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Lin

(54) HEAT ISOLATION COLLAR FOR PAPER CUP

(75) Inventor: **Sheng-Hung Lin**, Taipei City (TW)

(73) Assignee: **POWER SOURCE & ASSOCIATES CORP.**

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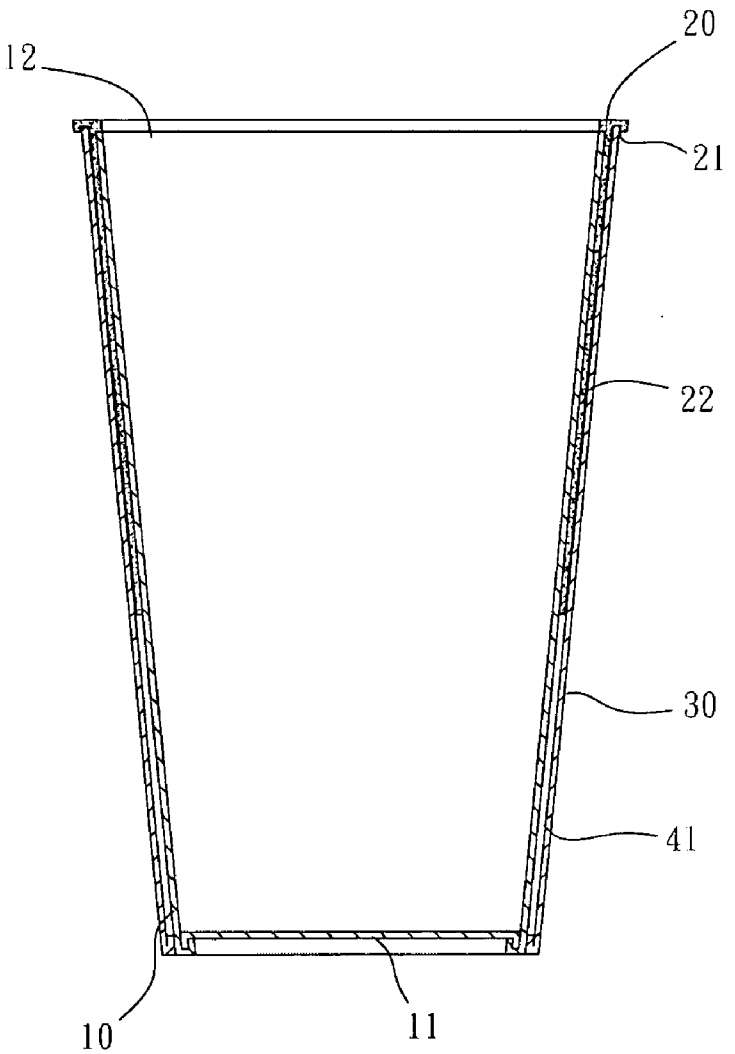
(57) **ABSTRACT**

A paper cup assembly includes a paper cup **10** with a bottom piece connected to the lower end thereof and the cup has an open top. A lip portion made of bio-degradable plastic material is formed along the open top by way of injection molding, heat-pressing or high-frequency wave welding. Multiple protrusions are formed on the outside of the cup when forming the lip portion. The cup has a positioning portion and the isolation collar is mounted to the cup and the top portion of the isolation collar is connected to the positioning portion. The lower portion of the isolation collar is fixed to the cup. A gap is defined between the whole isolation collar and the cup. When used to a deep cup, the protrusions are helpful for isolating the heat from the cup.



