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(54) **BENTO BOX STRUCTURE**

(57) The bento box structure (1) comprises a box body (2) having a first opening (20) formed upwardly; a first tray (3) assembled with the box body (2) via the first opening (20), and having a fixed partition (30) and at least a movable partition (31); a second tray (4) adapted to contain tableware, detachably assembled with a bottom of the box body (2) and having a bottom plate (40) and

a second opening (41) being formed upwardly, a lower side of the bottom plate (40) being formed with at least a positioning base (42); and a cover (5) arranged with at least a positioning member (50) with respect to the positioning base of the second tray (4) to engage therewith, which provides more options for storage of tableware.

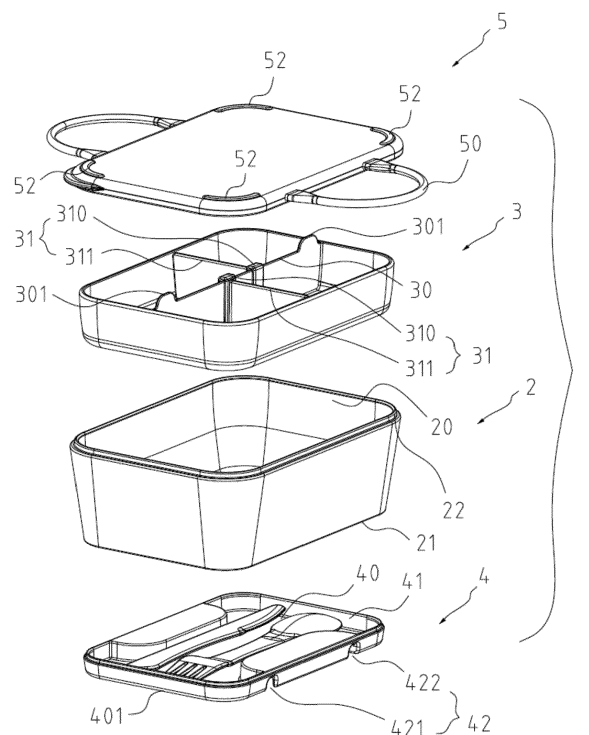


FIG. 1

Description

[0001] The present invention relates to a food container structure. More particularly, the present invention relates to a bento box structure for containing staple food, non-staple food and tableware, which provides convenient carrying and use.

[0002] The design of a bento box structure varies consistently with human demands in its usage by expression of materials and functions. For example, a recyclable paper bento box is designed with environmental considerations, usually used for containing rice and vegetables in franchised buffet restaurants, and a reusable private-use bento box of stainless steel material alternatively called lunch box, or of plastic material in line with environmental protection standards provides not only containing rice and vegetables, but also storage of chopsticks and spoons.

[0003] However, no matter the reusable private-use bento box is of stainless steel material or of plastic material in line with environmental protection standards, there is an existing defect in its structure which causes an inconvenient use regardless of carry convenience. For example, the bento box of stainless steel only provides a single inner space for containing rice and vegetables. Although the bento box of plastic material provides partitions which divide inner space thereof into several cavities for food containing, even for storage of chopsticks and spoons, the partitions are all fixed. In this manner, each of the cavities of the bento box is fixed in size, and either chopsticks or spoons may fit thereto only, which is hard to meet the different needs of different users.

[0004] An object of the present invention is to provide a bento box structure which makes space size for containing food more selective, and provides more options for storage of tableware, so as to provide convenient carrying and use.

[0005] To attain this, the bento box structure comprises a box body adapted to contain staple food and having a first opening formed upwardly; a first tray adapted to contain non-staple food, assembled with the box body via the first opening, and having a fixed partition and at least a movable partition; a second tray adapted to contain tableware, detachably assembled with a bottom of the box body and having a bottom plate and a second opening opposite to the bottom plate, the second opening being formed upwardly, a lower side of the bottom plate being formed with at least a positioning base; and a cover located above the first tray and arranged with at least a positioning member with respect to the positioning base of the second tray to engage therewith, so as to assemble the first tray, the box body and the second tray together as a sealed construction.

