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(54) **FOOD CONTAINER**

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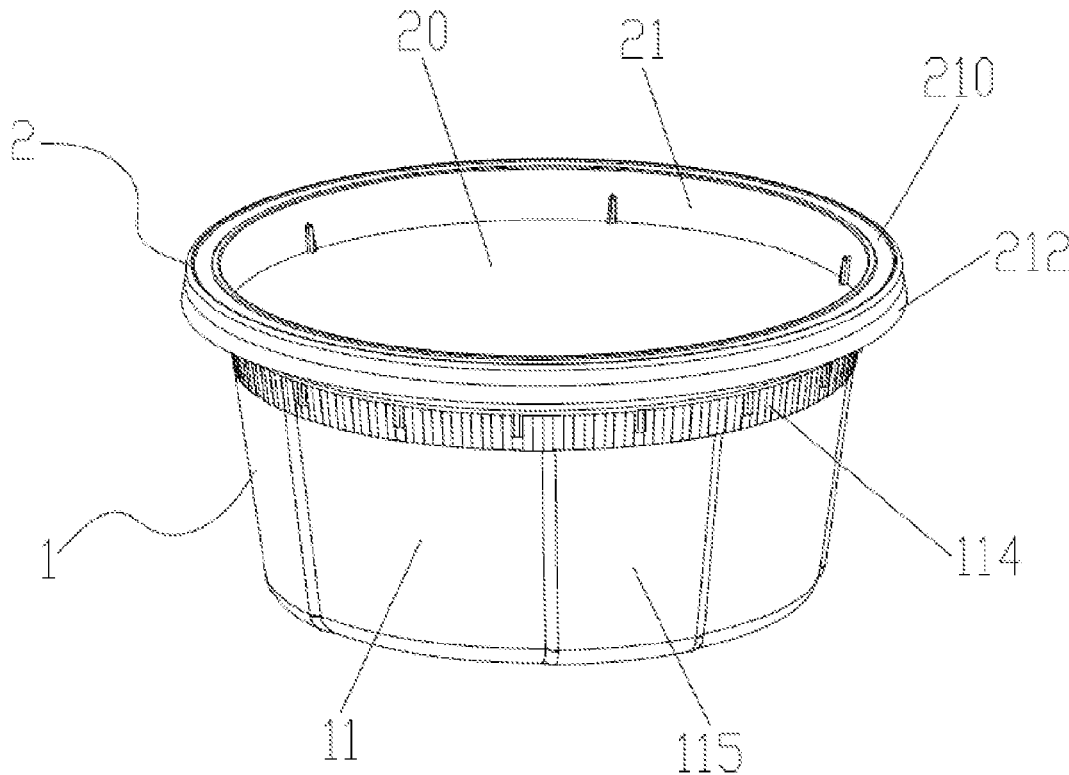
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(57)

ABSTRACT

Provided is a food container which includes a box body with an opening and a box cover; the box body includes a box bottom and a box wall; a top edge of the box wall extends toward the outer side of the box body to form a first connecting strip; the first connecting strip is provided with a groove in the middle; the box cover includes a cover plate and a side wall; a top edge of the side wall extends toward the outer side of the box cover to form a second connecting strip; the middle of the second connecting strip protrudes to form a convex rib; when the box cover covers the opening of the box body, the convex rib of the box cover is embedded into the groove of the box body to form a seal structure. The food container is good at sealing performance.