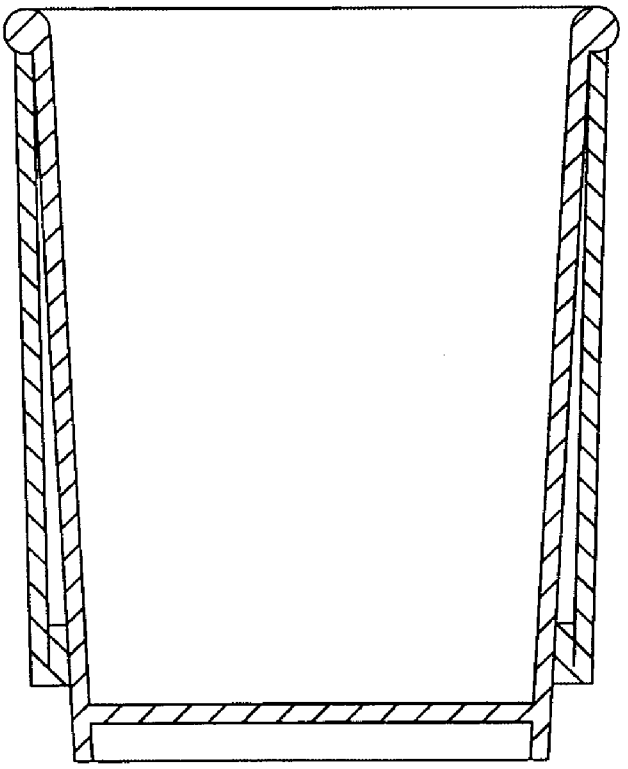


FIG. 1
PRIOR ART

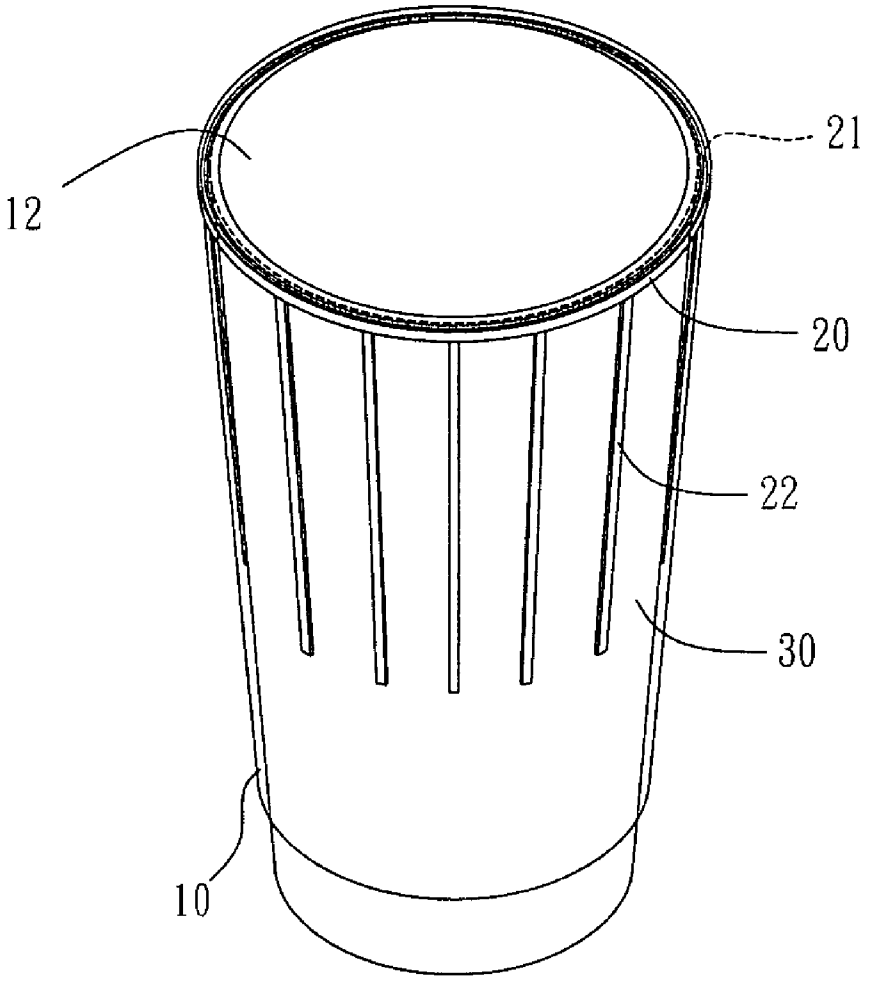



FIG.2

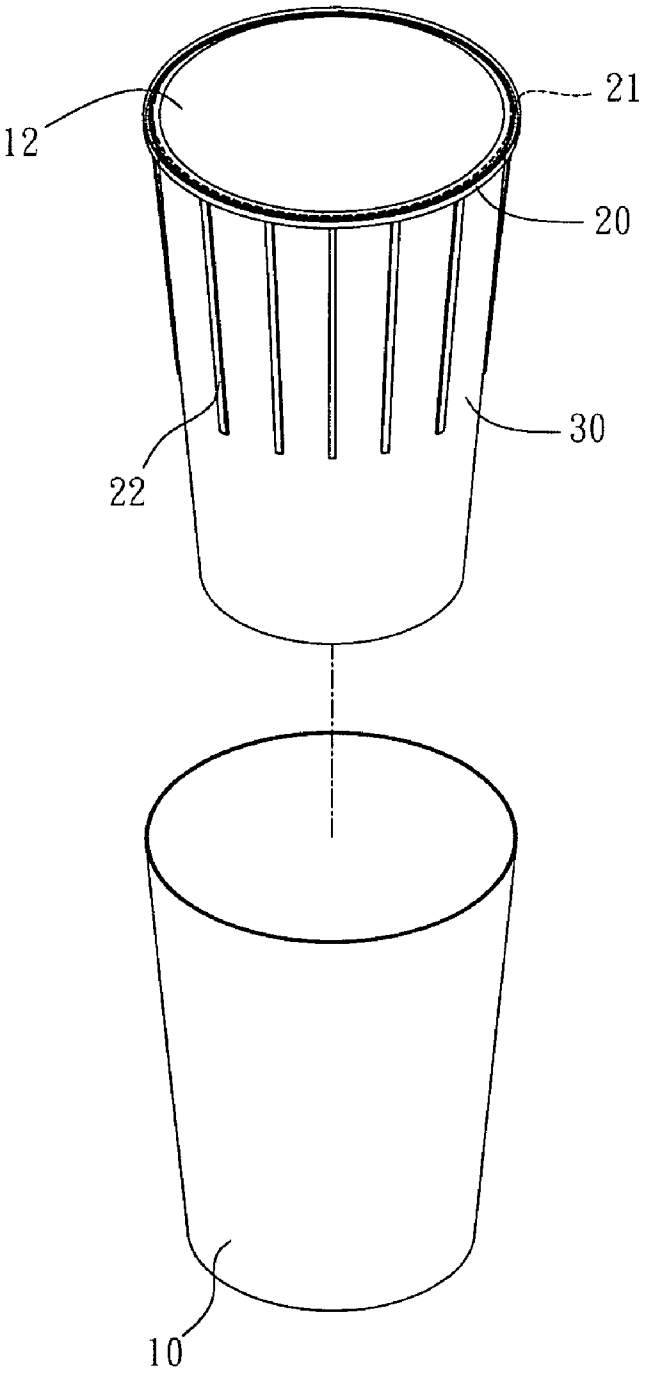



FIG.3

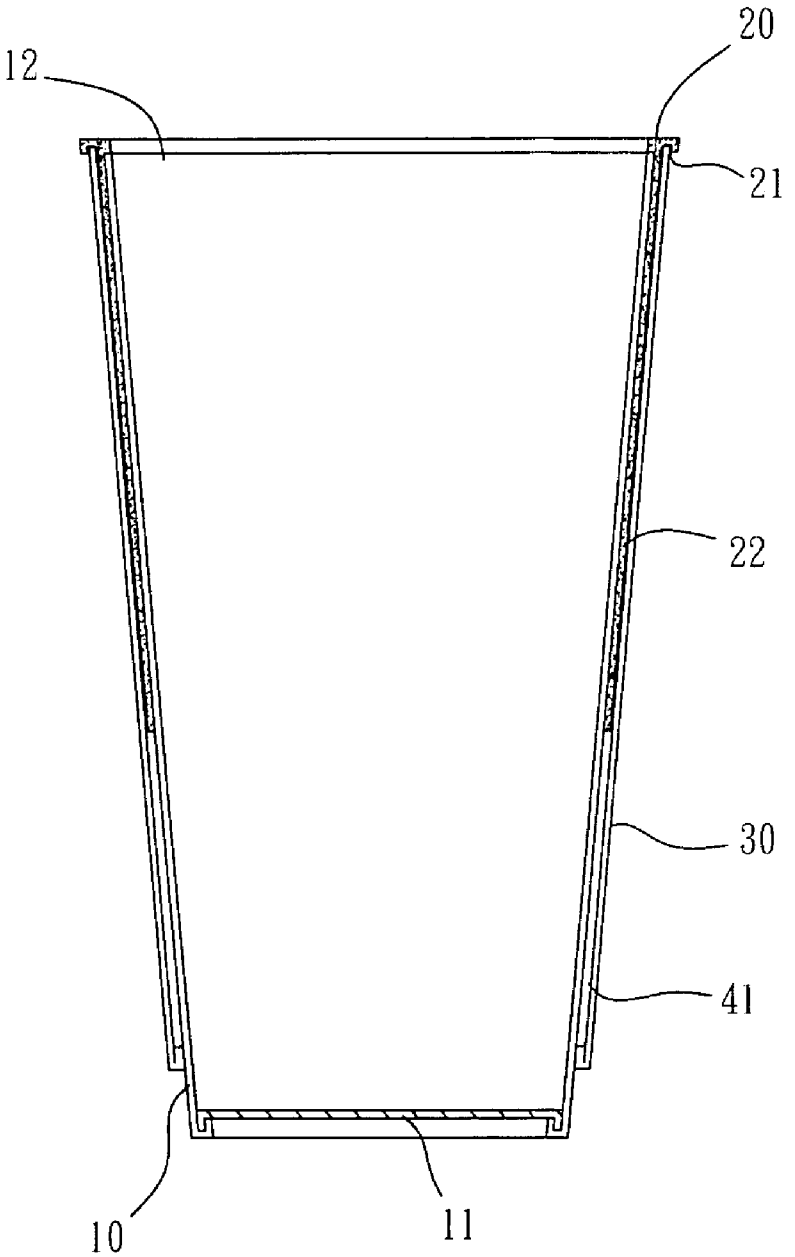



FIG.4

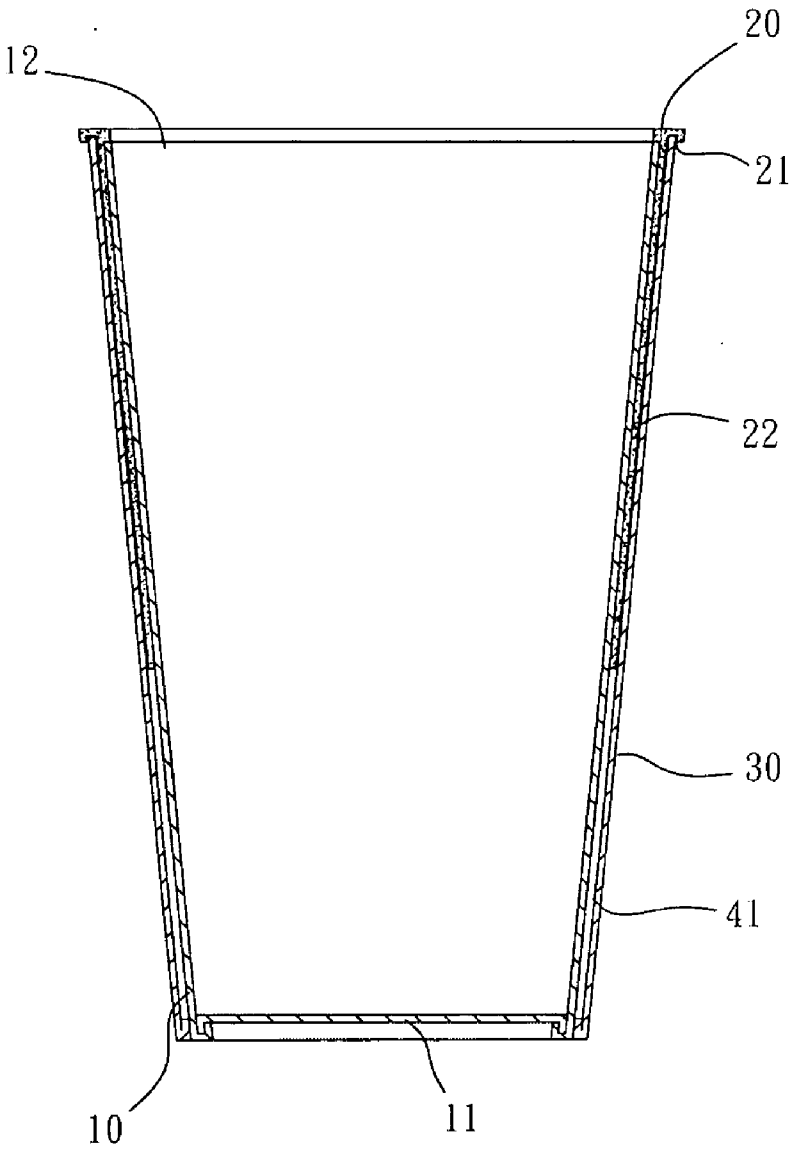



FIG.5

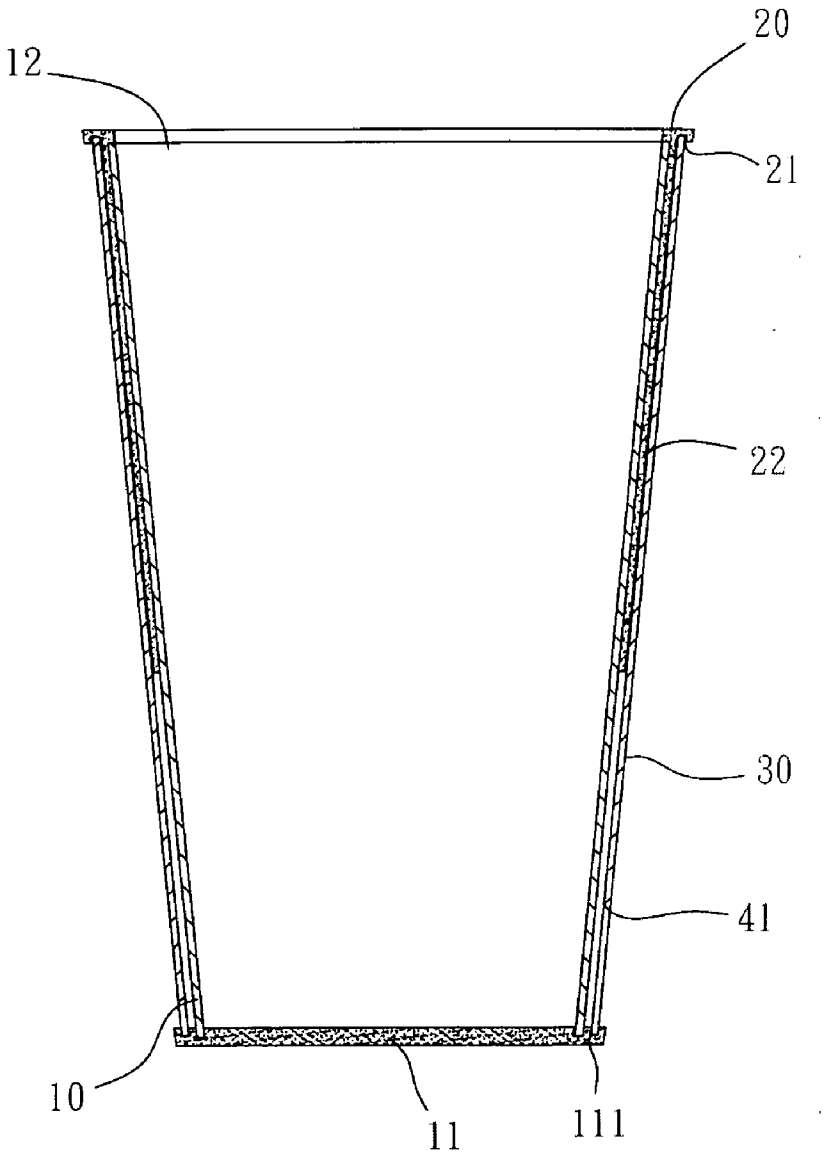



FIG.6

# HEAT ISOLATION COLLAR FOR PAPER CUP

## BACKGROUND OF THE INVENTION

**[0001]** 1. Field of the Invention

**[0002]** The present invention relates to a paper cup assembly, and more particularly, to a paper cup with heat isolation collar mounted thereto.

**[0003]** 2. Background of the Invention

**[0004]** A conventional beverage cup for take-out generally is made by paper which cannot isolation temperature of the beverage so that the user cannot hold the cup because the high temperature transferred to the user's