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(54) **CONTAINER**

(57) A container includes a main body (1) and a cover unit (3). The main body (1) includes a bottom wall (11), a surrounding wall (12) surrounding and extending upwardly from the bottom wall (11), and a protrusion edge (13) extending downwardly from the bottom wall (11). The bottom wall (11) and the surrounding wall (12) cooperatively define an accommodation space (16). The bottom wall (11) and the protrusion edge (13) cooperatively define a limitation groove (131). The cover unit (3) is separably disposed on the main body (1) to close the accommodation space (16), and includes a cover body (31), a protrusion wall (32) extending from and surrounding the cover body (31), and cooperating with the cover body (31) to define a recess (324), and a plurality of protrusion blocks (34) located in the recess (324) and extending upwardly from the cover body (31) in a tapered manner.

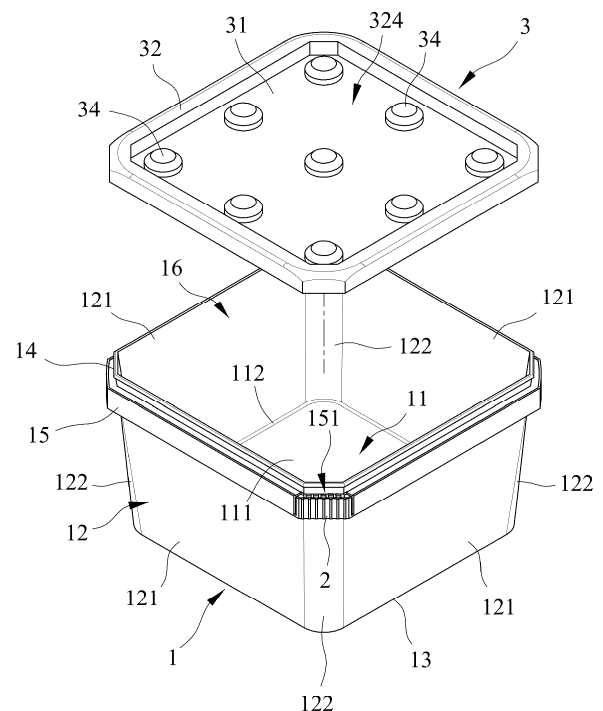


FIG. 2

Description

[0001] The disclosure relates to a container, and more particularly to a container that is adapted for accommodating things and that is stackable.

[0002] Referring to FIG. 1, a conventional container 9 includes a box body 91 defining an inner space 911 that opens upwardly, and a cover 92 detachably disposed on the box body 91 to close the inner space 911. The box body 91 includes a bottom wall 912, and four upright walls 913 connected to a periphery of the bottom wall 912. For any two of the upright walls 913 that are adjacent to each other, the upright walls 913 are connected to each other at a right angle. When the cover 92 is detached from the box body 91, the inner space 911 is opened to allow things such as food to be placed therein, and after the things are placed into the inner space 911, the cover 92 is disposed on the box body 91 to close the inner space 911, achieving the storage effect.

[0003] When two conventional containers 9 are stacked together to save space, an upper one of the conventional containers 9 is disposed on a lower one of the conventional containers 9; that is, the bottom wall 912 of the box body 91 of the upper one of the conventional containers 9 is disposed on a top surface of the cover 92 of the lower one of the conventional containers 9. Being flat, the bottom wall 912 and the top surface of the cover 92 can only be limited by friction, and when subjected to horizontal force, the conventional containers 9 may be easily displaced, even causing the upper one of the conventional containers 9 to fall off. In addition, the user cannot confirm through the hand feel whether the conventional containers 9 are properly stacked. There is still room for improvement.

[0004] According to an aspect of the disclosure, there is provided a container according to claim 1.

[0005] Other features and advantages of the disclosure will become apparent in the following detailed description of the embodiment(s) with reference to the accompanying drawings. It is noted that various features may not be drawn to scale.

FIG. 1 is an exploded perspective view of a conventional container.

FIG. 2 is a partly exploded perspective view of an embodiment of a container according to the present disclosure.

FIG. 3 is a partly exploded perspective view of the embodiment viewed from another angle.

FIG. 4 is a sectional view of a main body of the embodiment.

FIG. 5 is a fragmentary schematic view of the embodiment illustrating a gap being exposed after an anti-opening member in FIG. 2 is removed.

FIG. 6 is a perspective view of a cover unit of the embodiment.

FIG. 7 is a bottom perspective view of the cover unit.

FIG. 8 is a perspective view of the embodiment.

FIG. 9 is a perspective view of the embodiment, illustrating the main body being stacked on the cover unit.

FIG. 10 is a perspective view, illustrating the embodiment being stacked on another container that is identical to the embodiment.

FIG. 11 is a perspective view, illustrating a modification of the embodiment being stacked on another container that is different from the embodiment in size.

FIG. 12 is a partly exploded perspective view of another modification of the embodiment with a handle.

[0006] Before the disclosure is described in greater detail, it should be noted that where considered appropriate, reference numerals or terminal portions of reference numerals have been repeated among the figures to indicate corresponding or analogous elements, which may optionally have similar characteristics.

[0007] It should be noted herein that for clarity of description, spatially relative terms such as "top," "bottom," "upper," "lower," "on," "above," "over," "downwardly," "upwardly" and the like may be used throughout the disclosure while making reference to the features as illustrated in the drawings. The features may be oriented differently (e.g., rotated 90 degrees or at other orientations) and the spatially relative terms used herein may be interpreted accordingly.