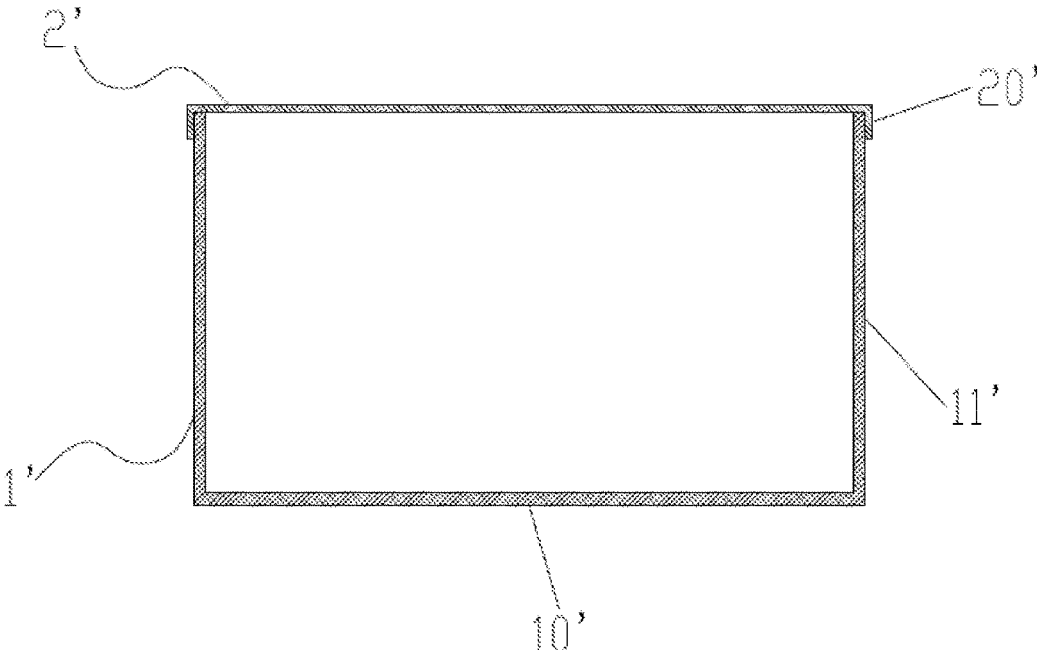


Fig.1

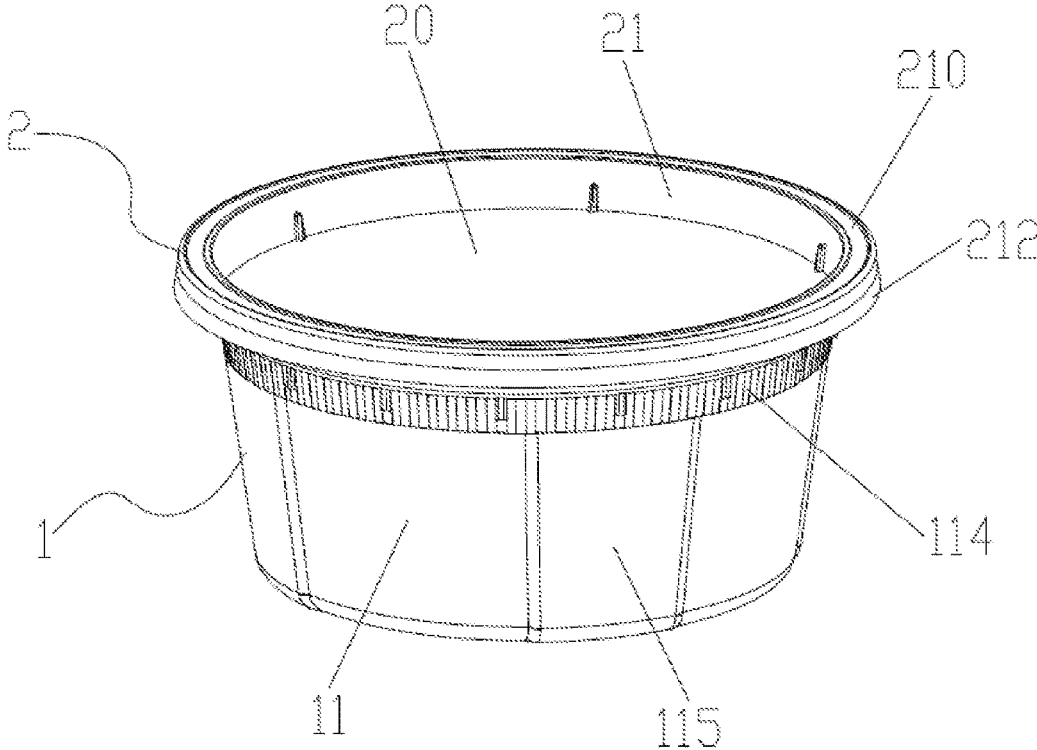


Fig.2

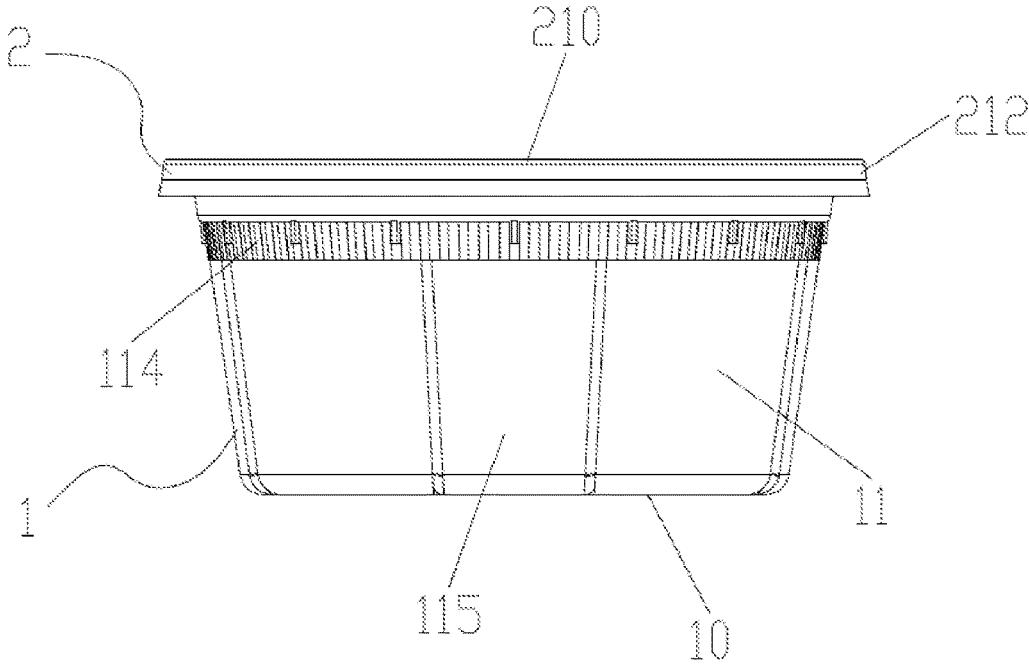


Fig.3

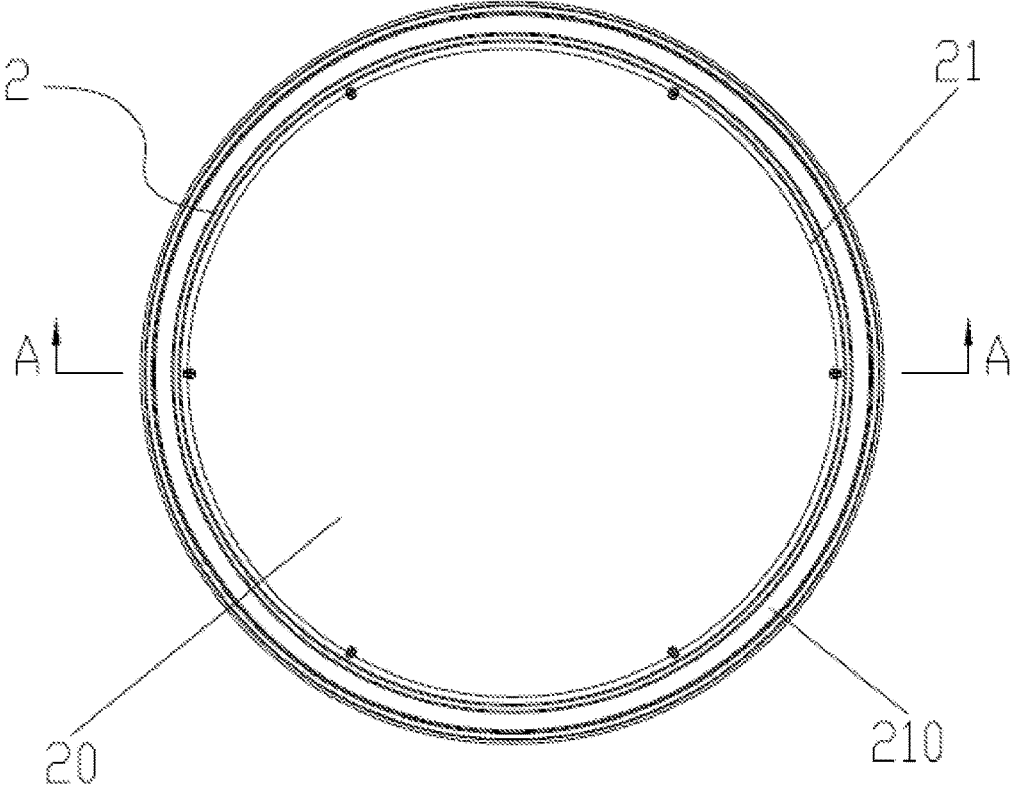


Fig.4

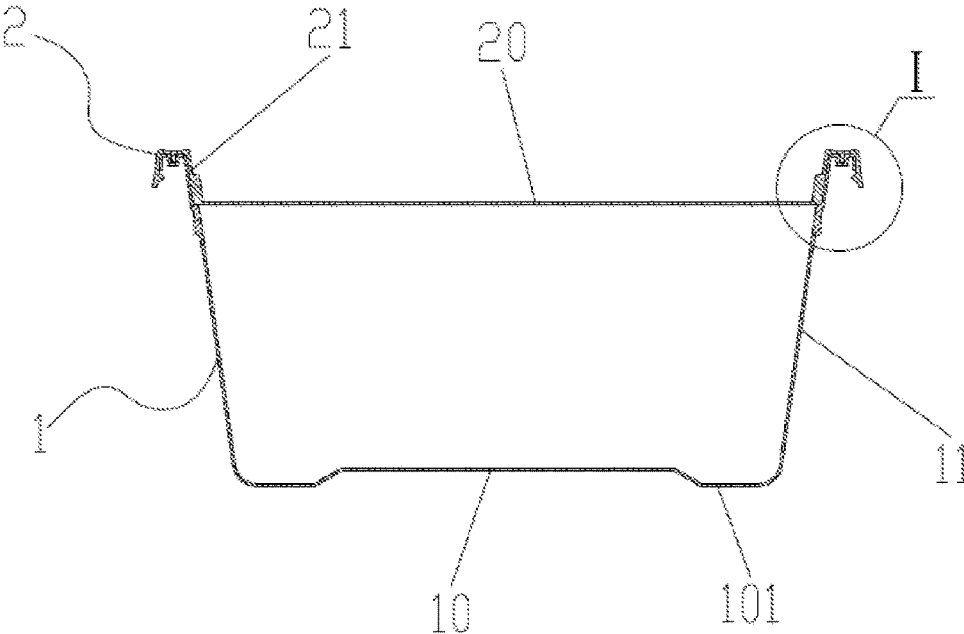


Fig.5

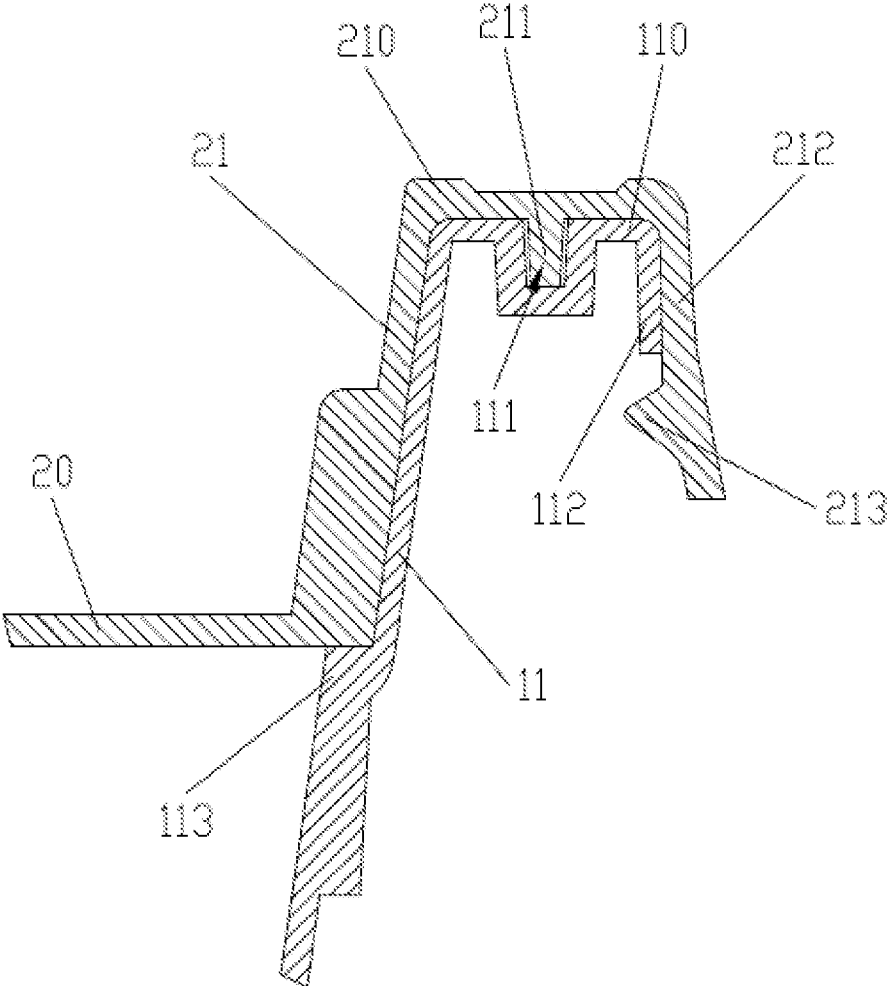


Fig.6

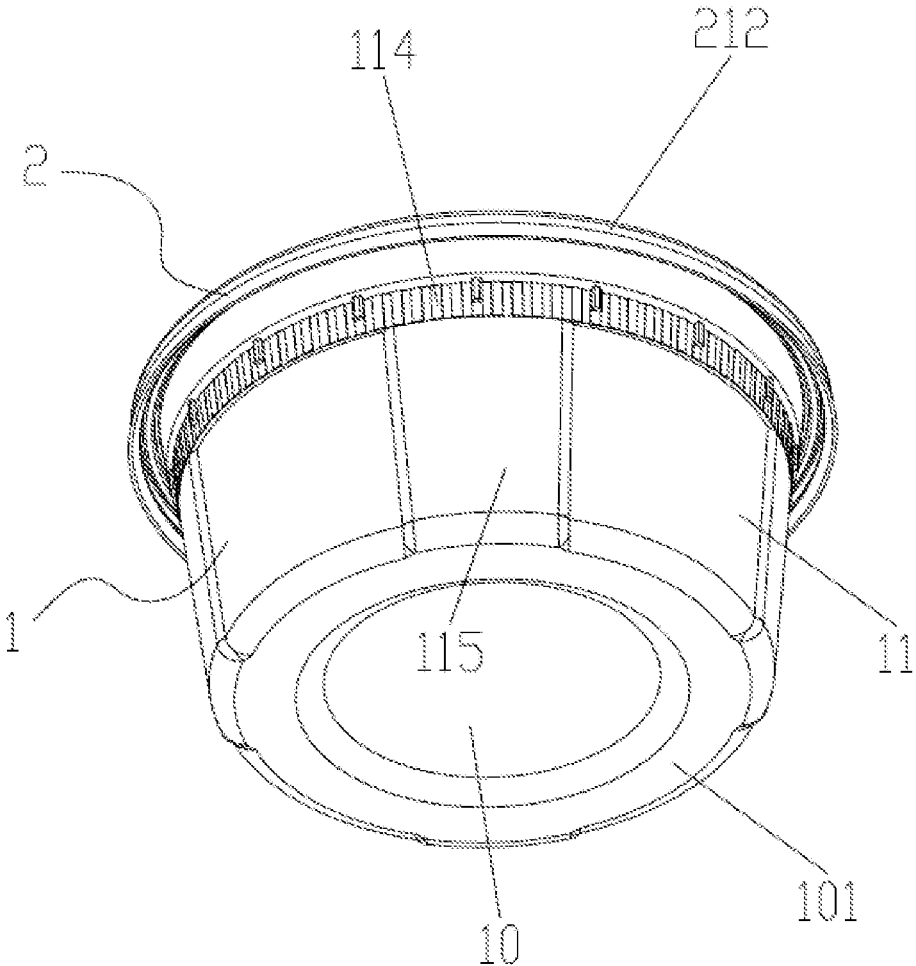


Fig.7

FOOD CONTAINER

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application claims priority to Chinese Application No. CN 201820515911.1 having a filing date of Apr. 12, 2018, the entire contents of which are hereby incorporated by reference.

FIELD OF TECHNOLOGY

[0002] The following relates to the technical field of articles for daily use, in particular to a food container.

BACKGROUND

[0003] Food containers are utensils commonly used in people's daily life. Referring to FIG. 1, which is a side sectional view of an existing food container, the existing food container includes a box body 1' with an opening and a box cover 2', wherein the box cover 2' detachably covers the opening of the box body 1'; the box body 1' includes a box bottom 10' and a box wall 11' extending upward along the periphery of the