[0006] In according with the present invention, the first tray is rectangular when viewed from above, having two long sides and two short sides, the fixed partition being secured on and between the two short sides of the first

tray, the movable partition consisting of a slidable piece and a partition piece connected with the slidable piece with the partition piece formed perpendicular to the fixed partition, so that when received in the box body, the fixed partition and the movable partition of the first tray divide an inner space of the box body into a number of cavities with same or different sizes depending upon an adjusted position of the slidable piece.

[0007] In according with the present invention, the second tray is rectangular when viewed from above, having two long sides and two short sides, the positioning base being formed along the two long sides of the second tray, the positioning base being defined as a ring groove, the ring groove forming two notches on the two long sides of the second tray. The positioning member of the cover is a flexible circumferential band, secured in the ring groove and the two notches of the ring groove.

BRIEF DESCRIPTION OF THE DRAWINGS

[0008]

FIG. 1 is an exploded assembly view of a bento box structure in accordance with the present invention;

FIGS. 2A and 2B are a perspective view and a front view of a movable partition of the bento box structure in accordance with the present invention, respectively;

FIGS. 3A, 3B and 3C are a perspective view of FIG. 1, a front view and a bottom view of the bento box structure assembled in accordance with the present invention, respectively; and

FIG. 4 is a cross-sectional view taken along line 4-4 of FIG. 3A.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0009] Referring to FIGS. 1 to 3C respectively as an exploded assembly view of a bento box structure in accordance with the present invention, perspective and front views of a movable partition of the bento box structure, perspective, front and bottom views of the bento box structure assembled, the bento box structure 1 is made of biodegradable thermoplastic aliphatic polyester heat-resistant polylactic acid or chitosan-DL-poly(lactic acid) (PLA/CPLA). The material would be broken up into lactic acid under composting conditions, and the lactic acid is then ingested by bacteria and converted to water and carbon dioxide as a recyclable process. The bento box structure 1 in accordance with the present invention comprises a box body 2, a first tray 3, a second tray 4 and a cover 5. The box body 2 has a first opening 20 formed upwardly, a bottom 21 opposite to the first opening 20 and an inner space formed in a tapered shape between the first opening 20 and the bottom 21, wherein

the first opening 20 is rectangular. The inner space of the box body 2 is adapted to contain staple food such as rice and noodle. The first opening 20 of the box body 2 is disposed with a first engagement element which is defined as a lip 22 formed integrally with a peripheral surface of the first opening 20 of the box body 2. The bottom 21 of the box body 2 is disposed with a first fitting element which is defined as a protuberance 23 formed integrally with a peripheral surface of the bottom 21 of the box body 2, as shown in FIG. 4.

[0010] The first tray 3 adapted to contain non-staple food such as main courses and vegetables is rectangular when viewed from above, having two long sides and two short sides. The first tray 3 includes a fixed partition 30 and at least a movable partition 31, wherein the fixed partition 30 is secured on and between the two short sides of the first tray 3, and at least a gripping part 301 is formed integrally with the fixed partition 30 and extending from an edge of the fixed partition 30 toward the cover 5 in an arc shape, which provides convenience in taking up the first tray 3 when in use. With reference to FIGS. 2A and 2B, the movable partition 31 consists of a slidable piece 310 and a partition piece 311 connected with the slidable piece 310. The slidable piece 310 is slidably mounted on the fixed partition 30 with the partition piece 311 formed perpendicular to the fixed partition 30, so that when received in the box body 2, the fixed partition 30 and the movable partition 31 of the first tray 3 divide the inner space of the box body 2 into a number of cavities with same or different sizes depending upon an adjusted position of the slidable piece 310. With reference to FIG. 4, it is noted that when tapered corresponding to the inner space of the box body 2, the first tray 3 has a maximum outer diameter equal to an inner diameter of the box body 2 (i.e. the diameter of the inner space of the box body 2) at a horizontal level about half height of the box body 2. When the first tray 3 assembled in the inner space of the box body 2 needs to be taken out alone via the first opening 20, the gripping part 301 comes in handy.