[0008] Referring to FIGS. 2, 3, and 4, an embodiment of a container according to the present disclosure includes a main body 1, an anti-opening member 2 separably connected to the main body 1, and a cover unit 3 separably disposed on the main body 1. The main body 1 includes a bottom wall 11, a surrounding wall 12 that surrounds and extends upwardly from a periphery of the bottom wall 11, a protrusion edge 13 that extends downwardly from the bottom wall 11, an engagement portion 14 that extends outwardly from a top edge of the surrounding wall 12 and that surrounds the surrounding wall 12, and a protrusion seat 15 that extends from and is disposed around an outer surface of the surrounding wall 12, that is located under the engagement portion 14, and that defines a gap 151. Specifically, in one embodiment, the protrusion seat 15 is configured to not completely surround the surrounding wall 12 so as to define the gap 15. The bottom wall 11 and the surrounding wall 12 cooperatively define an accommodation space 16 that opens upwardly and that is closed by the cover unit 3. The bottom wall 11 has a plate wall portion 111, and a fillet corner portion 112 that surrounds the plate wall portion 111 and that is connected between the plate wall portion 111 and the surrounding wall 12. The surrounding wall 12 has four side wall portions 121 and four curved connection wall portions 122. The side wall portions 121 are connected to each other and are arranged in pairs, and in each pair, the side wall portions 121 face and are spaced apart from each other. The curved connection wall por-

tions 122 each are connected between two adjacent ones of the side wall portions 121. The fillet corner portion 112 interconnects the plate wall portion 111 and the surrounding wall 12 in a rounded manner, and each of the curved connection wall portions 122 interconnects the two adjacent ones of the side wall portions 121 in a rounded manner. The abovementioned rounded corner connection makes the container easy to be manufactured to thereby improve production efficiency, and compared to the right angle connection of the prior art, the rounded corner connection of the disclosure is beneficial for cleaning and does not easily leave stains since deep and thin grooves are less likely to generate therein.

[0009] Referring to FIGS. 2, 3, and 5, the protrusion edge 13 and the bottom wall 11 (specifically, the plate wall portion 111) cooperatively define a limitation groove 131 (see FIG. 3) that opens downwardly and that is located under the accommodation space 16. The protrusion edge 13 is adapted for allowing the container to be put on a flat surface (e.g., of a table) and may increase the weight the present disclosure can carry. The anti-opening member 2 is separably disposed in the gap 151; specifically, the anti-opening member 2 is separably connected to the surrounding wall 12 and the protrusion seat 15, so that a user may separate the anti-opening member 2 from the surrounding wall 12 and the protrusion seat 15 through peeling or repeatedly bending in an irreversible manner (that is, after being detached from the surrounding wall 12 and the protrusion seat 15, the anti-opening member 2 cannot be put back therewith anymore), and thus the gap 151 is no longer blocked by the anti-opening member 2 and is exposed.

[0010] Referring to FIGS. 3, 6, and 7, the cover unit 3 includes a cover body 31, a protrusion wall 32 that extends from and surrounds a periphery of the cover body 31, and that cooperates with the cover body 31 to define a recess 324 opening upwardly, a plurality of protrusion ribs 33 that extend from the protrusion wall 32, and a plurality of protrusion blocks 34 that are located in the recess 324, that extend upwardly from the cover body 31 in a tapered manner, that are arranged in an array, and that are spaced apart from each other.

[0011] The protrusion wall 32 of the cover unit 3 has an inner wall portion 321 that extends upwardly from the periphery of the cover body 31, a top wall portion 322 that extends outwardly from a top edge of the inner wall portion 321, and an outer wall portion 323 that extends downwardly from a periphery of the top wall portion 322, and that surrounds the inner wall portion 321. The inner wall portion 321 cooperates with the cover body 31 to define the recess 324. The protrusion wall 32 is formed with a groove 325; specifically, the inner wall portion 321, the top wall portion 322, and the outer wall portion 323 cooperatively define the groove 325 that recesses upwardly, that opens downwardly, and that surrounds the cover body 31 and the recess 324. The protrusion ribs 33 are spaced apart from each other in the groove 325; each of the protrusion ribs 33 cooperates with the protrusion

wall 32 to define an intervening space 331 therebetween. Specifically, each of the protrusion ribs 33 extends from the inner wall portion 321 toward the outer wall portion 323, and is spaced apart from the outer wall portion 323 to define the intervening space 331 therebetween. In some embodiments, a width of each of the intervening spaces 331 in a direction from the inner wall portion 321 toward the outer wall portion 323 gradually reduces from bottom to top. Each of the protrusion blocks 34 has a cylindrical body portion 341 that extends upwardly from the cover body 31, and a round body portion 342 that extends upwardly from the cylindrical body portion 341, and that tapers gradually from bottom to top.

[0012] Referring to FIGS. 2, 3, and 8, in practice, after putting things such as food into the accommodation space 16, the user places and presses the cover unit 3 onto the main body 1; at the same time, the engagement portion 14 of the main body 1 is extending into the intervening spaces 331 (see FIG. 7) to engage the protrusion ribs 33 and the outer wall portion 323 of the protrusion wall 32. The outer wall portion 323 abuts against the protrusion seat 15, along with the anti-opening member 2, as the engagement portion 14 engages the protrusion ribs 33 and the outer wall portion 323, so that the cover unit 3 closes the accommodation space 16 to achieve the sealing effect. In addition, the protrusion seat 15 and the anti-opening member 2 block a bottom portion of the protrusion wall 32; thus, the user cannot find an appropriate position on the cover unit 3 to apply an upward force to thereby remove the cover unit 3 from the main body 1. When the user intends to open the container, the anti-opening member 2 has to be first removed to expose the gap 151, so that the user may apply an upward force to an exposed part of the bottom portion of the protrusion wall 32 (the exposed part is exposed from the gap 151) to open the container. Once the upward force is greater than the friction between the engagement portion 14 and the protrusion ribs 33 and the outer wall portion 323, the user may remove the cover unit 3 from the main body 1 to open the container. Through this design, the user may visually determine whether container has been opened by an unauthorized person through the existence of the anti-opening member 2.