box bottom 10'; and the box cover 2' is of a plate-like structure and has an edge bent to form a bent portion 20'. When the box cover 2' covers the opening of the box body 1', the inner side of the bent portion 20' of the box cover 2' is fitted to and sealed against the outer side of the top of the box wall 11' of the box body 1' to achieve the purpose of storing food within the box body 1'.

[0004] However, due to the very simple structure, the existing food container is poor in sealing performance, and the box body 1' and the box cover 2' are liable to separation from each other such that food leakage occurs or external air, moisture, microorganisms or the like enters the food container and contaminates the food, thus affecting the quality of the food and shorting the shelf life of the food.

SUMMARY

[0005] An aspect relates to a food container with the advantages of having good sealing performance and a simple structure, and being space-saving and convenient to hold, and a plurality of food containers can be stacked together.

[0006] A technical solution adopted in embodiments of the present invention is as follows:

[0007] A food container includes a box body with an opening and a box cover, wherein the box cover detachably covers the opening of the box body; the box body includes a box bottom and a box wall extending upward along the periphery of the box bottom; a top edge of the box wall extends toward the outer side of the box body to form a first connecting strip; the first connecting strip is provided with a groove in the middle, the opening direction of the groove being same as that of the box body, and the groove encircling the box body to form a closed ring; the box cover includes a cover plate and a side wall extending upward along the periphery of the cover plate; a top edge of the side wall extends toward the outer side of the box cover to form a second connecting strip; the middle of the second connecting strip protrudes toward the direction of the cover plate to form a convex rib; when the box cover covers the opening of the box body, the outer surface of the side wall of the box cover is fitted to the inner surface of the box wall of the box

body, the convex rib of the box cover is embedded into the groove of the box body to form a seal structure.

[0008] In embodiments of the present invention, fitting between the box wall of the box body and the side wall of the box cover and fitting between the groove of the box body and the convex rib of the box cover achieve a good sealing effect, and firm joining of the first connecting strip and the second connecting strip achieves close fitting between the box cover and the box body and improves the sealing performance of the food container. Second, the box cover is composed of the cover plate and the side wall and has the accommodating space therein available for stacking other food container or article, thus achieving a space saving effect. Furthermore, when the box cover needs to be lifted, the user can pull out the edge of the box cover using his thumb, and at the same time fix the side wall of the box cover using other fingers, thereby easily removing the box cover; with the side wall of the box cover as a force receiving surface, the operation difficulty of opening the food container can be reduced; and when the user grasps the food container, his thumb can clasp the side wall of the box cover to improve the holding stability and prevent food spilling due to slip of the hand.