[0011] The second tray 4 adapted to contain tableware such as chopsticks, knives, forks, spoons is rectangular when viewed from above, having two long sides and two short sides. The second tray 4 has a bottom plate 40 and a second opening 41 opposite to the bottom plate 40. A lower side 401 of the bottom plate 40 is formed with at least a positioning base 42. The positioning base 42 is formed along the two long sides of the second tray 4. The positioning base 42 is defined as a ring groove which forms two notches on the two long sides of the second tray 4. Further, a first fitting element and a second fitting element engageable with the first fitting element are included between the second tray 4 and the box body 2, wherein the first fitting element is defined as a protuberance 23 formed integrally with a peripheral surface of the bottom 21 of the box body 2, and the second fitting element is defined as a channel 43 formed integrally with a peripheral surface of the second tray 4 so as to ensure a firm connection between the box body 2 and the second

tray 4.

[0012] The cover 5 is located above the first tray 3 and arranged with at least a positioning member 50 with respect to the positioning base 42 of the second tray 4. The positioning member 50 of the cover 5 may be a flexible circumferential band, secured in the ring groove and the two notches 421, 422 of the ring groove so as to assemble the first tray 3, the box body 2 and the second tray 4 together as a sealed construction. Further, a first engagement element and a second engagement element engageable with the first engagement element are included between the cover 5 and the box body 2, wherein the first engagement element is defined as a lip 22 formed integrally with a peripheral surface of the first opening 20 of the box body 2, and the second engagement element is defined as a recess 51 formed integrally with a peripheral surface of the cover 5 so as to ensure a firm connection between the box body 2 and the cover 5. Still further, Anti-slip pads 52 may be disposed on a surface of the cover 5, e.g. four corners of the surface of the cover 5, to provide a slip resistance when the cover 5 is used alone as a dish.

[0013] With reference to FIG. 4, when the bento box structure 1 is used in practice, the first tray 3 containing non-staple food (main courses and/or vegetables) is assembled in the box body 2 via the first opening 20 containing staple food (rice and/or noodle), with the second tray 4 containing tableware (chopsticks, knives, forks and/or spoons) on the bottom plate 40, assembled with the box body 2. In the mean time, the protuberance 23 and the channel 43 are engaged with each other. The cover 5 is assembled above the first tray 3, with the recess 51 and the lip 22 engaged with each other, and with the positioning member 50 secured in the positioning base 42 and the two notches 421, 422 of the second tray 4, so as to assemble the first tray 3, the box body 2 and the second tray 4 together as a sealed construction, which provides convenient carrying and use.

[0014] It is understood that the invention may be embodied in other forms within the scope of the claims. Thus the present examples and embodiments are to be considered in all respects as illustrative, and not restrictive, of the invention defined by the claims.

Claims

1. A bento box structure (1), comprising:

a box body (2) adapted to contain staple food and having a first opening (20) formed upwardly; a first tray (3) adapted to contain non-staple food, assembled with the box body (2) via the first opening (20), and having a fixed partition (30) and at least a movable partition (31); a second tray (4) adapted to contain tableware, detachably assembled with a bottom of the box body (2) and having a bottom plate (40) and a

