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(54) **THERMALLY INSULATED BOWL**

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CPC *A47G 19/027* (2013.01)

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(57) **ABSTRACT**

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The present invention relates to the field of thermally insulated tableware. To solve the problem of poor thermal insulation effect in the thermally insulated bowl in the prior art, the present invention provides a thermally insulated bowl, comprising: a food containing portion for containing food; and a medium containing portion provided with a cavity for containing a heating medium; a first engaging portion provided at an outer side of the food containing portion; a second engaging portion provided at an inner side of the medium containing portion, wherein the second engaging portion is configured to cooperate with the first engaging portion, so that a closed area for containing the heating medium is formed between the food containing portion and the medium containing portion when the food containing portion is mounted to the medium containing portion; and a hollow insulation portion provided between an inner wall and an outer wall of the medium containing portion.

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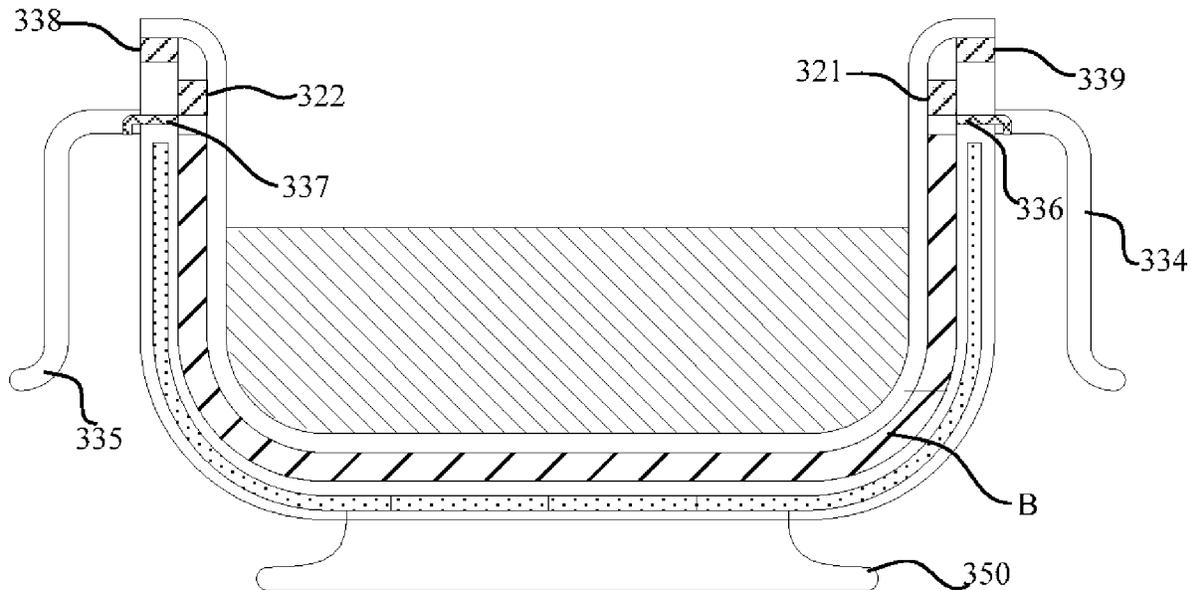
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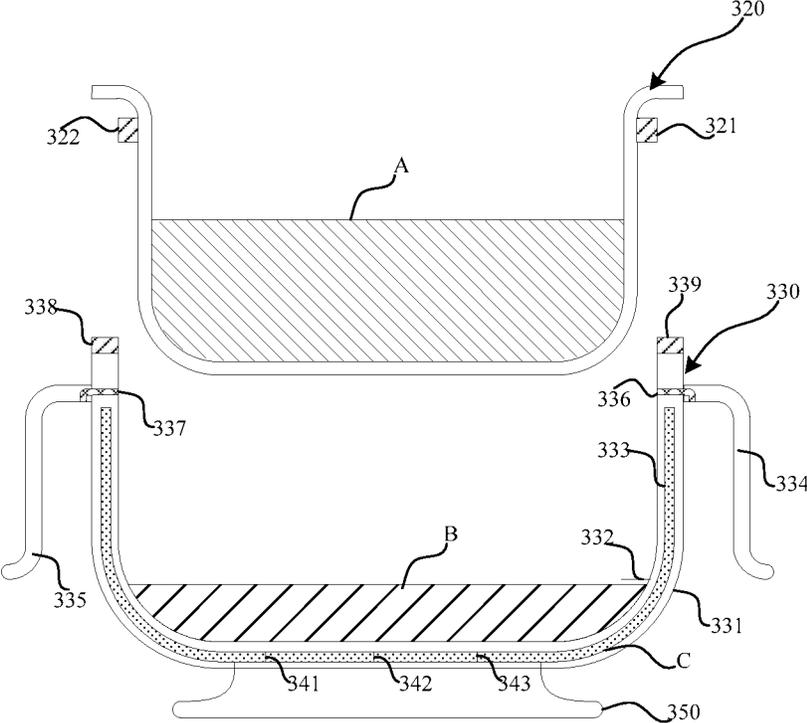


