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Amended claims in accordance with Rule 137(2) EPC.

(54) DROP-PROOF AND EASY-TO-DETACH DOUBLE-LAYER BOWL

(57) A drop-proof and easy-to-detach double-layer bowl is provided, which belongs to the field of tableware, and includes an inner bowl. The inner-layer bowl is made of soft glue and the outside thereof is covered with an outer-layer shell. The opening end edge of the inner-layer bowl is bent outward and buckled on the outer-layer shell to fix the outer-layer shell on the inner-layer bowl, and soft glue is used to replace plastic. The food safety level of soft glue is higher than that of plastic, which overcomes the long-term unsafe problem of traditional plastic bowls. The outer layer structure is sleeved on the soft glue, so that the support performance of the soft glue bowl is enhanced to prevent the deformation of the soft glue from causing food in the bowl to spill, and the food safety level of the plastic bowl is improved. The opening end edge of the inner-layer bowl is bent outward and buckled on the outer-layer shell to fix the outer-layer shell on the inner-layer bowl. The outer-layer shell is easy to disassemble and assemble. Especially infants and young children are easy to get food on the side wall or table top of the bowl when using the bowl, the structure of the present disclosure can be disassembled by hand and is convenient for subsequent removal of the outer-layer shell for cleaning.

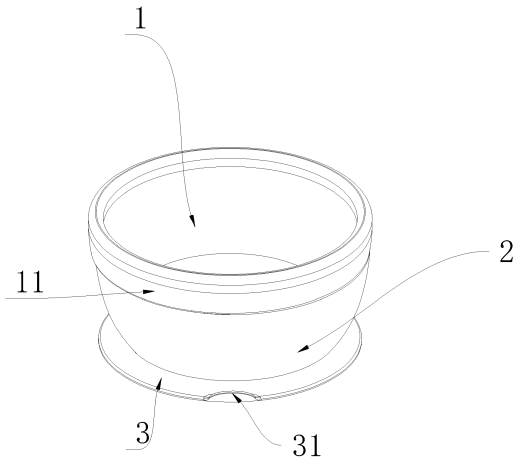

FIG.2

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Description

FIELD OF THE DISCLOSURE

[0001] The present disclosure relates to the field of baby tableware, in particular, to a drop-proof and easy-to-detach double-layer bowl.

BACKGROUND OF THE DISCLOSURE

[0002] At present, the more widely used ceramic tableware is not suitable for children who are learning to eat. It is not only easy to break, but also difficult to clean up, which is particularly dangerous. Therefore, there are stainless steel bowls that are resistant to falling and broken, but pure stainless steel bowls also have certain drawbacks. One is that the bowl is heavy for children, and the other is that the bowl is hot, so there is a shatter-resistant plastic bowl, which is light and heat-insulating. However, the conventional plastic bowl is made of PP or PC, and this kind of material itself is non-toxic, but it will decompose slightly at high temperature. If plastic bowls are used for a long time, there is a safety hazard, especially for colored plastic bowls. The colorant of colored plastic bowls is not resistant to high temperature. In order to increase the fun, baby bowls will be produced with colors. Therefore, there is an urgent need for a baby bowl with high safety performance.

SUMMARY OF THE DISCLOSURE

[0003] In view of the shortcomings in the above-mentioned technology, the present disclosure provides a drop-proof and easy-to-detach double-layer bowl, which includes a soft glue inner layer and a supporting outer layer structure sleeved on the inner layer. The soft glue is used to replace plastic. The food safety level of soft glue is higher than that of plastic, which overcomes the long-term unsafe use of traditional plastic bowls. In addition, the outer layer structure is sleeved on the soft glue, so that the support performance of the soft glue bowl is enhanced to prevent the deformation of the soft glue from causing food in the bowl to spill.

[0004] In order to achieve the aforementioned purpose, a drop-proof and easy-to-detach double-layer bowl is provided, comprising: an inner-layer bowl, wherein the inner-layer bowl is made of soft glue, an outer side of the inner-layer bowl is covered with an outer-layer shell, and an opening end edge of the inner-layer bowl is bent outward and buckled on the outer-layer shell to fix the outer-layer shell on the inner-layer bowl.