- second opening (41) opposite to the bottom plate (40), the second opening (41) being formed upwardly, a lower side of the bottom plate (40) being formed with at least a positioning base (42); and
 a cover (5) located above the first tray (3) and arranged with at least a positioning member (50) with respect to the positioning base (42) of the second tray (4) to engage therewith, so as to assemble the first tray, the box body and the second tray together as a sealed construction.
2. The bento box structure of claim 1, wherein the first tray (3) is rectangular when viewed from above, having two long sides and two short sides, the fixed partition (30) being secured on and between the two short sides of the first tray, the movable partition (31) consisting of a slidable piece (310) and a partition piece (311) connected with the slidable piece (310) with the partition piece (311) formed perpendicular to the fixed partition (30), so that when received in the box body (2), the fixed partition (30) and the movable partition (31) of the first tray (3) divide an inner space of the box body (2) into a number of cavities with same or different sizes depending upon an adjusted position of the slidable piece (310).
 3. The bento box structure of claim 2, wherein the inner space of the box body (2) is formed in a tapered shape between the first opening (20) and the bottom (21), and when tapered corresponding to the inner space of the box body (2), the first tray (3) has a maximum outer diameter equal to an inner diameter of the box body (2) (i.e. the diameter of the inner space of the box body) at a horizontal level about half height of the box body (2).
 4. The bento box structure of claim 1, wherein the fixed partition (30) is formed integrally with at least a gripping part (301) which extends from an edge of the fixed partition (30) toward the cover (5) in an arc shape.
 5. The bento box structure of claim 1, wherein the second tray (4) is rectangular when viewed from above, having two long sides and two short sides, the positioning base (42) being formed along the two long sides of the second tray (4), the positioning base (42) being defined as a ring groove, the ring groove forming two notches on the two long sides of the second tray (4).
 6. The bento box structure of claim 5, wherein the positioning member (50) of the cover (5) is a flexible circumferential band, secured in the ring groove and the two notches (421,422) of the ring groove.
 7. The bento box structure of claim 1, wherein a first engagement element and a second engagement element engageable with the first engagement element are included between the cover (5) and the box body (2), the first engagement element being defined as a lip (22) formed integrally with a peripheral surface of the first opening (20) of the box body (2), and the second engagement element being defined as a recess (51) formed integrally with a peripheral surface of the cover (5) so as to ensure a firm connection between the box body (2) and the cover (5).
 8. The bento box structure of claim 1, wherein a first fitting element and a second fitting element engageable with the first fitting element are included between the second tray (4) and the box body (2), the first fitting element being defined as a protuberance (23) formed integrally with a peripheral surface of the bottom (21) of the box body (2), and the second fitting element being defined as a channel (43) formed integrally with a peripheral surface of the second tray (4) so as to ensure a firm connection between the box body and the second tray (4).
 9. The bento box structure of claim 1, wherein anti-slip pads (52) are disposed on four corners of a surface of the cover (5) to provide a slip resistance when the cover (5) is used alone as a dish.