Fig. 1

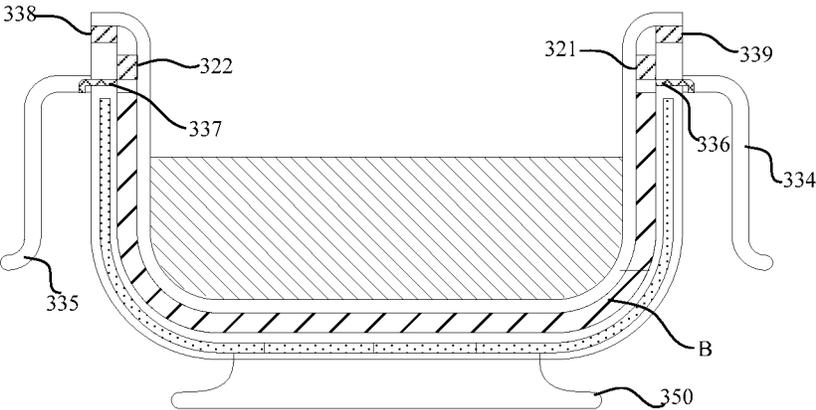


Fig. 2

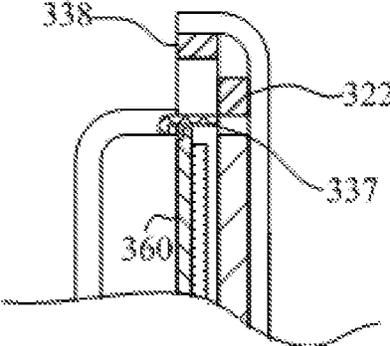


Fig. 3

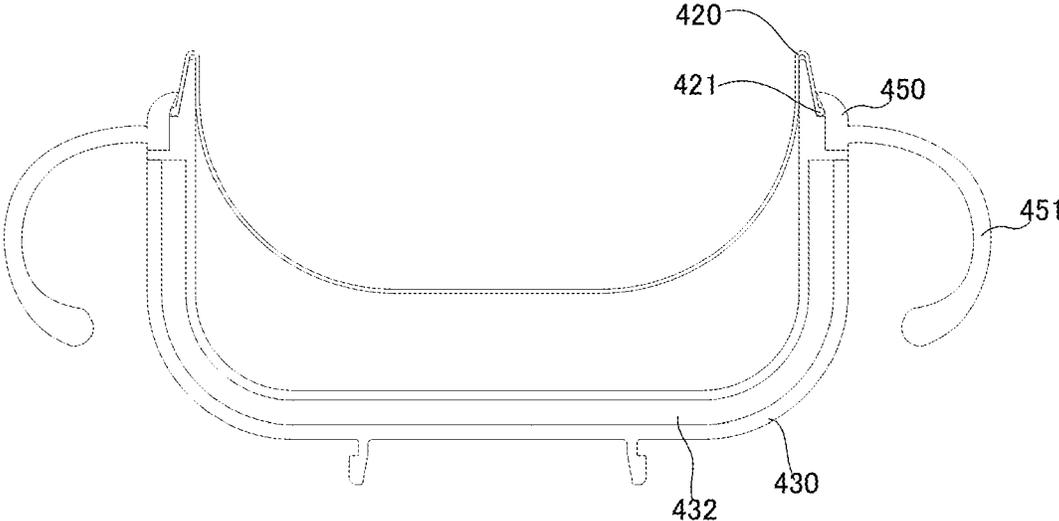


Fig. 4

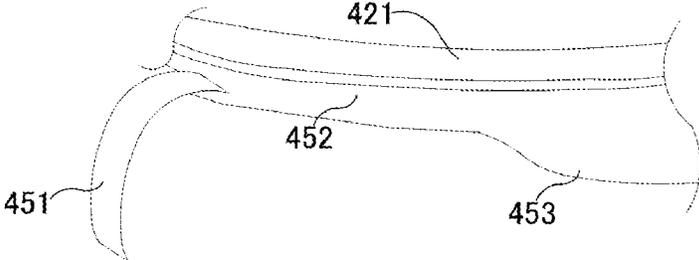


Fig. 5

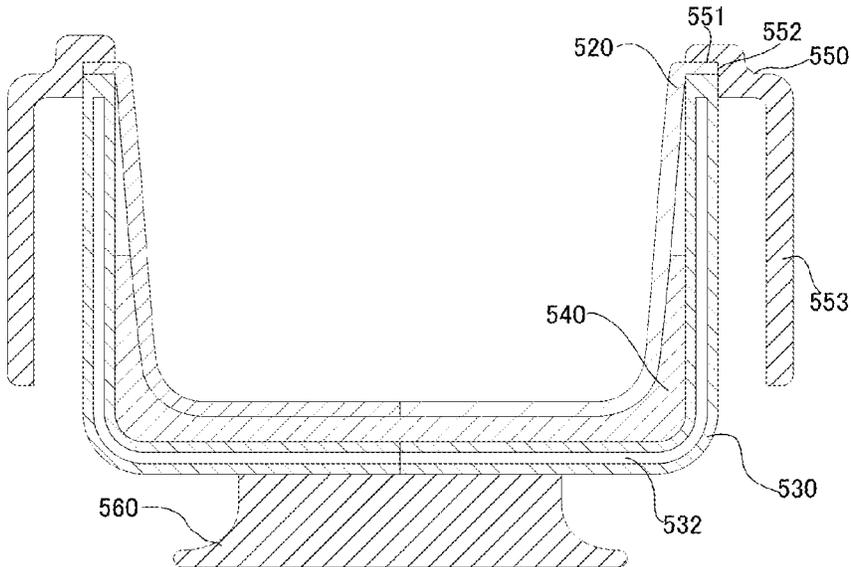


Fig. 6

THERMALLY INSULATED BOWL

TECHNICAL FIELD

[0001] The present invention relates to the field of thermally insulated tableware, in particular to the filed of thermally insulated bowl, and more particularly, to a thermally insulated bowl for children use.

BACKGROUND

[0002] Tableware is a necessity in the daily life of people. The requirement for tableware is increasing with the improvement of living standards. For example, it is required that it has a certain thermal insulation effect, especially for children who eat at a slow speed in the meal. Therefore, thermal insulation is very important for the tableware for children use.

[0003] Products commonly used for thermal insulation in the prior art include thermally insulated cups and bottles. However, in these types of products, thermal insulation material is usually directly filled between two layers, and hot water is poured within the inner layer, so as to provide thermal insulation for the hot water. However, the shape of product such as cup or bottle is quite different from the shape of bowl, and the content contained therein for heat preservation is also different, therefore the thermally insulated cup or bottle as known in the prior art cannot be used as a thermally insulated bowl.

[0004] For example, CN utility model application No. 94206858.0 discloses a thermally insulated bowl. In order to solve the technical problem of fast cooling of the food in the bowl, the bowl body is provided with an outer bowl, which is further provided with a thermal insulation layer and fluid inlet and outlet.