[0005] In a specific embodiment, the outer-layer shell is a cylindrical structure with openings at both ends, and the shape is adapted to the inner-layer bowl.

[0006] In a preferred embodiment, an annular groove is provided at the outer side of the inner-layer bowl, and a part of the annular groove adjacent to an opening side of the bowl is bent outward and buckled on the outer-layer shell.

[0007] In a specific embodiment, the outer-layer shell is sleeved between the annular groove and a bottom of the inner-layer bowl.

[0008] In a preferred embodiment, a bottom of the inner-layer bowl is a sucking disc structure.

[0009] In a specific embodiment, the soft glue comprises silicone rubber or soft TPU/TPR.

[0010] In a specific embodiment, the silicone rubber comprises methyl vinyl silicone rubber and methyl phenyl vinyl silicone rubber.

[0011] In a specific embodiment, the outer-layer shell is made of hard plastic, bamboo or stainless steel.

[0012] In a specific embodiment, the inner-layer bowl is a one-piece structure.

[0013] In a specific embodiment, a part of the opening end edge of the inner-layer bowl where is bent outward is a buckle part, and the buckle part is perpendicular to a plane where the bottom of the inner-layer bowl is placed.

[0014] The beneficial effects of the present disclosure are that, compared with the prior art, the present disclosure has the following two main advantages.

1. Soft glue is used to replace plastic, and the food safety level of soft glue is higher than that of plastic, which overcomes the long-term unsafe problem of traditional plastic bowls. In addition, the outer layer structure is sleeved on the soft glue to enhance the support performance of the soft glue bowl and prevent the deformation of the soft glue from causing food in the bowl to spill, so that the food safety level of the plastic bowl is improved.
2. The opening end edge of the inner-layer bowl is bent outward and buckled on the outer-layer shell to fix the outer-layer shell on the inner-layer bowl, so that the outer-layer shell is easy to disassemble and assemble. Especially infants and young children are easy to get food on the side wall or table top of the bowl when using the bowl, the structure of the present disclosure can be disassembled by hand and is convenient for subsequent removal of the outer-layer shell for cleaning.

BRIEF DESCRIPTION OF THE DRAWINGS

[0015]

FIG. 1 is a structural diagram of the inner-layer bowl of the present disclosure.

FIG. 2 is a structural diagram of the inner-layer bowl and outer-layer shell of the present disclosure.

FIG. 3 is a separate structure diagram of the inner-layer bowl and the outer-layer shell of the present disclosure.

[0016] The main reference numerals are explained as follows. 1. inner-layer bowl; 2. outer-layer shell; 11. open-

ing end edge; 12. annular groove; 3. sucking disc; 31. lifting part.

DETAILED DESCRIPTION OF THE EXEMPLARY EMBODIMENTS

[0017] In order to express the present invention more clearly, the present disclosure will be further described below with reference to the accompanying drawings.

[0018] As described in the background art, in order to achieve drop-proof baby bowls, hard plastic bowls are usually used. The existing hard plastic bowls are usually made of PP or PC, which has potential safety hazards when used as a bowl for a long time. The present disclosure provides a drop-proof and easy-to-detach double-layer bowl. Reference is made to FIGS. 1 to 3, the drop-proof and easy-to-detach double-layer bowl includes an inner-layer bowl 1 which is made of soft glue, and an outer side of the inner-layer bowl 1 is covered with an outer-layer shell 2. An opening end edge 11 of the inner-layer bowl 1 is bent outward and buckled on the outer-layer shell 2 to fix the outer-layer shell 2 on the inner-layer bowl 1.

[0019] Plastics are polymer compounds made from monomers as raw materials through addition polymerization or condensation polymerization. There are many types of plastics, which can be roughly divided into seven levels according to food levels.

[0020] The first level includes PET. This type of plastic is usually used to make plastic bottles, beverage bottles or packaging, and is suitable for normal temperature or cold drinks, not suitable for overheated food. If it is overheated, it will release toxic carcinogens, and will automatically release toxic chemicals if used for too long.