[0009] Compared with the known art, the food container of embodiments of the present invention has the advantages of having good sealing performance, humanized design and a simple structure, and being space-saving, convenient to hold, highly practical and easy to manufacture, and a plurality of food containers can be stacked together; and the food container can be used as a lunch box, a liquid containing cup or the like.

[0010] Further, an edge of the first connecting strip is bent toward the direction of the box bottom to form a first bent portion, and an edge of the second connecting strip is bent toward the direction of the cover plate to form a second bent portion; and when the box cover covers the opening of the box body, the first bent portion is fitted to and sealed against the second bent portion, so that the sealing performance of the food container can be further enhanced and a multi-sealing effect is achieved.

[0011] Further, the width of the second bent portion is greater than that of the first bent portion; the inner side of an edge of the second bent portion bulges to form a lock protrusion; and the lock protrusion extends to an edge of the second bent portion.

[0012] With the lock protrusion, the position of the first bent portion can be limited to prevent the first bent portion from separating from the second bent portion and further improve the sealing performance of the food container; furthermore, the lock protrusion can serve as a force applying point for removing the box cover, and the user can open the food container by pulling out the lock protrusion, thus reducing the operation difficulty.

[0013] Further, the inner surface of the box wall is provided with a supporting step bulging from the inner surface; the upper surface of the supporting step is parallel to the box bottom, and the distance between the upper surface of the supporting step and the top of the box wall is equal to the height of the outer surface of the side wall of the box cover to support the cover plate of the box cover.

[0014] The supporting step can function to support the cover plate of the box cover to improve the load bearing

capability of the box cover, which is conducive to stacking more food containers or articles on the box cover to achieve the space saving purpose.

[0015] Further, the outer diameter of the bottom of the box wall is smaller than or equal to the inner diameter of the bottom of the side wall of the box cover, so that the inner space of the box cover can accommodate the bottom of the box wall, and when a plurality of food containers with food contained therein are stacked together, as the side wall retains the bottom of the box wall, the overall stability of stacking the food container can be improved, and the number of stacked food containers can be increased, thus saving space and facilitating transport.

[0016] Further, the groove is formed by bending the first connecting strip, and thus the first connecting strip is somewhat elastic, such that the first bent portion is more closely fitted to the second bent portion, and the outer surface of the side wall of the box cover is more closely fitted to the inner surface of the box wall of the box body, which is conducive to improving the sealing performance.

[0017] Further, a plurality of reinforcing vertical ribs are arranged on the outer surface of the box wall to improve the mechanical strength.

[0018] Further, the plurality of reinforcing vertical ribs are uniformly arranged at intervals in a top area of the outer surface of the box wall, and the length of each reinforcing vertical rib is not greater than one fourth the height of the box body.

[0019] Generally, the top of the box wall is mostly liable to deformation under heat to result in leakage of high-temperature liquid, so providing the reinforcing vertical ribs in this area can maximally reduce the possibility of leakage and improve the safety; and when the length of each reinforcing vertical rib is not greater than one fourth the height of the box body, the effect of improving the mechanical strength can be achieved and unnecessary material cost can be reduced.

[0020] Further, a central part of the outer surface of the box bottom is recessed toward the direction of an accommodating space of the box body to form a convex ring at a peripheral edge of the outer surface of the box bottom, thus facilitating grasping it by a finger, improving the holding stability and avoiding a food spilling accident.

[0021] Further, the outer surface of the box wall is provided with at least one anti-slip protrusion, so that the stability of grasping with a hand can be effectively improved.

[0022] For the sake of better understanding and implementation, embodiments of the present invention is described in detail below in conjunction with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0023] Some of the embodiments will be described in detail, with reference to the following figures, wherein like designations denote like members, wherein:

[0024] FIG. 1 is a side sectional view of an existing food container;

[0025] FIG. 2 is a structure diagram of a food container of embodiments of the present invention;

[0026] FIG. 3 is a front view of the food container of embodiments of the present invention;

[0027] FIG. 4 is a top view of the food container of embodiments of the present invention;

[0028] FIG. 5 is a sectional view in a direction A-A of FIG. 4;

[0029] FIG. 6 is an enlarged view of a part I in FIG. 5; and

[0030] FIG. 7 is a bottom diagram of the food container of embodiments of the present invention.

DETAILED DESCRIPTION

[0031] Please refer to FIGS. 2-7 at the same time, wherein FIG. 2 is a structure diagram of a food container of embodiments of the present invention; FIG. 3 is a front view of the food container of embodiments of the present invention; FIG. 4 is a top view of the food container of embodiments of the present invention; FIG. 5 is a sectional view in a direction A-A of FIG. 4; FIG. 6 is an enlarged view of a part I in FIG. 5; and FIG. 7 is a bottom diagram of the food container of embodiments of the present invention.