[0005] In the process of implementing the present invention, the inventor found that although the above-mentioned document provide a solution for the thermal insulation of bowls, with hot water being poured between the bowl body and the outer bowl, it is easy for the heat of the hot water to be transferred out through the outer bowl, leading to a poor thermal insulation effect. Further, at the beginning of pouring hot water into the bowl, the temperature of the water is very high, and it is easy to burn user's hands.

SUMMARY OF THE INVENTION

[0006] In order to solve the problem of inconvenient operation and poor thermal insulation effect in the thermally insulated bowl in the prior art, the present invention provides a thermally insulated bowl in which it is convenient to discharge the heating medium and the medium can be completely discharged.

[0007] In order to achieve the above objectives, the present invention provides a thermally insulated bowl, comprising: a food containing portion for containing food; and a medium containing portion provided with a cavity for containing a heating medium, wherein it further comprises: a first engaging portion provided at the outer side of the food containing portion; a second engaging portion provided at the inner side of the medium containing portion, wherein the second engaging portion is configured to cooperate with the first engagement portion, so that a closed area for containing the heating medium is formed between the food containing portion and the medium containing portion when the food containing portion is mounted to the medium containing

portion; and a hollow insulation portion provided between an inner wall and an outer wall of the medium containing portion.

[0008] In a preferred embodiment of the present application, the medium containing portion comprises a first component facing the food containing portion and a second component detachably connected with the first component, and the hollow insulation portion is formed by engaging the second component to the first component.

[0009] In a preferred embodiment of the present application, a reinforcing rib is provided inside the hollow insulation portion.

[0010] In a preferred embodiment of the present application, the first engaging portion and the second engaging portion are both threads that can engage with each other.

[0011] In a preferred embodiment of the present application, the thermally insulated bowl further comprises a sealing element provided between a rim of the medium containing portion and the food containing portion.

[0012] In a preferred embodiment of the present application, the thermally insulated bowl further comprises a vent hole provided in the medium containing portion and in communication with the closed area for containing the heating medium.

[0013] In a preferred embodiment of the present application, the vent hole is provided in a position in the side wall of the medium containing portion different from the position corresponding to the hollow insulation portion, and is provided in a position in the side wall of the medium containing portion corresponding to the closed area.

[0014] In a preferred embodiment of the present application, the thermally insulated bowl further comprises a handle provided at the outer side of the side wall of the medium containing portion, and the vent hole extends from the inner side of the side wall to the handle.

[0015] In a preferred embodiment of the present application, the thermally insulated bowl further comprises a handle provided at the outer side of the side wall of the medium containing portion, and the hollow insulation portion has a U shape, and the top end of the hollow insulation portion extends to the position of the handle.

[0016] In a preferred embodiment of the present application, the vent hole is provided in the side wall in a position below and close to the second engaging portion.

[0017] In a preferred embodiment of the present application, the thermally insulated bowl further comprises a limiting line provided at the inner side of the medium containing portion.

[0018] In a preferred embodiment of the present application, the thermally insulated bowl further comprises a connecting portion for detachably connecting the food containing portion with the medium containing portion, and the connecting portion can be connected with a corresponding side wall of the medium containing portion by a thread, a protrusion extending toward the connecting portion is provided at the side wall of the food containing portion, and the connecting portion is provided with an anti-detaching portion extending toward the food containing portion.

[0019] In a preferred embodiment of the present application, the connecting portion further comprises a handling portion.

[0020] With the above technical solution, at least one of the following beneficial effects can be obtained:

[0021] 1. A hollow insulation portion is provided between an inner wall and an outer wall of the medium containing portion. The hollow insulation portion does not allow heat transfer, so the heat of the heating medium can be transferred only in one direction, i.e. towards the food, so that a better thermal insulation effect for the food contained therein can be provided.

[0022] 2. The thermally insulated bowl is provided with vent holes. During decreasing of the temperature of the heating medium inside the bowl, which causes change in the pressure in the closed area containing the heating medium, the pressure difference between the closed area and the outside is reduced through the vent holes. In this way, it becomes less easy for the food containing portion to be sucked on the medium containing portion.