hand. Besides, the beverage soon becomes cold for the same reason and this affects the taste of the beverage. Taiwan Utility Patent No. M379573 discloses a paper cup as shown in FIG. **1** and includes a cup with a bottom piece connected to the underside of the cup, and an isolation piece located on outside of the cup. The isolation piece has a connection portion and an inner layer which folded downward from the connection portion. A space is defined between the outside of the cup and the isolation piece. By the isolation piece, the structural strength of the cup is reinforced and the space cuts off the heat transferring to the user's hand.

**[0005]** It is noted that the conventional isolation piece is connected to the lower edge of the open top of the cup so that the top portion of the isolation piece is almost in contact with the cup. However, when using the beverage in the cup, the users usually hold the top portion of the cup so that the user can feel the high temperature at the top portion of the cup because there is no gap between the cup and the top portion of the isolation piece. Even if there is a gap, when the length of cup is long enough, the isolation piece cannot bear the pressure applied to the isolation piece from the user so that the user still contact the cup and feel the temperature.

**[0006]** The present invention intends to provide a paper cup with an isolation collar which improves the shortcomings of the conventional isolation piece.

## SUMMARY OF THE INVENTION

**[0007]** The present invention relates to a paper cup assembly and comprises a paper cup with a bottom piece connected to the lower end thereof and the cup has an open top. A lip