[0013] Referring to FIGS. 3, 6, and 9, after the cover unit 3 is separated from the main body 1, the main body 1 can be stacked on the cover unit 3. At this time, the protrusion edge 13 of the main body 1 is located in the recess 324 of the cover unit 3, and the protrusion blocks 34 extend into the limitation groove 131 (see FIG. 3). In combination with the arrangement of the protrusion blocks 34 in an array, the protrusion edge 13 is disposed around and engages those of the protrusion blocks 34 that are located at an outermost side of the array. Taking the embodiments in FIGS. 6 and 9 as examples, the protrusion edge 13 is disposed around and engages the eight protrusion blocks 34 located at the outermost side of the array, except for the middle one of the protrusion blocks 34. In this way, the cover unit 3 may be

prevented from being casually placed and lost, and the main body 1 is thereby limited to be stable on the cover unit 3.

[0014] Referring to FIG. 3, FIG. 6, and FIG. 10, the user may stack a plurality of containers of the disclosure together in a similar manner. In the embodiment of FIG. 10, the protrusion edge 13 of the upper container (A) is located in the recess 324 of the lower container (B), the protrusion blocks 34 of the lower container (B) extend into the limitation groove 131 of the upper container (A), and the protrusion edge 13 of the upper container (A) is disposed around and engages a portion of the protrusion blocks 34 of the lower container (B). Through the above-mentioned stacking manner, multiple containers may be stably stacked, and may withstand a certain degree of force in a horizontal direction, which improves the stability and balance of the stacked containers. Furthermore, the tapered shape of the protrusion blocks 34 may guide the protrusion edge 13 of the upper container (A) when the containers (A, B) are being stacked, so that it is easier for the user to position the protrusion edge 13 of the upper container (A) into the recess 324 of the lower container (B). At the same time, an inner surface of the protrusion edge 13 abuts against surfaces of the portion of the protrusion blocks 34, and the protrusion edge 13 is located between the protrusion wall 32 and the portion of the protrusion blocks 34. Accordingly, a mistake-proofing effect is achieved, and the user may confirm through the hand feel whether the containers (A, B) are properly stacked.

[0015] Referring to FIG. 3, FIG. 6, and FIG. 11, modifications of the container in this disclosure may be designed to have different sizes according to requirements, and in the modifications illustrated in FIG. 11, the smaller container (C) may be stacked on the larger container (D); that is, the protrusion edge 13 of the smaller container (C) is disposed around and engages a portion of the protrusion blocks 34 of the larger container (D). In this way, a plurality of smaller containers (C) may be stacked on the larger container (D). This allows the containers of different sizes to be used together, thereby increasing versatility and facilitating modularization. Referring to FIG. 12, another modification of the container may further include a handle 4 that has two ends and that is pivotally connected to the main body 1 (specifically, the protrusion seat 15) with the ends, and the handle 4 may be hung on a hook to save floor space, or may be more convenient for the user to carry the container.

[0016] In summary, the present disclosure allows a plurality of containers to be stably stacked together, and the stacked containers are less likely to collapse from the slightly shaking; moreover, containers with different sizes may be used together according to requirements. The tapered protrusion blocks 34 have mistake-proofing and guiding effects. In addition, the design of the anti-opening member 2 facilitates identification of whether the container has been opened, so the object of the present disclosure may indeed be achieved.

[0017] In the description above, for the purposes of explanation, numerous specific details have been set forth in order to provide a thorough understanding of the embodiment(s). It will be apparent, however, to one skilled in the art, that one or more other embodiments may be practiced without some of these specific details. It should also be appreciated that reference throughout this specification to "one embodiment," "an embodiment," "an embodiment with an indication of an ordinal number and so forth" means that a particular feature, structure, or characteristic may be included in the practice of the disclosure. It should be further appreciated that in the description, various features are sometimes grouped together in a single embodiment, figure, or description thereof for the purpose of streamlining the disclosure and aiding in the understanding of various inventive aspects; such does not mean that every one of these features needs to be practiced with the presence of all the other features. In other words, in any described embodiment, when implementation of one or more features or specific details does not affect implementation of another one or more features or specific details, said one or more features may be singled out and practiced alone without said another one or more features or specific details. It should be further noted that one or more features or specific details from one embodiment may be practiced together with one or more features or specific details from another embodiment, where appropriate, in the practice of the disclosure.

Claims

1. A container, characterized by:

a main body (1) including a bottom wall (11), a surrounding wall (12) that surrounds and extends upwardly from a periphery of said bottom wall (11), and a protrusion edge (13) that extends downwardly from said bottom wall (11), said bottom wall (11) and said surrounding wall (12) cooperatively defining an accommodation space (16) that opens upwardly, said bottom wall (11) and said protrusion edge (13) cooperatively defining a limitation groove (131) that opens downwardly and that is located under said accommodation space (16); and
a cover unit (3) separably disposed on said main body (1) to close said accommodation space (16), and including a cover body (31), a protrusion wall (32) that extends from and surrounds a periphery of said cover body (31), and that cooperates with said cover body (31) to define a recess (324) opening upwardly, and a plurality of protrusion blocks (34) that are located in said recess (324) and that extend upwardly from said cover body (31) in a tapered manner.

2. The container as claimed in claim 1, wherein

said surrounding wall (12) of said main body (1) has four side wall portions (121) and four curved connection wall portions (122),
 said side wall portions (121) are connected to each other, and are arranged in pairs, and in each of said pairs, said side wall portions (121) face and are spaced apart from each other, and said curved connection wall portions (122) each are connected between two adjacent ones of said side wall portions (121).

