14 to form the food box.

5 Figs. 11 to 13 show that the glue layer 20 on the lips 14 can be formed as a reinforcement portion 22 which extends downward and beyond the distal edge of the lips 14 and forms as a hook portion 23. The specific arrangement can reinforce the structural strength of the lips 14 and a cover 40 is hooked to the hook portions 23 to seal the food box.

10 Figs. 14 to 16 show that the glue layer 20 extends to an underside of each lip 14 and wraps around the distal edge of each lip 14, the hook portion 23 is formed at the underside of the distal edge. The arrangement can also reinforce the structural strength of the lips 14 and the hook portions 23 are cooperated with a cover 40 as well.

15 Fig. 17 shows that the paper-made container 1 is a cup, wherein the two ends of the paper sheet 10 are connected to each other to form a cylindrical body and two glue layers 20 are formed on a top edge and a lower edge of the cylindrical body.

20 The paper-made container 1 can be a plate, a cup or a food container, all of which is easily to make and includes proper structural strength.

While we have shown and described the embodiment in accordance with the present invention, it should be clear to those skilled in the art that further embodiments may be made without departing from the scope of the present invention.

WHAT IS CLAIMED IS:

1. A paper-made container comprising:

a paper sheet having a bio-degradable layer coated thereto and an adhesive and bio-degradable glue layer being coated on an underside or a peripheral portion of the paper sheet which is made to be a container.

2. The container as claimed in claim 1, wherein the paper sheet is composed of a bottom plate and a peripheral wall, the bottom plate is connected to the peripheral wall to form the container, the glue layer is formed at a connection portion between the bottom plate and the peripheral wall.

3. The container as claimed in claim 1, wherein the paper sheet includes multiple walls which are folded upward and each wall includes a lip, a corner space is defined between two adjacent ends of the adjacent lips, the glue layer is coated on the lips and fills in the corner spaces.

4. The container as claimed in claim 3, wherein the glue layer extends over the distal edge of each lip and forms a reinforcement portion, the reinforcement portion extends beyond the distal edge of the lip and bends downward and forms a hook portion.

5. The container as claimed in claim 3, wherein the glue layer extends to an underside of each lip and wraps around the distal edge of each lip, the hook portion is formed at the underside of the distal edge.

6. The container as claimed in claim 1, wherein two ends of the paper sheet are connected to each other to form a cylindrical body and two glue layers are formed on a top edge and a lower edge of the cylindrical body.