portion made of bio-degradable plastic material is formed along the open top by way of injection molding, heat-pressing or high-frequency wave welding. Multiple protrusions are formed on the outside of the cup when forming the lip portion. The cup has a positioning portion and the isolation collar is mounted to the cup and the top portion of the isolation collar is connected to the positioning portion. The lower portion of the isolation collar is folded inward and fixed to the cup. A gap is defined between the whole isolation collar and the cup. When used to a deep cup, the protrusions are helpful for isolating the heat from the cup.

**[0008]** 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 accordance with the present invention.

## BRIEF DESCRIPTION OF THE DRAWINGS

**[0009]** FIG. **1** is a cross sectional view of the conventional paper cup;

**[0010]** FIG. **2** is a perspective view to show the paper cup assembly of the present invention;

**[0011]** FIG. **3** is an exploded view to show the paper cup assembly of the present invention;

**[0012]** FIG. **4** is a cross sectional view of the paper cup assembly of the present invention;

**[0013]** FIG. **5** is a cross sectional view to show another embodiment of the paper cup assembly of the present invention, and

**[0014]** FIG. **6** shows that the paper cup assembly of the present invention has a plastic bottom piece.

## DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

**[0015]** Referring to FIGS. **2** to **6**, the paper cup assembly of the present invention comprises a paper cup **10** with a lip portion **20**, and an isolation collar **30** which is mounted to the cup **10**.