3. The container as claimed in any one of claims 1 and 2, wherein said bottom wall (11) of said main body (1) has a plate wall portion (111), and a fillet corner portion (112) that surrounds said plate wall portion (111) and that is connected between said plate wall portion (111) and said surrounding wall (12).

4. The container as claimed in any one of claims 1 to 3, wherein

said main body (1) further includes an engagement portion (14) that extends outwardly from a top edge of said surrounding wall (12) and that surrounds said surrounding wall (12),
 said protrusion wall (32) of said cover unit (3) is formed with a groove (325) that recesses upwardly, that opens downwardly and that surrounds said cover body (31), and
 said cover unit (3) further includes a plurality of protrusion ribs (33) that extend from said protrusion wall (32), and that are spaced apart from each other in said groove (325), each of said plurality of protrusion ribs (33) cooperating with said protrusion wall (32) to define an intervening space (331) therebetween, said engagement portion (14) extending into said intervening spaces (331) that are defined by said plurality of protrusion ribs (33) and said protrusion wall (32) and engaging said plurality of protrusion ribs (33) and said protrusion wall (32).

5. The container as claimed in claim 4, wherein

said protrusion wall (32) of said cover unit (3) has an inner wall portion (321) that extends upwardly from said periphery of said cover body (31), a top wall portion (322) that extends outwardly from said inner wall portion (321), and an outer wall portion (323) that extends downwardly from a periphery of said top wall portion (322), and that surrounds said inner wall portion (321), said inner wall portion (321) cooperating with said top wall portion (322) and said outer wall portion (323) to define said groove (325), and each of said plurality of protrusion ribs (33) ex-

tends from said inner wall portion (321) toward said outer wall portion (323), and is spaced apart from said outer wall portion (323) to define said intervening space (331) therebetween.

6. The container as claimed in claim 5, wherein

said main body (1) further includes a protrusion seat (15) that extends from and is disposed around an outer surface of said surrounding wall (12), that is located under said engagement portion (14), and that defines a gap (151), said container further comprising an anti-opening member (2) that is separably disposed in said gap (151) of said main body (1), said protrusion seat (15) and said anti-opening member (2) blocking a bottom portion of said protrusion wall (32) of said cover unit (3), and said anti-opening member (2) is separable to expose said gap (151).

7. The container as claimed in any one of claims 1 to 6, wherein each of said plurality of protrusion blocks (34) of said cover unit (3) has a cylindrical body portion (341) that extends upwardly from said cover body (31), and a round body portion (342) that extends upwardly from said cylindrical body portion (341), and that tapers gradually from bottom to top.

8. The container as claimed in any one of claims 1 to 7, wherein after said cover unit (3) is separated from said main body (1), said main body (1) can be stacked on said cover unit (3), and said protrusion edge (13) of said main body (1) is disposed around and engages at least a portion of said plurality of protrusion blocks (34).

9. The container as claimed in claim 8, wherein said protrusion edge (13) is located in said recess (324), and said plurality of protrusion blocks (34) extend into said limitation groove (131).

10. The container as claimed in any one of claims 1 to 9, further comprising a handle (4) that has two ends and that is pivotally connected to said main body (1) with said ends.

11. The container as claimed in any one of claims 1 to 10, adapted to be stacked with another container, the another container including a cover unit (3) that defines a recess (324) and that has a plurality of protrusion blocks (34) located in the recess (324), wherein when said container is stacked on the another container, said protrusion edge (13) of said container is located in the recess (324) of the cover unit (3) of the another container, and at least a portion of the plurality of protrusion blocks (34) of the cover unit (3) of the another container extend into said

limitation groove (131) of said container.

- 12.** The container as claimed in claim 11, wherein said protrusion edge (13) of said container is disposed around and engages at least a portion of the plurality of protrusion blocks (34) of the another container.

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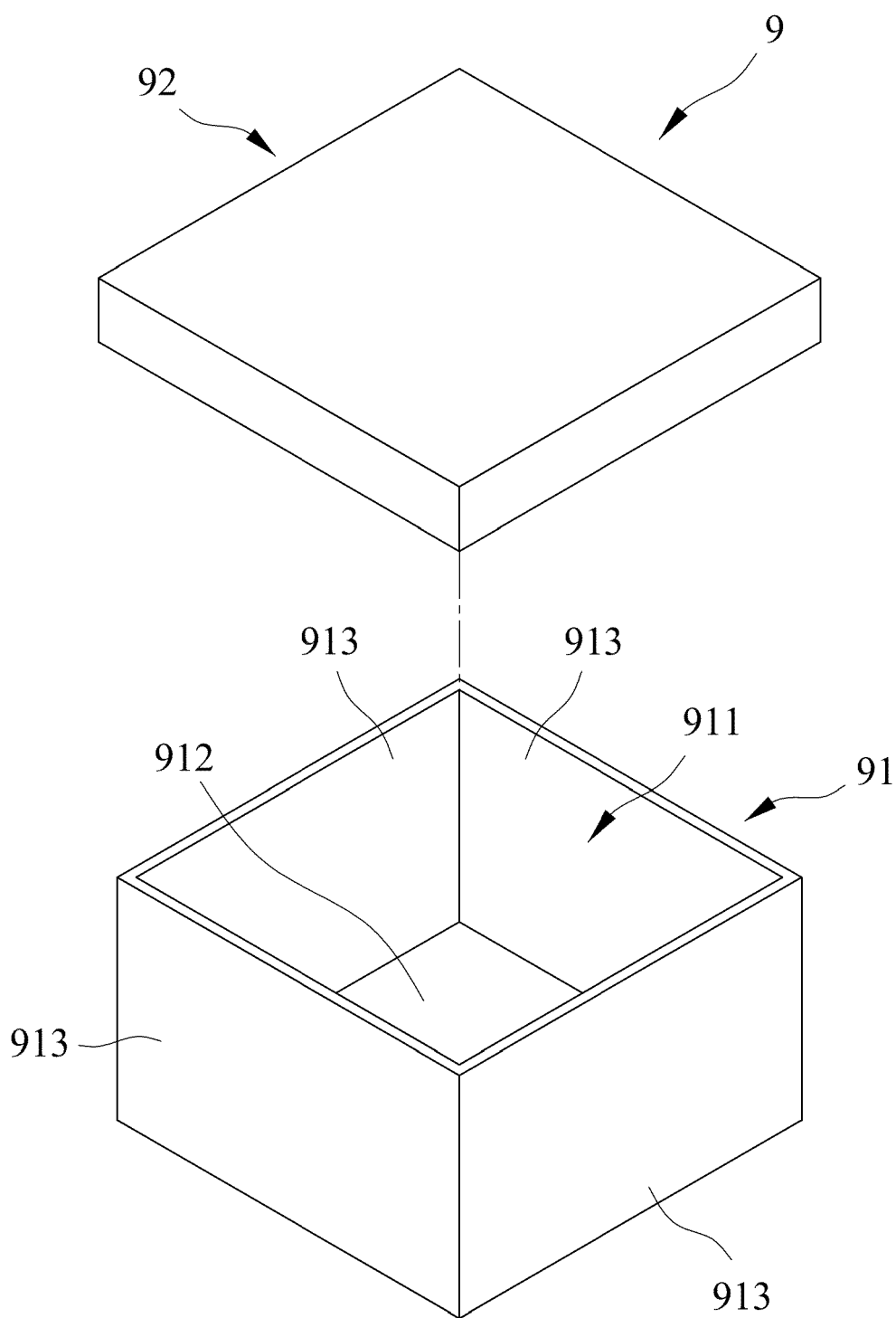