[0032] The food container of embodiments of the present invention includes a box body 1 with an opening and a box cover 2, wherein the box cover 2 detachably covers the opening of the box body 1. The box body 1 includes a box bottom 10 and a box wall 11 extending upward along the periphery of the box bottom 10. The box cover 2 includes a cover plate 20 and a side wall 21 extending upward along the periphery of the cover plate 20, the outer surface of the side wall 21 and the inner surface of the box wall 11 being form fitted. Preferably, the height of the box cover 2 is not greater than one fifth that of the box body 1, to ensure a sufficient volume within the box body 1 for containing food.

[0033] As shown in FIGS. 5 and 6, a top edge of the box wall 11 extends toward the outer side of the box body 1 to form a first connecting strip 110; in this embodiment, preferably, the top edge of the box wall 11 extends horizontally toward the outer side of the box body 1 to form the first connecting strip 110. The first connecting strip 110 is provided with a groove 111 in the middle, the opening direction of the groove 111 being same as that of the box body 1, and the groove 111 encircling the box body 1 to form a closed ring. Preferably, the groove 111 is formed by bending the first connecting strip 110. An edge of the first connecting strip 110 is bent toward the direction of the box bottom 10 to form a first bent portion 112. The bent part of the first bent portion 112 is arc-shaped to avoid injuring a user's hand due to its excessive sharpness.

[0034] The inner surface of the box wall 11 is provided with a supporting step 113 bulging from the inner surface. The upper surface of the supporting step 113 is parallel to the box bottom 10, and the distance between the upper surface of the supporting step and the top of the box wall 11 is equal to the height of the outer surface of the side wall 21 of the box cover 2 to support the cover plate 20 of the box cover 2. There are various forms of the supporting step 113. For example, there are two supporting steps 113, and the two supporting steps 113 are arranged at two sides of the box bottom 10 respectively and can provide two-point support for the outer surface of the cover plate 20; as another example, there are more than two supporting steps 113, and the plurality supporting step 113 are arranged at intervals around the box bottom 10 and can provide multi-point support for the outer surface of the cover plate 20; as a further example, the supporting step 113 forms a closed ring around the inner surface of the box body 1, with an opening thus formed being smaller than the size of the cover plate 20, and can support a peripheral edge of the outer surface of the cover plate 20.

[0035] A plurality of reinforcing vertical ribs **114** are arranged in a top area of the outer surface of the box wall **11**, the plurality of reinforcing vertical ribs **114** being distributed uniformly at intervals, and the length of each reinforcing vertical rib **114** being not greater than one fourth the height of the box body **1**. The outer surface of the box wall **11** is also provided with at least one anti-slip protrusion **115**.

[0036] As shown in FIGS. **5** and **7**, a central part of the outer surface of the box bottom **10** is recessed toward the direction of an accommodating space of the box body **1** to form a convex ring **101** at a peripheral edge of the outer surface of the box bottom **10**, the width of the convex ring **101** being 5-300 mm to facilitate the user holding it with a finger.

[0037] As shown in FIGS. **5** and **6**, a top edge of the side wall **21** extends toward the outer side of the box cover **2** to form a second connecting strip **210**; in this embodiment, preferably, the top edge of the side wall **21** extends horizontally toward the outer side of the box cover **21** to form the second connecting strip **210**. The middle of the second connecting strip **210** protrudes toward the direction of the cover plate **20** to form a convex rib **211**. An edge of the second connecting strip **210** is bent toward the direction of the cover plate **20** to form a second bent portion **212**, the second bent portion **212** and the first bent portion **112** being formed fitted, and the width of the second bent portion being greater than that of the first bent portion **112** and smaller than the height of the side wall **21**. The inner side of an edge of the second bent portion **212** bulges to form a lock protrusion **213**, the lock protrusion **213** extending to an edge of the second bent portion **212** and having two inclined surfaces which are oblique toward the cover plate **20** and toward the outer side of the cover plate **20** respectively, with an arc transition formed between the two inclined surfaces to avoid injuring the user's hand due to its excessive sharpness.

[0038] When the box cover **2** covers the opening of the box body **1**, the outer surface of the side wall **21** of the box cover **2** is fitted to the inner surface of the box wall **11** of the box body **1**, the convex rib **211** of the box cover **2** is embedded into the groove **111** of the box body **1** to form a seal structure, and the first bent portion **112** is fitted to and sealed against the second bent portion **212**.