**[0016]** The cup **10** is made by rolling a piece of paper board and a bottom piece **11** is connected to the lower end thereof and the cup **10** has an open top **12**. The lip portion **20** is formed along the open top **12**.

**[0017]** The lip portion **20** is an annular portion and made of plastic material formed along the open top **12** by way of injection molding, heat-pressing or high-frequency wave welding. The cup **10** has a positioning portion **21** defined in the underside of the lip portion **20**. Multiple protrusions **22** are integrally formed on the outside of the cup **10** when forming the lip portion **20**. The isolation collar **30** is mounted to the cup **10** and a top portion of the isolation collar **30** is connected to the positioning portion **21**. The protrusions **22** are in contact with the isolation collar **30** when a user holds the isolation collar **30**.

**[0018]** The top portion of the isolation collar **30** is engaged with the positioning portion **21** of the lip portion **20** by way of gluing or heat-welding. The lower portion of the isolation collar **30** is folded inward and fixed to the outside of the cup **10** by way of gluing or heat-welding. Therefore, a gap **41** is defined between the outside of the cup **10** and the inside of the isolation collar **30**. As shown in FIGS. **4** and **5**, when fixing the lower portion of the isolation collar **30** to the cup, because the top portion top portion of the isolation collar **30** is engaged with the positioning portion **21** of the lip portion **20**, so that the lower portion of the isolation collar **30** is easily decided to be connected to the position of the cup **10**, either close to the lower end of the cup or in flush with the underside of the cup **10**.

**[0019]** Furthermore, as shown in FIG. **6**, the bottom piece **11** is made by plastic material and integrally formed with the cup by way of injection molding, heat-pressing or high-frequency wave welding. The bottom piece **11** has a positioning groove **111** when the bottom piece **11** is made. The lower portion of the isolation collar **30** is engaged with the positioning groove **111**.

**[0020]** By the top portion of the isolation collar **30** engaged with the positioning portion **21** so that the inside of the isolation collar **30** does not contact the cup to affect the isolation feature. When the isolation collar **30** is used to a deep cup **10**, the protrusions **22** reinforce the structural strength of the isolation collar **30**. The inside of the isolation collar **30** contacts the protrusions **22**, rather than the cup **10**, so as to have better isolation feature.

**[0021]** 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 cup assembly comprising:

a paper cup with a bottom piece connected to a lower end thereof and the cup having an open top, a lip portion made of plastic material formed along the open top, multiple protrusions formed on an outside of the cup when forming the lip portion.

**2**. The assembly as claimed in claim **1**, wherein the cup having a positioning portion defined in an underside of the lip portion, an isolation collar is mounted to the cup and a top portion of the isolation collar is connected to the positioning portion.

**3**. The assembly as claimed in claim **2**, wherein a lower portion of the isolation collar is fixed to the outside of the cup.

**4**. The assembly as claimed in claim **1**, wherein the lip portion is made by way of injection molding.

**5**. The assembly as claimed in claim **1**, wherein the lip portion is made by bio-degradable plastic material.

**6**. The assembly as claimed in claim **1**, wherein the lip portion is made by bio plastic.

**7**. The assembly as claimed in claim **1**, wherein a lower portion of the isolation collar is folded inward so as to be fixed to the outside of the cup.

**8**. The assembly as claimed in claim **1**, wherein the bottom piece is made by plastic material and is integrally formed with the cup by way of injection molding, the bottom piece has a positioning groove and the lower portion of the isolation collar is engaged with the positioning groove.

**9**. The assembly as claimed in claim **8**, wherein the bottom piece is made by bio-degradable plastic material.

**10**. The assembly as claimed in claim **9**, wherein the bottom piece is made by bio plastic.

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