FIG. 1
PRIOR ART

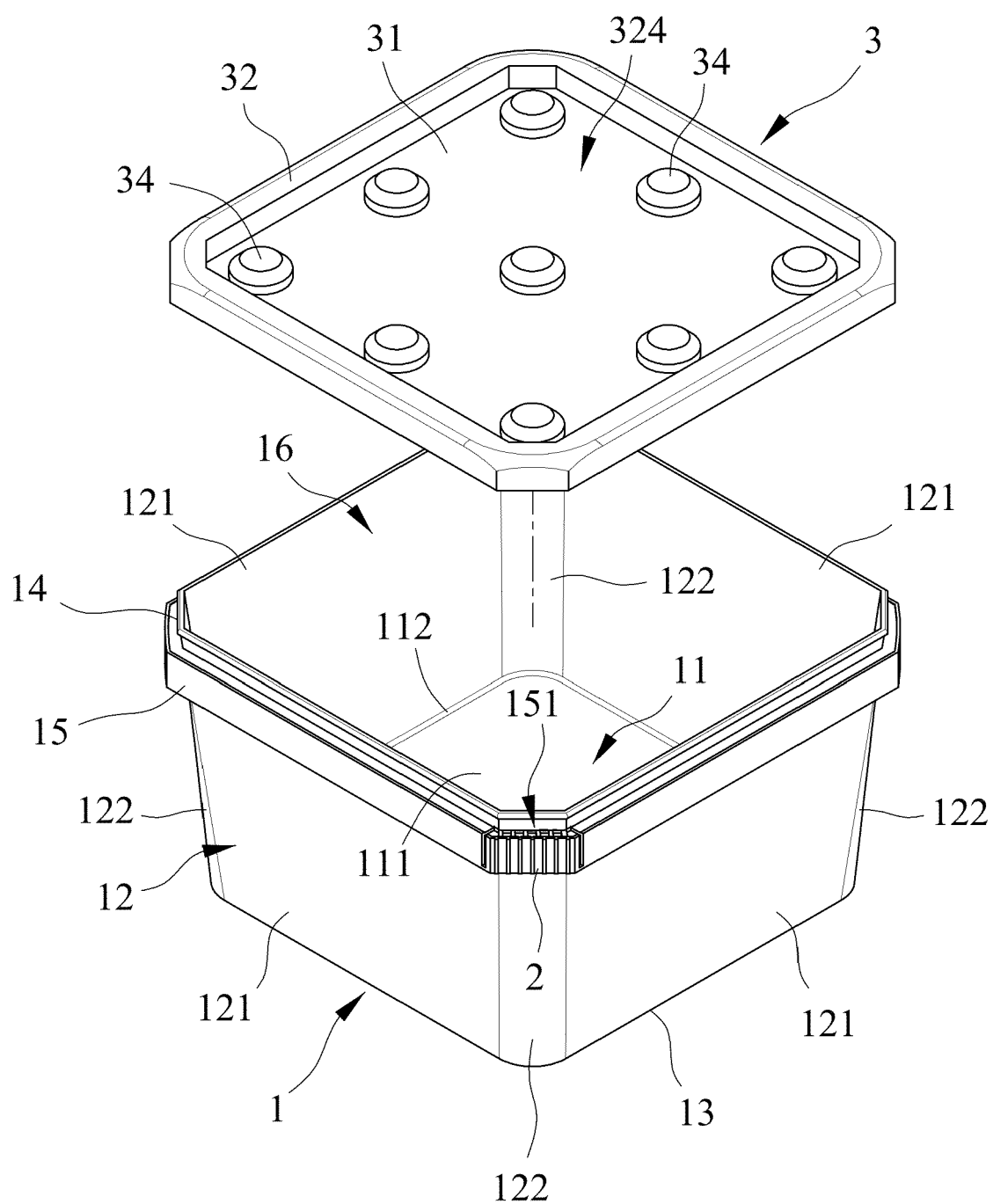


FIG. 2

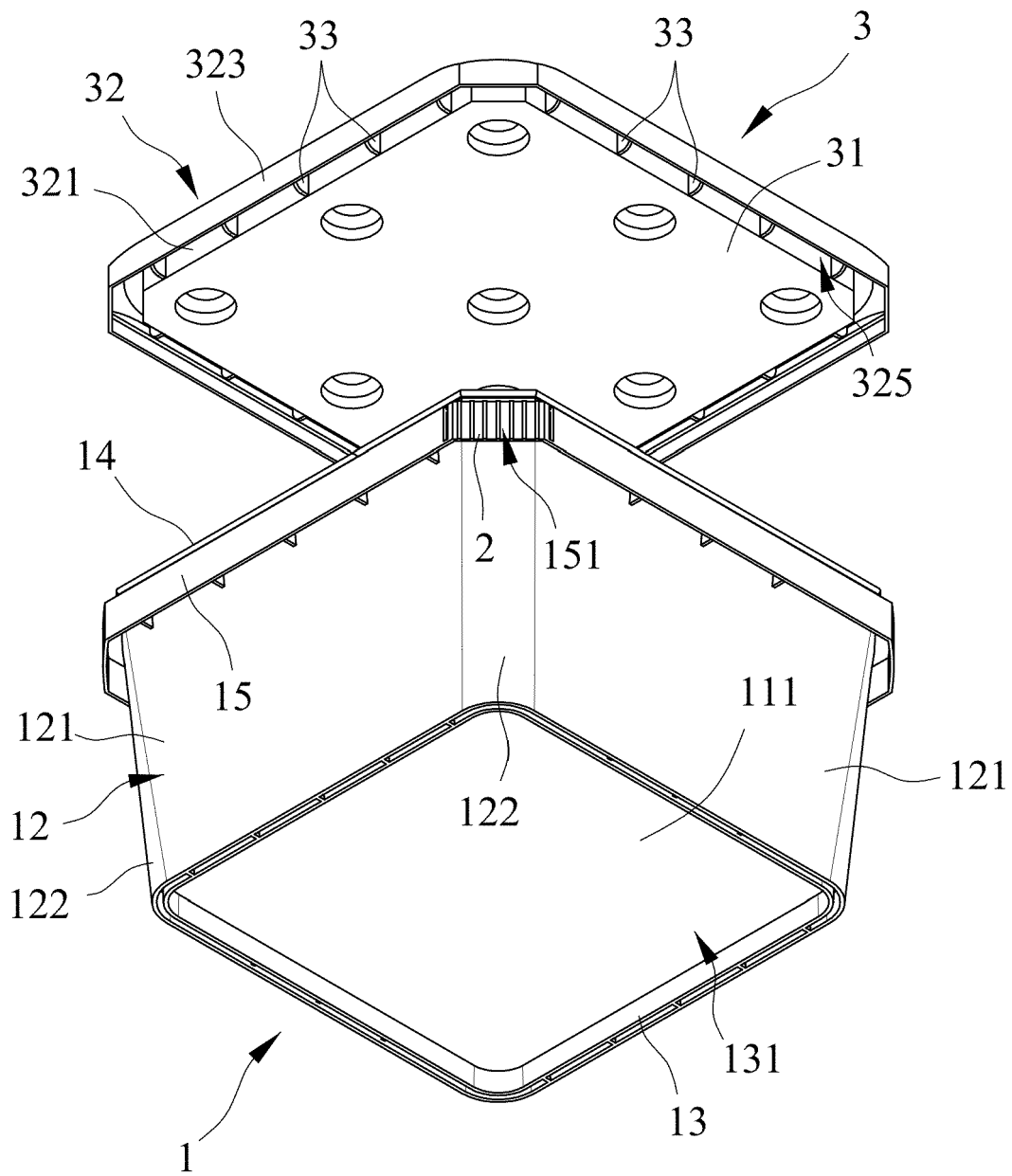