[0021] The second level includes PP. PP plastic is often used to make food-specific plastic bags and food plastic boxes. Customary, it is safe and non-toxic, and resistant to low and high temperatures; in addition, it is also the only plastic that can be heated in a microwave oven, and its hardness is relatively large. It is also one of the main materials of current baby bowls, but it will slightly decompose during long-term use, which is not good for health.

[0022] The third level includes HDPE, commonly known as high-density polyethylene, which has high strength and is a non-toxic material. It is often used to make food plastic containers, but it is not easy to clean and not convenient for recycling.

[0023] The fourth level includes LDPE, that is, low-density highpressure polyethylene. It is soft to the touch and is often used in the production of food packaging composite film, cling film, and medicine. If it is used for plastic packaging, it is not heat resistant, and easy to melt.

[0024] The fifth level includes PS, which is used to make fast food boxes and instant noodle boxes. It has good cold resistance, but it is not resistant to high temperatures and is not suitable for acidic food.

[0025] The sixth level includes PC, which can be used to make sports water cups, bottles, etc. When the temperature is high, it will release bisphenol A, which is not suitable for hot water.

[0026] The seventh level is PVC. This plastic is rarely used for food packaging and is likely to produce carcinogenic harmful substances at high temperatures.

[0027] Among them, PP material has become the main material for baby plastic bowls due to its non-toxic, harmless, high temperature resistance and high hardness characteristics. The food safety level of this type of material is already high, and the hardness of the bowl can be directly made. Therefore, it has become the mainstream material of the baby bowl. However, the food safety level is an endless search for people, and the present disclosure uses a material with higher food safety to replace the PP material to further improve the food safety level of the baby bowl.

[0028] In this embodiment, the inner-layer bowl 1 is made of soft glue, which includes silicone rubber. The silicone rubber refers to a rubber whose main chain is alternately composed of silicon and oxygen atoms, and two organic groups are usually connected to the silicon atoms. Ordinary silicone rubber is mainly composed of siloxane chain links containing methyl and a small amount of vinyl. The introduction of phenyl can improve the high and low temperature resistance of silicone rubber. The low temperature resistance of silicone rubber is good, and silicone rubber can generally work at -55°C; after the introduction of phenyl, the low temperature resistance can reach -73 °C . The heat resistance of silicone rubber is also very outstanding. It can work for a long time at 180°C, and can work several weeks or longer when it is slightly higher than 200°C. It can withstand high temperatures above 300°C; while PP plastic can remain stable at 100- 150°C without deformation. In contrast, silicone rubber has stronger heat resistance and higher stability. Both are non-toxic and harmless material, silicone rubber has stronger heat resistance and higher stability, and its food safety level is higher than that of PP plastic.

[0029] In this embodiment, the silicone rubber has low hardness and strong toughness. It can be bent more than 100,000 times. However, the bowl made of pure silicone rubber is too soft and inconvenient to handle. After it is used to hold food, if the bowl is directly held at the edge, because the bowl is too soft, the food will spill out directly from the bowl. In addition, the silicone rubber is easily deformed, and the baby is also likely to spill the food from the bowl during eating. Therefore, the present disclosure provides the outer-layer shell 2 sleeved outside the inner-layer bowl 1, and the outer-layer shell 2 is made of hard materials, which mainly plays a supporting role. In this way, the overall hardness of the baby bowl is increased, and food is not easy to spill out during handling or use. Further, the safety performance of the part in contact with food is improved, and compared with the prior art, while ensuring the quality of the bowl, the present disclosure also improves the food safety level of the bowl.

[0030] In this embodiment, the silicone rubber includes methyl vinyl silicone rubber, methyl phenyl vinyl silicone rubber, etc., but the present disclosure is not limited thereto.

[0031] In this embodiment, the silicone rubber can also be soft TPU/TPR, but the present disclosure is not limited to this. Other materials with high food safety level but low hardness can be applied to the double-layer structure of the present disclosure to optimize the goal of the safety performance of the baby bowl.

[0032] In this embodiment, soft glue can be understood as a material with a high food safety level but a low hardness.

[0033] In this embodiment, the outer-layer shell 2 is made of hard plastic, bamboo or stainless steel, and mainly plays a supporting role, so the food safety level of the outer-layer shell 2 is not high. However, because the user is babies, and babies like to bite other objects, the material of the outer-layer shell 2 should at least meet the basic safety requirements.