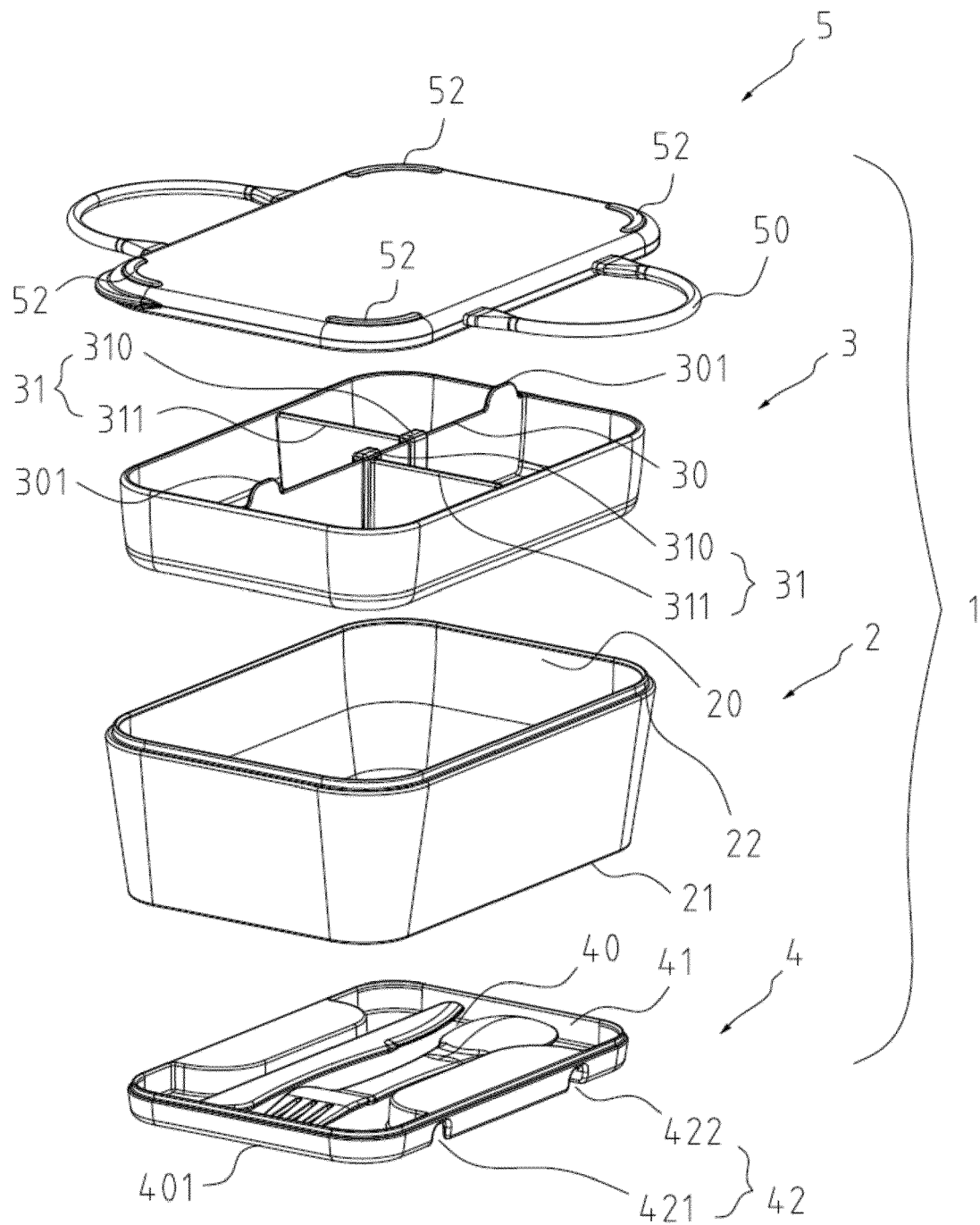


FIG. 1

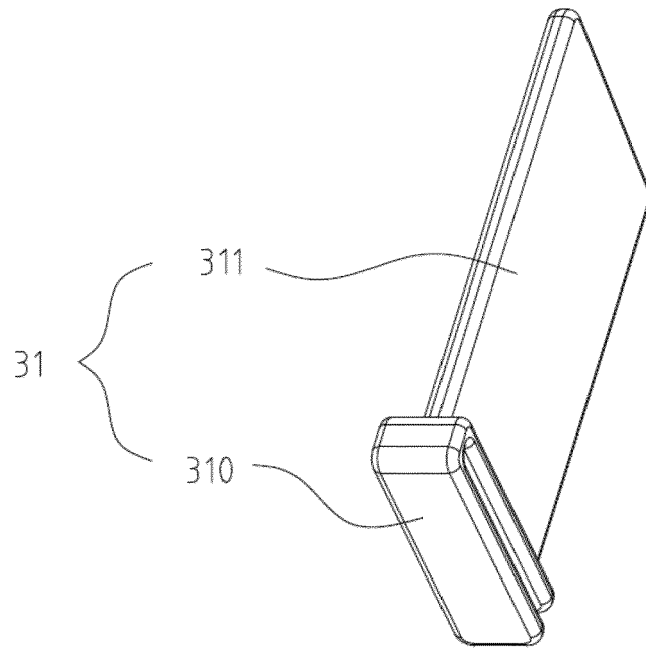


FIG. 2A

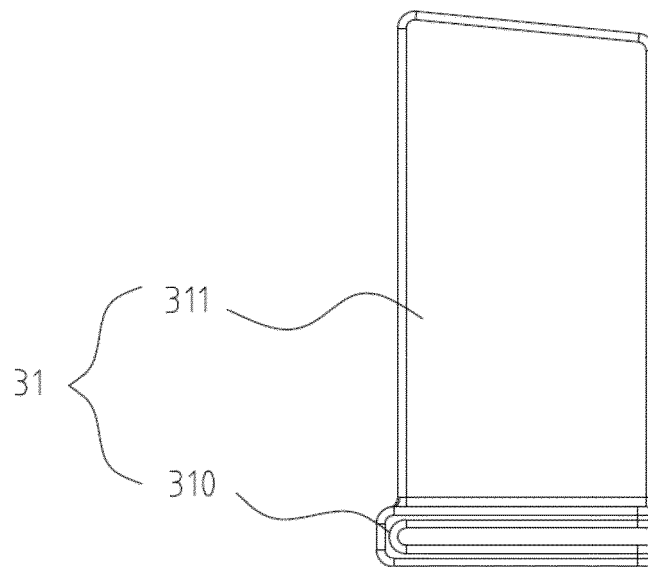


FIG. 2B