[0023] 3. A sealing ring is further provided between the medium containing portion and the food containing portion, which can further improve the sealing of the heating medium between the medium containing portion and the food containing portion, thereby enhancing the thermal insulation effect.

[0024] Other features and advantages of the present invention will be explained in the subsequent description, and partly become obvious from the description, or be understood by implementing the technical solutions of the present invention. The objects and other advantages of the present invention can be achieved and obtained through the structures and/or processes specifically pointed out in the description, claims, and drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0025] FIG. 1 is an exploded schematic view of a thermally insulated bowl according to an embodiment of the present invention.

[0026] FIG. 2 is a structural schematic view of a thermally insulated bowl according to an embodiment of the present invention.

[0027] FIG. 3 is a partial schematic view of a thermally insulated bowl according to an embodiment of the present invention.

[0028] FIG. 4 is a structural schematic view of a thermally insulated bowl according to another embodiment of the present invention.

[0029] FIG. 5 is a partial schematic view of the thermally insulated bowl of FIG. 4 in another state.

[0030] FIG. 6 is a structural schematic view of a thermally insulated bowl according to still another embodiment of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

[0031] In the following, the embodiments of the present invention will be described in detail with reference to the accompanying drawings and examples, so as to understand how the present invention uses technical means to solve technical problems and achieve the technical effect. The implementation process can be fully understood and implemented accordingly. It should be noted that these specific descriptions are only for those skilled in the art to more easily and clearly understand the present invention, rather than a limited interpretation of the present invention; and as

long as there is no conflict, the various embodiments of the present invention and the features in the various embodiments can be combined with each other, and the resulting technical solutions are within the scope of the present invention.

[0032] The technical solutions of the present invention are described in detail below through the drawings and specific embodiments.

Examples

[0033] As shown in FIGS. 1 and 2, this embodiment provides a thermally insulated bowl, which comprises: a food containing portion 320 for containing food A; a medium containing portion 330, which is provided with a cavity for containing a heating medium B; a first engaging portion provided at the outer side of the food containing portion; a second engaging portion provided at the inner side of the medium containing portion, wherein the second engaging portion is configured to cooperate with the first engagement portion, so that a closed area for containing the heating medium is formed between the food containing portion and the medium containing portion when the food containing portion is mounted to the medium containing portion; and a hollow insulation portion 333 provided between an inner wall and an outer wall of the medium containing portion. Since a hollow insulation portion is provided between an inner wall and an outer wall of the medium containing portion, and the hollow insulation portion does not allow heat transfer, the heat of the heating medium can be transferred only in one direction, i.e. towards the food, so that a better thermal insulation effect for the food contained therein can be provided.

[0034] As shown in FIG. 3, in a preferred embodiment, the medium containing portion 330 comprises a first component facing the food containing portion 320 and a second component 360 detachably connected with the first component, and the hollow insulation portion 333 is formed by engaging the second component to the first component. Specifically, the second component and the first component may be engaged by an interference fit for mechanical structure, or by an engagement followed by an adhesion. Further preferably, the injection molded part where the handle 335 and the vent holes 336, 337 are located may be integrally molded with the above-mentioned first component or with the above-mentioned second component. Therefore, a preferred embodiment provides a thermally insulated bowl which provides a good thermal insulation effect and can be manufactured by a simple process, and facilitates large-scale production.

[0035] In addition, during the process of implementing the present application, the inventor also found that when the hot water cools down, the outer bowl and the bowl body may be sucked together, and it becomes inconvenient to detach the outer bowl from the bowl body. Therefore, in a preferred embodiment, the thermally insulated bowl further comprises vent holes 336, 337 provided in the medium containing portion and in communication with the closed area for containing the heating medium. Therefore, during decreasing of the temperature of the heating medium inside the bowl, which causes change in the pressure in the closed area containing the heating medium, the pressure difference between the closed area and the outside is reduced through the vent holes. In this way, it becomes less easy for the food containing portion to be sucked on the medium containing portion.