[0039] The box wall **11** is oblique toward the outer side of the box bottom **10**, and thus the inner diameter of the box wall **11** gradually increases from the periphery of the box bottom **10** to the first connecting strip **110**. The side wall **21** of the box cover **2** is oblique toward the outer side of the cover plate **20**, and thus the inner diameter of the side wall **21** gradually increases from the periphery of the cover plate **20** to the second connecting strip **210**. The outer diameter of the bottom of the box wall **11** is smaller than or equal to the inner diameter of the bottom of the side wall **21** of the box cover **2**, so that the inner space of the box cover **2** can accommodate the bottom of the box wall **11**, and when a plurality of food containers are stacked together, the side wall **21** retains the bottom of the box wall **11**.

[0040] The food container may be circular, elliptical, rectangular, pentagonal, hexagonal or in other irregular shape. Further preferably, the box bottom **10** of the embodiment is circular, and the cover plate **20** is also circular. The volume of the food container is within the range of 100-50000 ml. The food container is made of food-grade polypropylene, high-impact polystyrene, biaxially oriented polystyrene, natural inorganic mineral-filled polypropylene

composite, paper product or the like to be conducive to degradation or recycling, and is made by using molds.

[0041] The working principle of the food container of embodiments of the present invention is as follows:

[0042] After food is contained, the user puts the box cover **2** onto the opening of the box body **1**, and joins the first connecting strip **110** and the second connecting strip **210**; by pressing the convex rib **211** into the groove **111**, the first bent portion **112** is closely fitted to the second bent portion **212**, and the side wall **21** of the box cover **2** is closely fitted to the box wall **11** of the box body **1**, and the lock protrusion **213** can have a retaining effect to prevent the first bent portion **112** from separating from the second bent portion **212** and achieve good sealing of the food within the food container. The user can stack together a plurality of food containers with food contained therein to reduce the accommodating space and facilitate transport, and the convex ring **101** of the box bottom **10** facilitates grasping. When the box cover **2** needs to be lifted, the user can pull out the lock protrusion **213** with his thumb, and at the same time fixes the inner surface of the side wall **21** of the box cover **2** by other fingers, thereby easily removing the box cover **2**.

[0043] Although the present invention has been disclosed in the form of preferred embodiments and variations thereon, it will be understood that numerous additional modifications and variations could be made thereto without departing from the scope of the invention.

[0044] For the sake of clarity, it is to be understood that the use of 'a' or 'an' throughout this application does not exclude a plurality, and 'comprising' does not exclude other steps or elements.

What is claimed is:

1. A food container includes a box body with an opening and a box cover, wherein the box cover detachably covers the opening of the box body; the box body includes a box bottom and a box wall extending upward along the periphery of the box bottom; a top edge of the box wall extends toward the outer side of the box body to form a first connecting strip; the first connecting strip is provided with a groove in the middle, the opening direction of the groove being same as that of the box body, and the groove encircling the box body to form a closed ring; the box cover includes a cover plate and a side wall extending upward along the periphery of the cover plate; a top edge of the side wall extends toward the outer side of the box cover to form a second connecting strip; the middle of the second connecting strip protrudes toward the direction of the cover plate to form a convex rib; when the box cover covers the opening of the box body, the outer surface of the side wall of the box cover is fitted to the inner surface of the box wall of the box body, the convex rib of the box cover is embedded into the groove of the box body to form a seal structure.

2. The food container of claim **1**, wherein an edge of the first connecting strip is bent toward the direction of the box bottom to form a first bent portion, and an edge of the second connecting strip is bent toward the direction of the cover plate to form a second bent portion; and when the box cover covers the opening of the box body, the first bent portion is fitted to and sealed against the second bent portion.

3. The food container of claim **2**, wherein the width of the second bent portion is greater than that of the first bent portion; the inner side of an edge of the second bent portion bulges to form a lock protrusion; and the lock protrusion extends to an edge of the second bent portion.

4. The food container of claim 1, wherein the inner surface of the box wall is provided with a supporting step bulging from the inner surface; the upper surface of the supporting step is parallel to the box bottom, and the distance between the upper surface of the supporting step and the top of the box wall is equal to the height of the outer surface of the side wall of the box cover to support the cover plate of the box cover.

5. The food container of claim 1, wherein the outer diameter of the bottom of the box wall is smaller than or equal to the inner diameter of the bottom of the side wall of the box cover.

6. The food container of claim 2, the groove is formed by bending the first connecting strip.

7. The food container of claim 1, wherein a plurality of reinforcing vertical ribs are arranged on the outer surface of the box wall.

8. The food container of claim 7, wherein the plurality of reinforcing vertical ribs are uniformly arranged at intervals in a top area of the outer surface of the box wall, and the length of each reinforcing vertical rib is not greater than one fourth the height of the box body.

9. The food container of claim 7, wherein a central part of the outer surface of the box bottom is recessed toward the direction of an accommodating space of the box body to form a convex ring at a peripheral edge of the outer surface of the box bottom.

10. The food container of claim 7, wherein the outer surface of the box wall is provided with at least one anti-slip protrusion.

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