FIG. 3

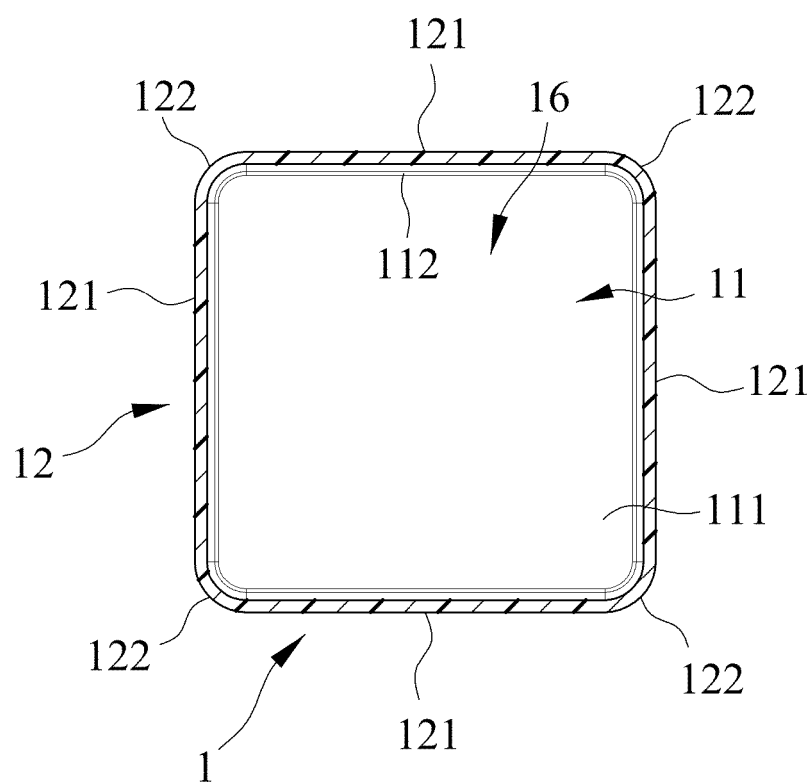


FIG. 4

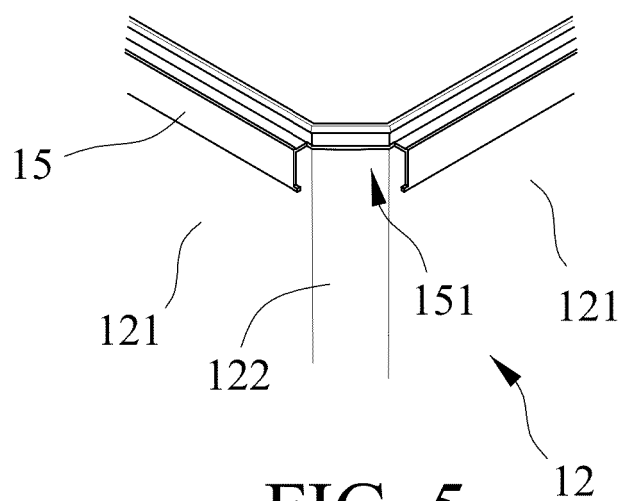