[0036] In a preferred embodiment, the size of the vent holes 336, 337 is provided at the mm level, such as 1 mm, 2 mm, 3 mm, 5 mm, etc., so that even if the bowl is turned over during use, only a very small amount of heating medium flows out from the vent holes, so as not to burn people.

[0037] In a preferred embodiment, the food containing portion 320 is made of stainless steel or plastic, and the medium containing portion 330 is made of plastic or glass fiber reinforced plastic, and the vent holes 336 and 337 can be directly formed as the medium containing portion 330 is being formed, for example, as a cylindrical or a square hole on the outer wall of the medium containing portion 330, or a rubber plug with a hole added to a reserved cylindrical or square hole. It should be noted that the number of the vent holes is not limited, and those skilled in the art may select the corresponding number as needed.

[0038] In a preferred embodiment, the first engaging portion is threads 321, 322, and the second engaging portion is threads that can be engaged with the threads 321, 322. It is also possible to engage the first engaging portion and the second engaging portion by protrusions and grooves. In this way, the food containing portion cannot be easily detached from the medium containing portion. The food containing portion can be made of plastic or stainless steel.

[0039] In a preferred embodiment, the thermally insulated bowl further comprises sealing elements 338, 339, such as rubber, silicone, etc., provided between a rim of the medium containing portion and the food containing portion. In this way, it can further improve the sealing of the heating medium between the medium containing portion and the food containing portion, thereby enhancing the thermal insulation effect.

[0040] In a preferred embodiment, the thermally insulated bowl further comprises a hollow insulation portion 333 provided between an inner wall and an outer wall 331 of the medium containing portion. The medium containing portion is made of plastic, and the hollow insulation portion is filled with air C. Further preferably, reinforcing ribs 341, 342, and 343 are further provided inside the hollow insulation portion. Further preferably, the vent holes 336 and 337 are provided in a position in the side wall of the medium containing portion different from the position corresponding to the hollow insulation portion, and are provided in a position in the side wall of the medium containing portion corresponding to the closed area. Since the hollow insulation portion can be directly integrally formed, and a sealed area needs to be separately formed with the vent holes 336, 337 apart from the hollow insulation portion, providing the vent holes 336, 337 in a position in the side wall of the medium containing portion different from the position corresponding to the hollow insulation portion may reduce the difficulty of forming them.

[0041] In addition, it should be noted that the vent holes 336, 337 may also be provided at the upper surface of the medium containing portion 330 corresponding to the food containing portion 320, and then the upper surface can be covered with sealing elements 338, 339, and finally the medium containing portion 330 and the food containing portion 320 can be assembled together. Further, it can also be provided in other areas that communicate with the closed area for containing the heating medium.

[0042] In a preferred embodiment, the thermally insulated bowl further comprises handles 334, 335 provided at the

outer side of the side wall, and the vent holes extend from the inner side of the side wall to the handles 334, 335 respectively. In this way, when the thermally insulated bowl is used in a cold weather, the hot air from the vent hole can also help to warm the user's hands.

[0043] However, the position of the vent holes 336, 337 is not limited to the above, and those skilled in the art may also provide it at an edge position of the medium containing portion, for example, below the sealing elements 338, 339.

[0044] In a preferred embodiment, the thermally insulated bowl further comprises a limiting line 332 provided at the inner side of the medium containing portion. It facilitates the user not to pour too much heating medium (for example, warm water), so as to avoid overflow of the heating medium when the food containing portion is mounted into the medium containing portion.

[0045] In a preferred embodiment, the hollow insulation portion 333 has a U shape, and the top end of the hollow insulation portion 333 extends to the position of the handle. In this way, the user won't get burned no matter he directly grasps the bowl from the bottom towards the side wall or holds the bowl by handles.

[0046] In a preferred embodiment, the position of the vent holes 336, 337 in the side wall of the medium containing portion 330 is provided below and close (adjacent or almost adjacent) to the second engaging portion. In this way, for a certain size of the side wall, the hollow insulation portion can be made as large as possible in the side wall, so that a better thermal insulation effect can be provided.