[0034] Referring to FIG. 2, the outer-layer shell 2 is sleeved on the outer side of the inner-layer bowl 1, and the opening end edge 11 of the inner-layer bowl 1 is bent outward and buckled on the outer-layer shell 2 to fix the outer-layer shell 2 on the inner-layer bowl 1.

[0035] Specifically, the outer-layer shell 2 is a cylindrical structure with openings at both ends, and the shape is adapted to the inner-layer bowl 1. After the outer-layer shell 2 is sleeved outside the inner-layer bowl 1, the opening end edge 11 of the inner-layer bowl 1 is bent outward and buckled on the outer-layer bowl. The elasticity of the soft glue is used to make the edge of the inner-layer bowl 1 and the outer side of the inner side of the bowl sandwich the outer-layer shell 2. Preferably, the inner diameter of the outer-layer shell 2 is slightly smaller than the inner diameter of the inner-layer bowl 1, so when the outer-layer shell 2 is sleeved on the inner side of the bowl, it receives the squeezing or tension of the inner-layer bowl 1 so that the outer-layer shell 2 tightens the inner-layer bowl 1.

[0036] In this embodiment, this method of fixing the outer-layer shell 2 by bending the edge of the inner-layer bowl 1 is extremely convenient for disassembly without the need for the third connection piece, and the inner-layer bowl 1 and the outer-layer shell 2 are both the indispensable structure for baby bowl. The performance of the two structures is used to realize the cooperation, the structure is ingenious, and the disassembly and assembly are convenient. Especially infants and young children are easy to get food on the side wall or table top of the bowl when using the bowl, the structure of the present disclosure can be disassembled by hand and is convenient for subsequent removal of the outer-layer shell 2 and the inner-layer bowl 1 for cleaning.

[0037] Regarding the disassembly and assembly process, the outer-layer shell 2 is a structure with through holes at both ends, when disassembling, the soft glue buckled on the outer-layer shell 2 is turned over to stand upright, and then the inner-layer bowl 1 is squeezed to deform the inner-layer bowl 1 to make the outer diameter of the inner-layer bowl 1 become smaller than the inner diameter of the outer-layer shell 2, and finally the inner-layer layer bowl 1 can be taken out. When assembling, the inner-layer layer bowl 1 is first squeezed to deform the inner-layer layer bowl 1 to make the outer diameter of the inner-layer bowl 1 become smaller than the inner diameter of the outer-layer shell 2, and the outer-layer shell 2 is sleeved on the the inner-layer bowl 1, and finally the edge of the inner-layer bowl 1 is turned over, so that the opening end edge of the inner-layer bowl 1 is buckled on the outer-layer bowl.

[0038] In a preferred embodiment, an annular groove 12 is provided on the outer side of the inner-layer bowl 1, and the part of the annular groove 12 adjacent to the opening side of the bowl is a buckle part, which is bent outward to buckle on the outer-layer shell 2, and the outer-layer shell 2 is sleeved between the annular groove 12 and the bottom of the inner-layer bowl 1. The design of the annular groove 12 has two effects. The first is to reduce the length of the buckle part because the length of the bent part cannot be too short. If it is too short, the state of the bent part buckling the outer-layer shell 2 cannot be maintained, and it will return to the original upright shape due to the elastic restoring force of the bending position. In addition, because the thickness of the annular groove 12 is smaller than the thickness of the inner-layer bowl 1, during the bending process, when the annular groove 12 is bent, the elastic restoring force generated after the thickness is reduced is reduced. Therefore, when the length of the buckling part is relatively short, it can be realized that the original upright state is not restored after bending. The second is that after the annular groove 12 is bent, the groove fits into the side wall of the outer-layer shell 2 to make the connection between the outer-layer shell 2 and the inner-layer bowl 1 closer.