FIG. 5

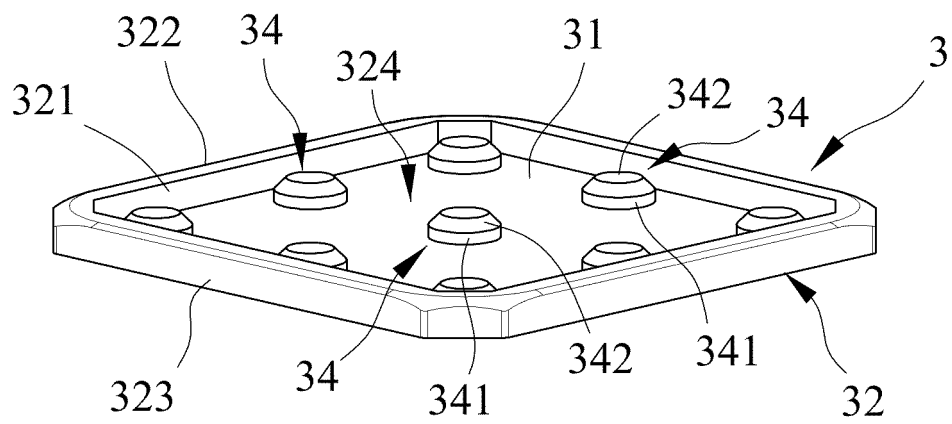


FIG. 6

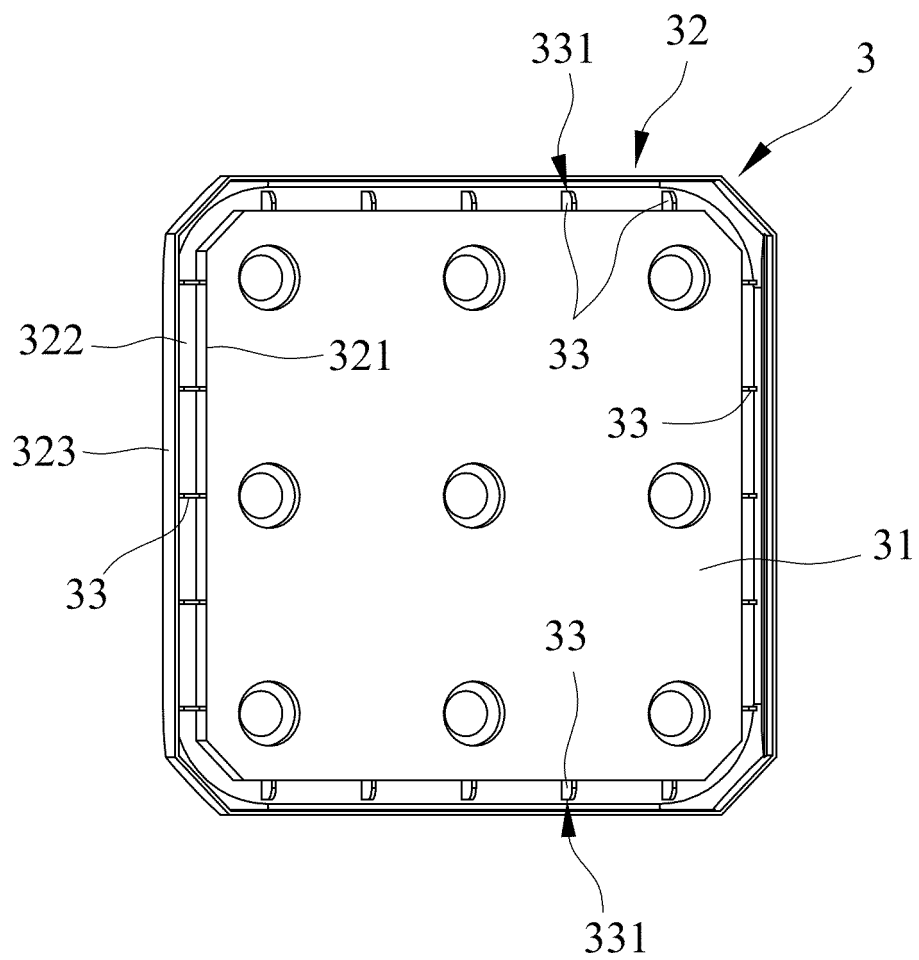