[0047] It should be noted that the terms "first" and "second" used in the above description are only for the purpose of making it easier for those skilled in the art to understand the technical solutions provided by this application, and are not limitations to the technical solutions. Those skilled in the art can use other terms to provide the description.

[0048] FIG. 4 shows another thermally insulated bowl provided by another embodiment of the present application. This thermally insulated bowl also comprises a food containing portion 420, a medium containing portion 430 for containing a heating medium 440, a U-shaped hollow insulation portion 432 provided inside the medium containing portion 430 as in the above embodiment, and a base 460. However, unlike the bowl in FIGS. 1 and 2, in the thermally insulated bowl provided in FIG. 4 the section of the medium containing portion 430 corresponding to the food containing portion 420 is configured to have an inverted "T" shaped cross-section, and the food containing portion 420 further comprises an extension portion on both sides of the inverted "T" shaped cross-section, wherein the extension portion engages with the top surface of the medium containing portion, and the extension portion is facing downward. The thermally insulated bowl further comprises a connecting portion 450 for connecting the food containing portion 420 with the medium containing portion 430. Preferably, as shown in FIG. 5, the connecting portion 420 is provided with a first part 453 which can be connected with a corresponding side wall of the medium containing portion through threads. A protrusion 451 (e.g., a curling at the edge of the rim of the bowl, etc.) extending toward the connecting portion is provided at the side wall of the food containing portion, and the connecting portion is provided with an anti-detaching portion 452 extending toward the food containing portion. The anti-detaching portion 452 only needs to have a size decreasing in an upward (the direction from the bottom of

the bowl to the rim of the bowl in FIG. 4) as well as in a radial direction to form a ring.

[0049] It should be noted that in the connecting portion 450 of the thermally insulated bowl in FIGS. 4 and 5, the anti-detaching portion 452 is not limited to an entire ring as shown in FIG. 5, but may also be a partial ring. The first part 453 is also not limited to a partial ring, but may also be an entire ring, provided that the first part 453 and the anti-detaching portion 452 together form an entire ring, which can serve to connect the food containing portion with the medium containing portion.

[0050] As shown in FIG. 4, in a preferred embodiment, the connecting portion 450 is further provided with a handle that is convenient for the user to hold. By forming as one piece, the connecting portion as a single component can not only serve as a holding portion, but also serve to connect the food containing portion with the medium containing portion.

[0051] In addition, in the above embodiment, the connecting portion locks the food containing portion through the anti-detaching portion at corresponding locking position, and is connected with the thread at the outer side of the insulation portion at the position corresponding to the handle in the ring. In this way, it avoids the need for providing any thread on the food containing portion (inner bowl), making it convenient for cleaning, assembling and disassembling. Moreover, the connecting portion 450 is detachably connected to the food containing portion 420 and the medium containing portion 430, facilitating the user to replace the heating medium.

[0052] FIG. 6 shows another thermally insulated bowl provided by another embodiment of the present application. This thermally insulated bowl also comprises a food containing portion 520, a medium containing portion 530 for containing a heating medium 540, a U-shaped hollow insulation portion 532 provided inside the medium containing portion 530 as in the above embodiment, and a base 560. However, unlike the bowl in FIGS. 1 and 2, in the thermally insulated bowl provided in FIG. 6 the section of the medium containing portion 530 corresponding to the food containing portion 520 is configured to have an inverted “T” shaped cross-section (similar to that in FIG. 4). However, in the embodiment of FIG. 6, in the food containing portion 520, the extension portion on the side of the inverted “T” shaped cross-section is a protrusion perpendicular to the side wall of the medium containing portion. Moreover, the thermally insulated bowl further comprises a connecting portion 550 for detachably connecting the food containing portion 510 with the medium containing portion 530. The connecting portion 550 is provided with vertically intersecting surfaces 551, 552 respectively corresponding to the food containing portion 520 and the medium containing portion 530, and the side wall corresponding to the surface 552 and the side wall of the medium containing portion are provided with threads. In this way, the connecting portion above the surface can also serve as an anti-detaching portion, and the protrusion at the side wall of the medium containing portion can cooperate with the anti-detaching portion to provide the same technical effect as in FIG. 4.