[0039] In a preferred embodiment, the buckle part is perpendicular to the plane where the bottom of the inner-layer bowl 1 is placed. The outer surface of the inner-layer bowl 1 is a curved surface extending from the bottom of the bowl to the upper end of the bowl in space, and the cut surface of the curved surface is the same as the bottom of the bowl when the bowl is placed. The angle of the plane gradually increases from less than 90 degrees. When the buckle part is perpendicular to the plane where the bottom of the inner-layer bowl 1 is placed, that is, when the cut surface of the buckle part is perpendicular to the plane where the bottom of the inner bowl 1 is placed, the elastic restoring force generated by the buckle part after the buckle part is turned over is the smallest.

[0040] In a preferred embodiment, the bottom of the inner-layer bowl has a sucking disc 3 structure. The sucking disc 3 is used to fix the bowl on the desktop to further prevent the baby from overturning the bowl. The preferred sucking disc 3 has an area larger than the opening area of the bowl, which not only improves the adsorption force, but also increases the torque required for overturn-

ing the bowl. The preferred sucking disc 3 is also provided with a lifting part 31 to facilitate the removal of the inner-layer bowl 1 from the desktop.

[0041] In a specific embodiment, the inner-layer bowl 1 is an integral structure, and is integrally formed after opening the mold.

[0042] The advantages of the present disclosure are as follows.

1. Soft glue is used to replace plastic. The food safety level of soft glue is higher than that of plastic, which overcomes the long-term unsafe problem of traditional plastic bowls. Besides, the outer layer structure is sleeved on the soft glue, so that the support performance of the soft glue bowl is enhanced to prevent the deformation of the soft glue from causing food in the bowl to spill, and the food safety level of the plastic bowl is improved.
2. The opening end edge of the inner-layer bowl is bent outward and buckled on the outer-layer shell to fix the outer-layer shell on the inner-layer bowl, so that the outer-layer shell is easy to disassemble and assemble. Especially infants and young children are easy to get food on the side wall or table top of the bowl when using the bowl, the structure of the present disclosure can be disassembled by hand and is convenient for subsequent removal of the outer-layer shell for cleaning.
3. The bottom of the inner-layer bowl is a sucking disc structure, and the sucking disc is used to fix the bowl on the desktop to further prevent the baby from overturning the bowl.

[0043] What have been disclosed above are only a few specific embodiments of the present disclosure, but the present disclosure is not limited thereto, and any changes that can be thought of by those skilled in the art should fall into the protection scope of the present disclosure.

Claims

1. A drop-proof and easy-to-detach double-layer bowl, comprising: an inner-layer bowl, wherein the inner-layer bowl is made of soft glue, an outer side of the inner-layer bowl is covered with an outer-layer shell, and an opening end edge of the inner-layer bowl is bent outward and buckled on the outer-layer shell to fix the outer-layer shell on the inner-layer bowl.

2. The drop-proof and easy-to-detach double-layer bowl according to claim 1, wherein the outer-layer shell is a cylindrical structure with openings at both ends, and the shape is adapted to the inner-layer bowl.

3. The drop-proof and easy-to-detach double-layer bowl according to claim 1, wherein an annular groove is provided at the outer side of the inner-layer bowl, and a part of the annular groove adjacent to an opening side of the bowl is bent outward and buckled on the outer-layer shell.

4. The drop-proof and easy-to-detach double-layer bowl according to claim 3, wherein the outer-layer shell is sleeved between the annular groove and a bottom of the inner-layer bowl.

5. The drop-proof and easy-to-detach double-layer bowl according to claim 1, wherein a bottom of the inner-layer bowl is a sucking disc structure.

6. The drop-proof and easy-to-detach double-layer bowl according to claim 1, wherein the soft glue comprises silicone rubber or soft TPU/TPR.

7. The drop-proof and easy-to-detach double-layer bowl according to claim 1, wherein the silicone rubber comprises methyl vinyl silicone rubber and methyl phenyl vinyl silicone rubber.

8. The drop-proof and easy-to-detach double-layer bowl according to claim 1, wherein the outer-layer shell is made of hard plastic, bamboo or stainless steel.

9. The drop-proof and easy-to-detach double-layer bowl according to claim 1, wherein the inner-layer bowl is a one-piece structure.

10. The drop-proof and easy-to-detach double-layer bowl according to claim 1, wherein a part of the opening end edge of the inner-layer bowl where is bent outward is a buckle part, and the buckle part is perpendicular to a plane where the bottom of the inner-layer bowl is placed.