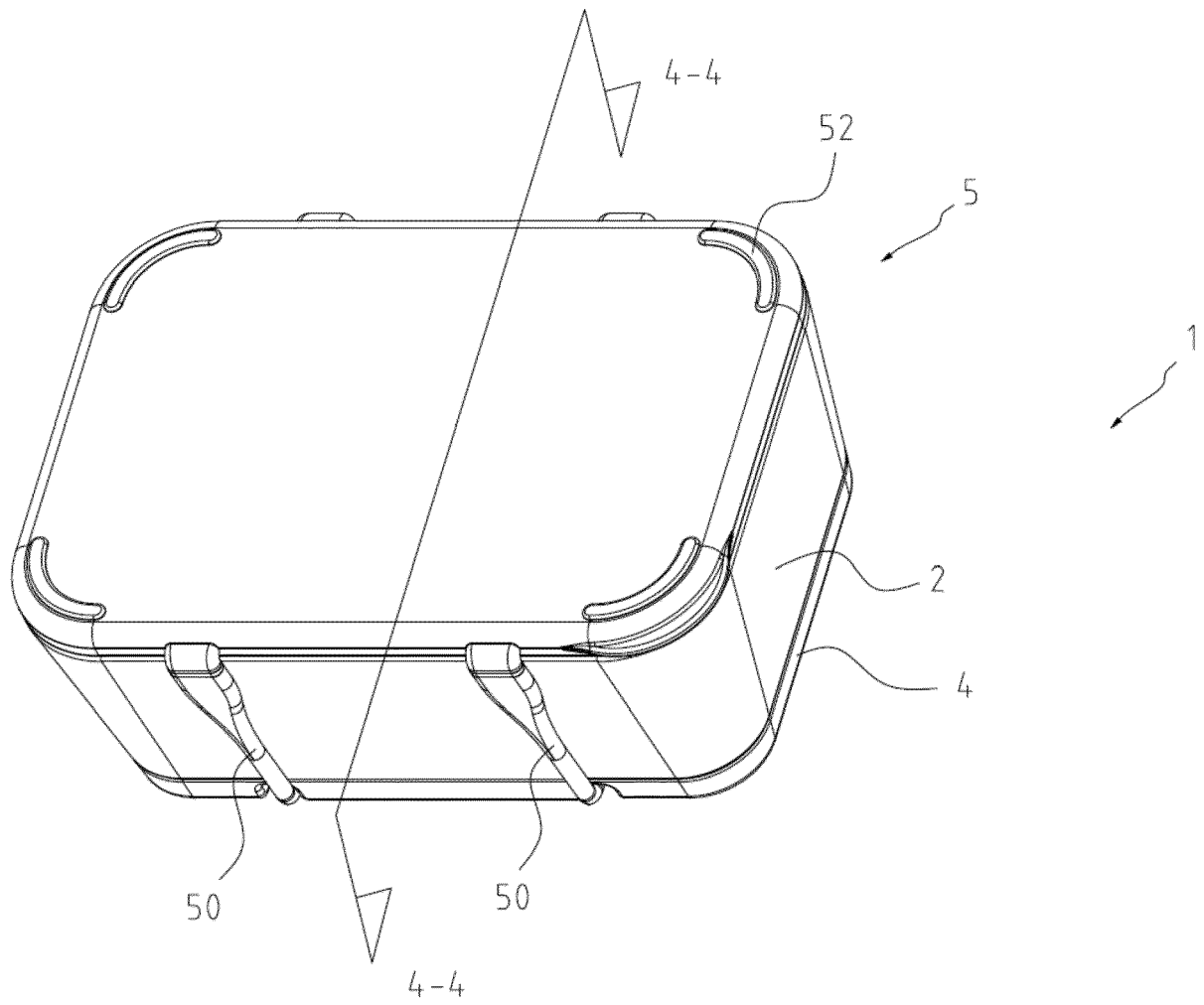


FIG. 3A

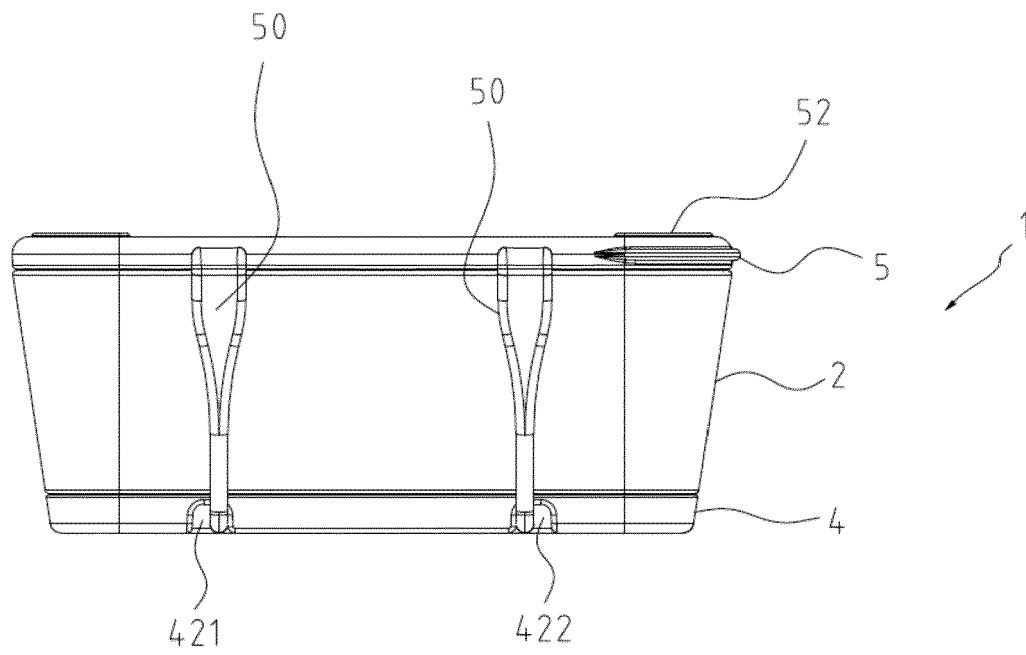


FIG. 3B

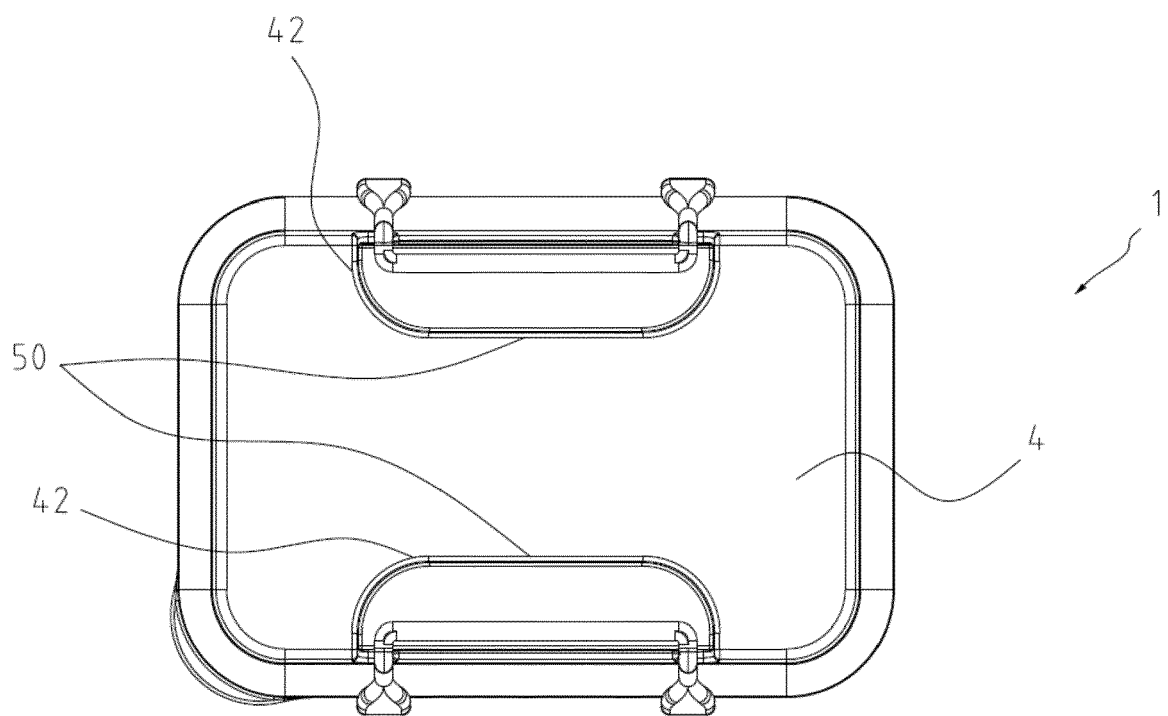


FIG. 3C

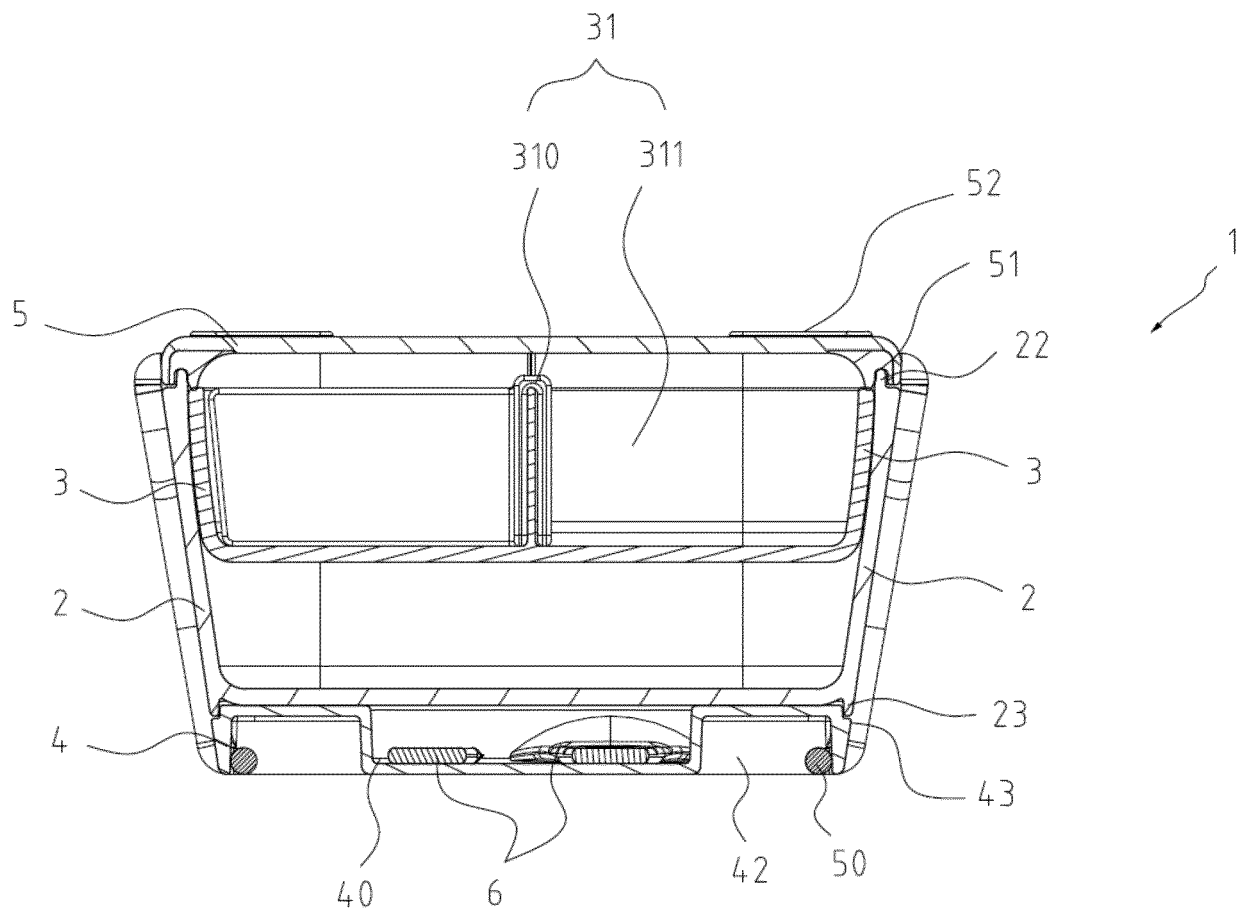


FIG. 4



EUROPEAN SEARCH REPORT

Application Number
EP 18 16 4774

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The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 13 July 2018	Examiner Van Bastelaere, Tiny
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

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