[0053] With the above technical solution, at least one of the following beneficial effects can be obtained:

[0054] 1. A hollow insulation portion is provided between an inner wall and an outer wall of the medium containing portion. The hollow insulation portion does not allow heat transfer, so the heat of the heating medium can be transferred

only in one direction, i.e. towards the food, so that a better thermal insulation effect for the food contained therein can be provided.

[0055] 2. The thermally insulated bowl is provided with vent holes. During decreasing of the temperature of the heating medium inside the bowl, which causes change in the pressure in the closed area containing the heating medium, the pressure difference between the closed area and the outside is reduced through the vent holes. In this way, it becomes less easy for the food containing portion to be sucked on the medium containing portion.

[0056] 3. A sealing ring is further provided between the medium containing portion and the food containing portion, which can further improve the sealing of the heating medium between the medium containing portion and the food containing portion, thereby enhancing the thermal insulation effect.

[0057] Finally, it should be noted that the above description only discloses the best embodiment of the present invention, and does not limit the present invention in any form. Any person skilled in the art can make many possible changes and simple replacements to the technical solution of the present invention using the methods and technical solution disclosed above without departing from the scope of the present invention, which fall in the scope of the present invention.

1. A thermally insulated bowl, comprising:

a food containing portion for containing food;

a medium containing portion provided with a cavity for containing a heating medium; an extension portion provided at an outer side of the food containing portion;

a top portion of the medium containing portion corresponding to the extension portion, wherein a bottom surface of the extension portion is configured to engage with the top portion, so that a closed area for containing the heating medium is formed between the food containing portion and the medium containing portion when the food containing portion is mounted to the medium containing portion; and

a hollow insulation portion provided between an inner wall and an outer wall of the medium containing portion; wherein it further comprises:

a connecting portion for detachably connecting the food containing portion with the medium containing portion, wherein the connecting portion is configured to connect the extension portion at the outer side of the food containing portion with the medium containing portion to prevent detaching of the food containing portion from the medium containing portion; and

a sealing element provided between a rim of the medium containing portion and the food containing portion; wherein the medium containing portion is made of plastic, and comprises a first component facing the food containing portion and a second component detachably connected with the first component, and the hollow insulation portion is formed by engaging the second component to the first component.

2. The thermally insulated bowl of claim 1, wherein the connecting portion is configured to connect with an outer side wall of the medium containing portion by thread.

3. The thermally insulated bowl of claim 1, wherein a reinforcing rib is provided inside the hollow insulation portion.

4. The thermally insulated bowl of claim 1, wherein the extension portion is provided as a protrusion extending toward the connecting portion, and the connecting portion is provided with an anti-detaching portion extending toward the food containing portion.

5. The thermally insulated bowl of claim 1, wherein the second component is configured to engage with the first, component by an interference fit or by an engagement followed by an adhesion.

6. The thermally insulated bowl of claim 1, wherein it further comprises a vent hole provided in the medium containing portion and in communication with the closed area for containing the heating medium.

7. The thermally insulated bowl of claim 6, wherein the vent hole is provided in a position in a side wall of the medium containing portion different from a position corresponding to the hollow insulation portion, and is provided in

a position in a side wall of the medium containing portion corresponding to the closed area.

8. The thermally insulated bowl of claim 6, wherein it further comprises a handle provided at an outer side of a side wall of the medium containing portion, and the vent hole extends from an inner side of the side wall to the handle.

9. The thermally insulated bowl of claim 1, wherein it further comprises a handle provided at an outer side of a side wall of the medium containing portion, and the hollow insulation portion has a U shape, and a top end of the hollow insulation portion extends to the position of the handle.

10. The thermally insulated bowl of claim 1, wherein it further comprises a limiting line provided at an inner side of the medium containing portion.

11. (canceled)

12. The thermally insulated bowl of claim 1, wherein the connecting portion further comprises a handling portion.

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