Amended claims in accordance with Rule 137(2) EPC.

1. A drop-proof and easy-to-detach double-layer bowl, comprising: an inner-layer bowl (1), wherein the inner-layer bowl (1) is made of soft rubber, an outer side of the inner-layer bowl (1) is covered with an outer-layer shell (2), and an opening end edge (11) of the inner-layer bowl (1) is bent outward and buckled on the outer-layer shell (2) to fix the outer-layer shell (2) on the inner-layer bowl (1);
characterized in that the outer-layer shell (2) is a cylindrical structure with openings at both ends, and the shape is adapted to the inner-layer bowl (1).

2. The drop-proof and easy-to-detach double-layer bowl according to claim 1, wherein an annular groove (12) is provided at the outer side of the inner-layer bowl (1), and a part of the annular groove (12) adjacent to an opening side of the bowl is bent outward

and buckled on the outer-layer shell (2).

3. The drop-proof and easy-to-detach double-layer bowl according to claim 2, wherein the outer-layer shell (2) is sleeved between the annular groove (12) and a bottom of the inner-layer bowl (1).

4. The drop-proof and easy-to-detach double-layer bowl according to claim 1, wherein a bottom of the inner-layer bowl (1) is a sucking disc (3) structure.

5. The drop-proof and easy-to-detach double-layer bowl according to claim 1, wherein the soft rubber comprises silicone rubber or soft TPU/TPR.

6. The drop-proof and easy-to-detach double-layer bowl according to claim 1, wherein the silicone rubber comprises methyl vinyl silicone rubber and methyl phenyl vinyl silicone rubber.

7. The drop-proof and easy-to-detach double-layer bowl according to claim 1, wherein the outer-layer shell (2) is made of hard plastic, bamboo or stainless steel.

8. The drop-proof and easy-to-detach double-layer bowl according to claim 1, wherein the inner-layer bowl (1) is a one-piece structure.

9. The drop-proof and easy-to-detach double-layer bowl according to claim 1, wherein a part of the opening end edge (11) of the inner-layer bowl (1) where is bent outward is a buckle part, and the buckle part is perpendicular to a plane where the bottom of the inner-layer bowl (1) is placed.

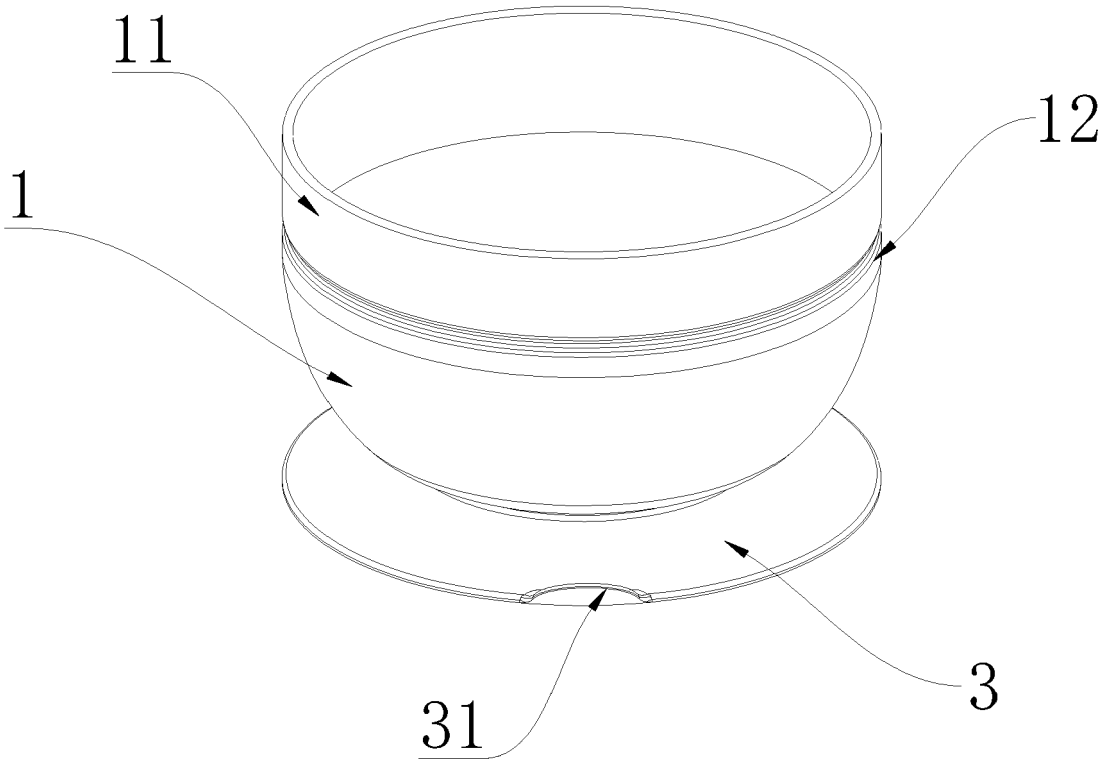

FIG.1

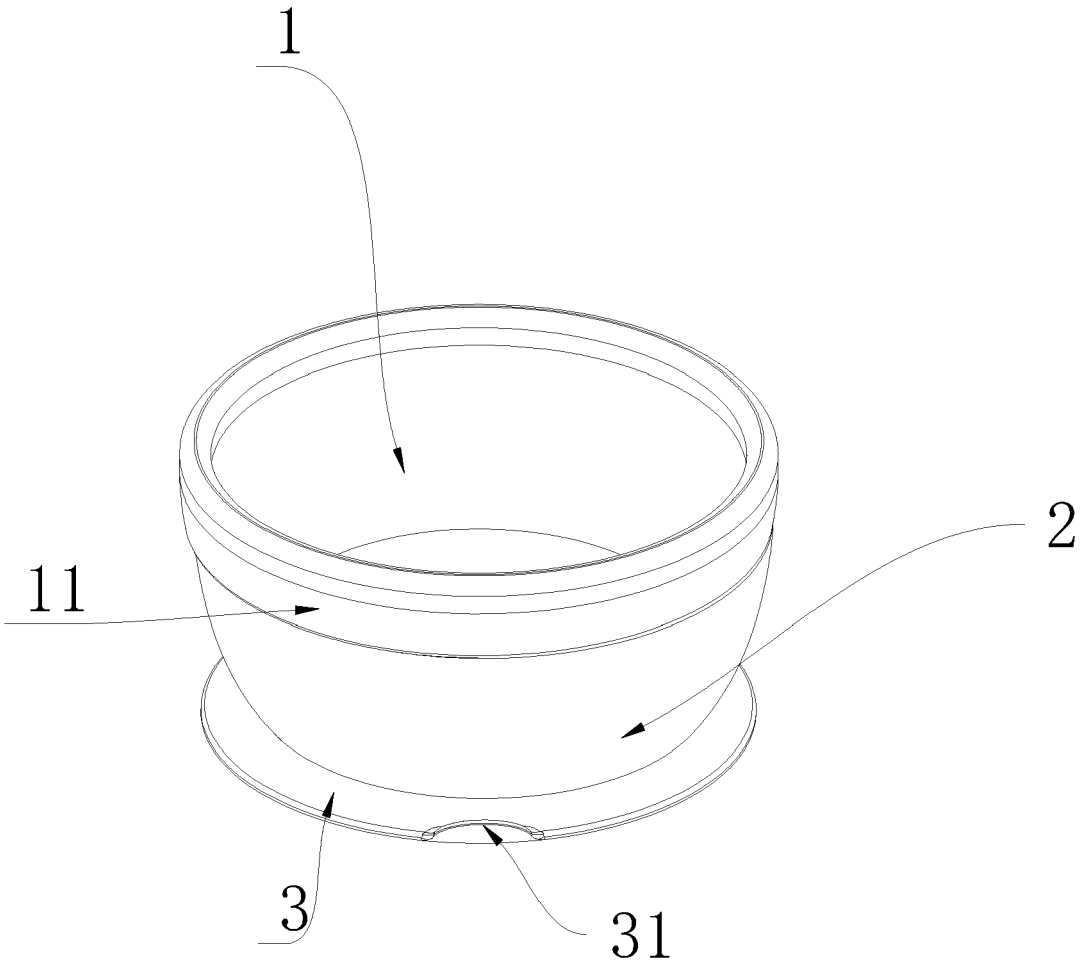

FIG.2

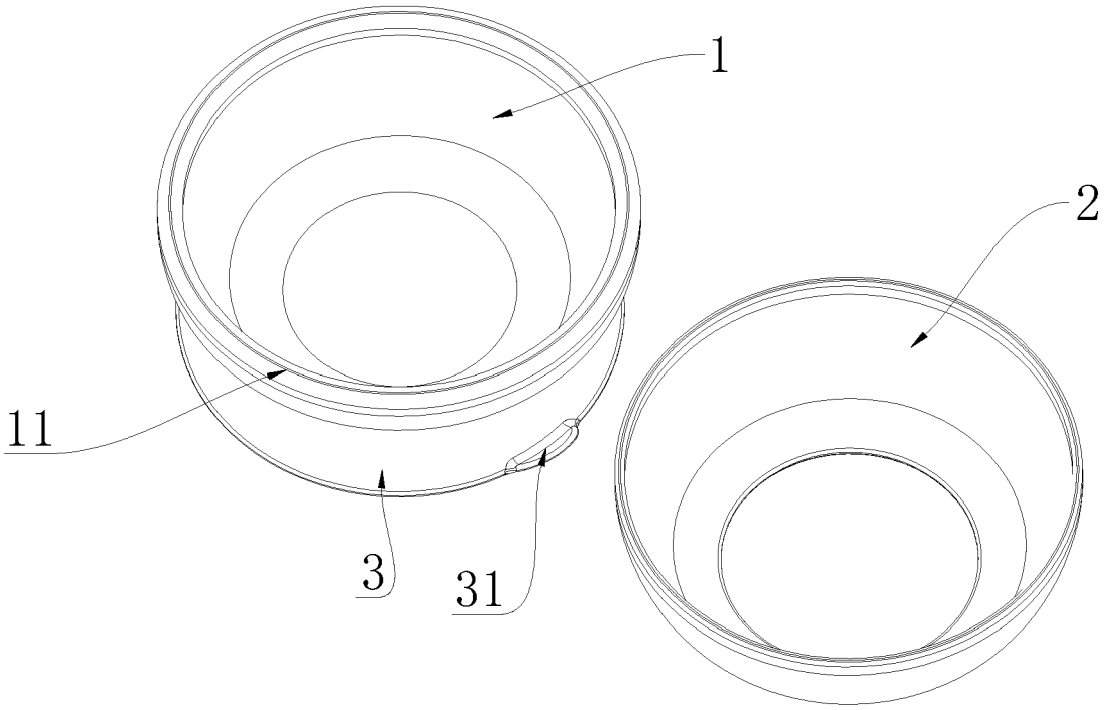

FIG.3

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EUROPEAN SEARCH REPORT

Application Number
EP 20 19 6910

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X Y	US 2019/039812 A1 (KHOMENKO ANTON [US] ET AL) 7 February 2019 (2019-02-07) * paragraphs [0017], [0018], [0056] - [0058]; figures 10-12 *	1-4,6-10 5	INV. A47G19/02 A47G19/10
Y	CN 209 436 790 U (ALEMI MOTHER AND BABY PRODUCTS ZHONGSHAN CO LTD) 27 September 2019 (2019-09-27) * abstract; figure 1 *	5	
X	WO 2016/090162 A1 (HOLLIS JOHN REY [US]; HOLLIS CHRISTINE ANN [US]; CARR ROGER G [US]) 9 June 2016 (2016-06-09) * paragraphs [0056] - [0059]; claims; figures *	1	

TECHNICAL FIELDS SEARCHED (IPC)

A47G

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	22 February 2021	Zattoni, Federico

CATEGORY OF CITED DOCUMENTS

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22-02-2021

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2019039812 A1	07-02-2019	NONE	
CN 209436790 U	27-09-2019	NONE	
WO 2016090162 A1	09-06-2016	US 2016159518 A1	09-06-2016
		WO 2016090162 A1	09-06-2016

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82