FIG. 7

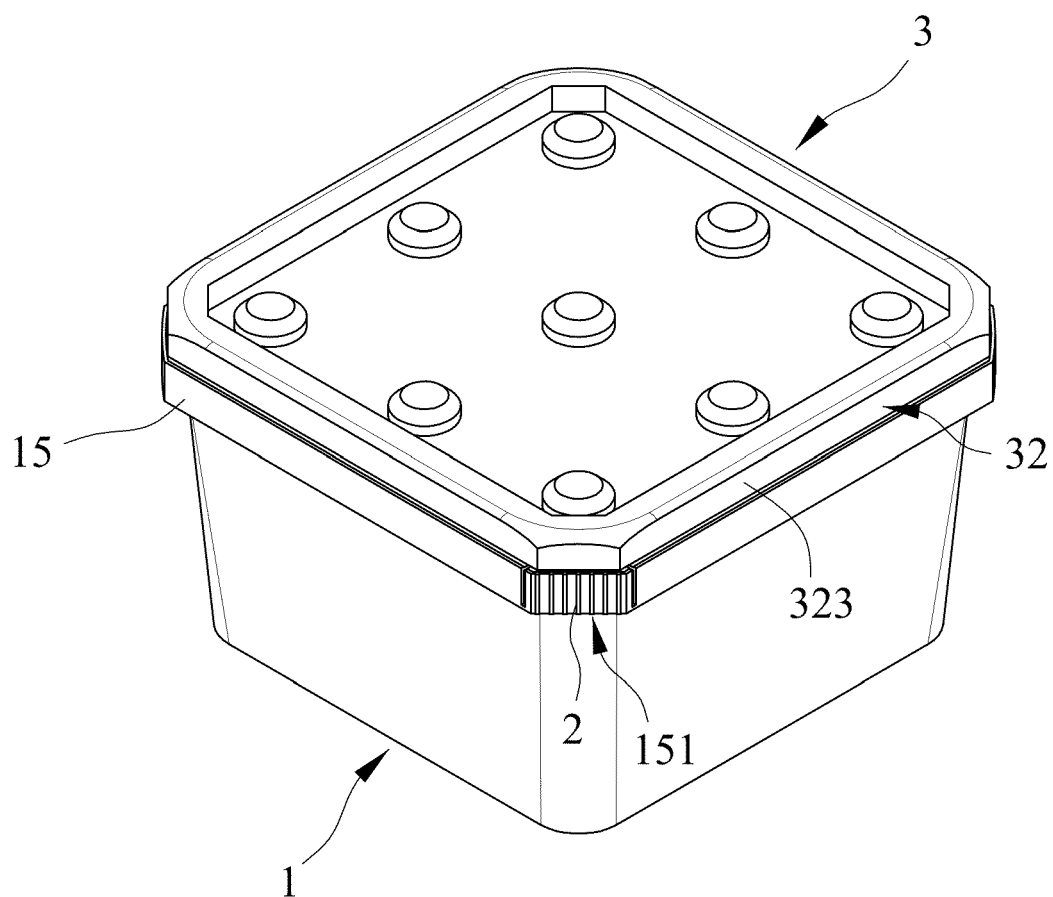


FIG. 8

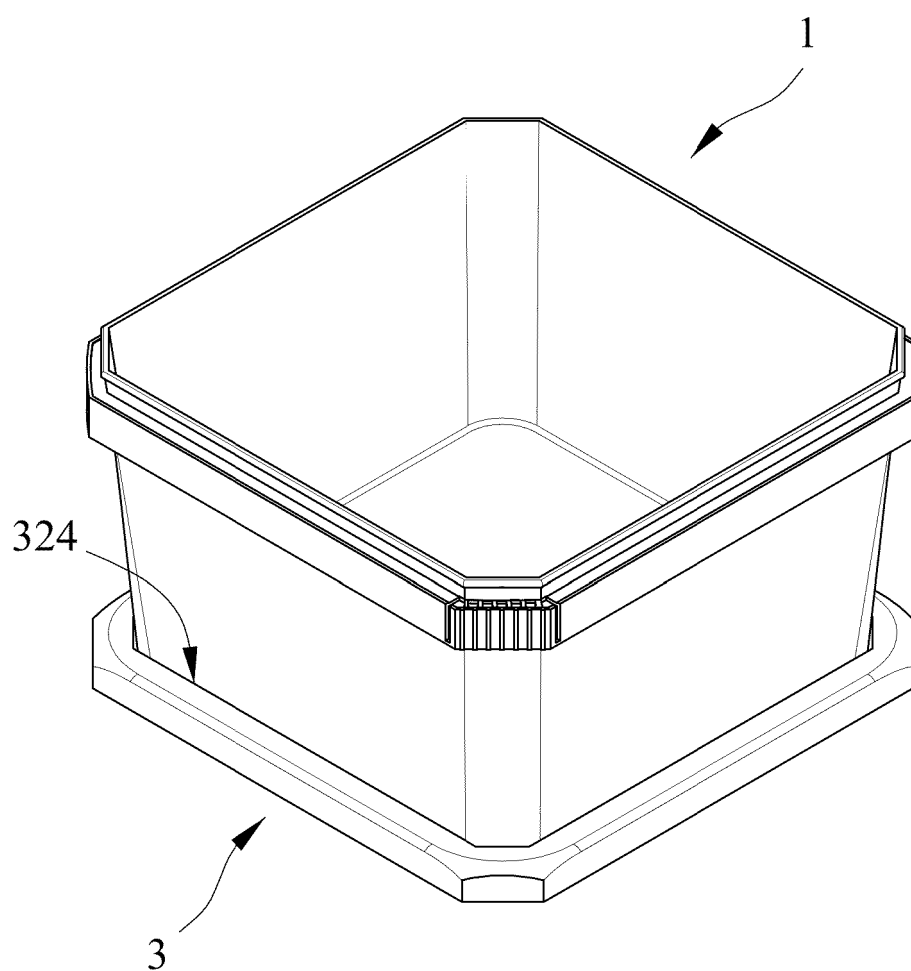


FIG. 9

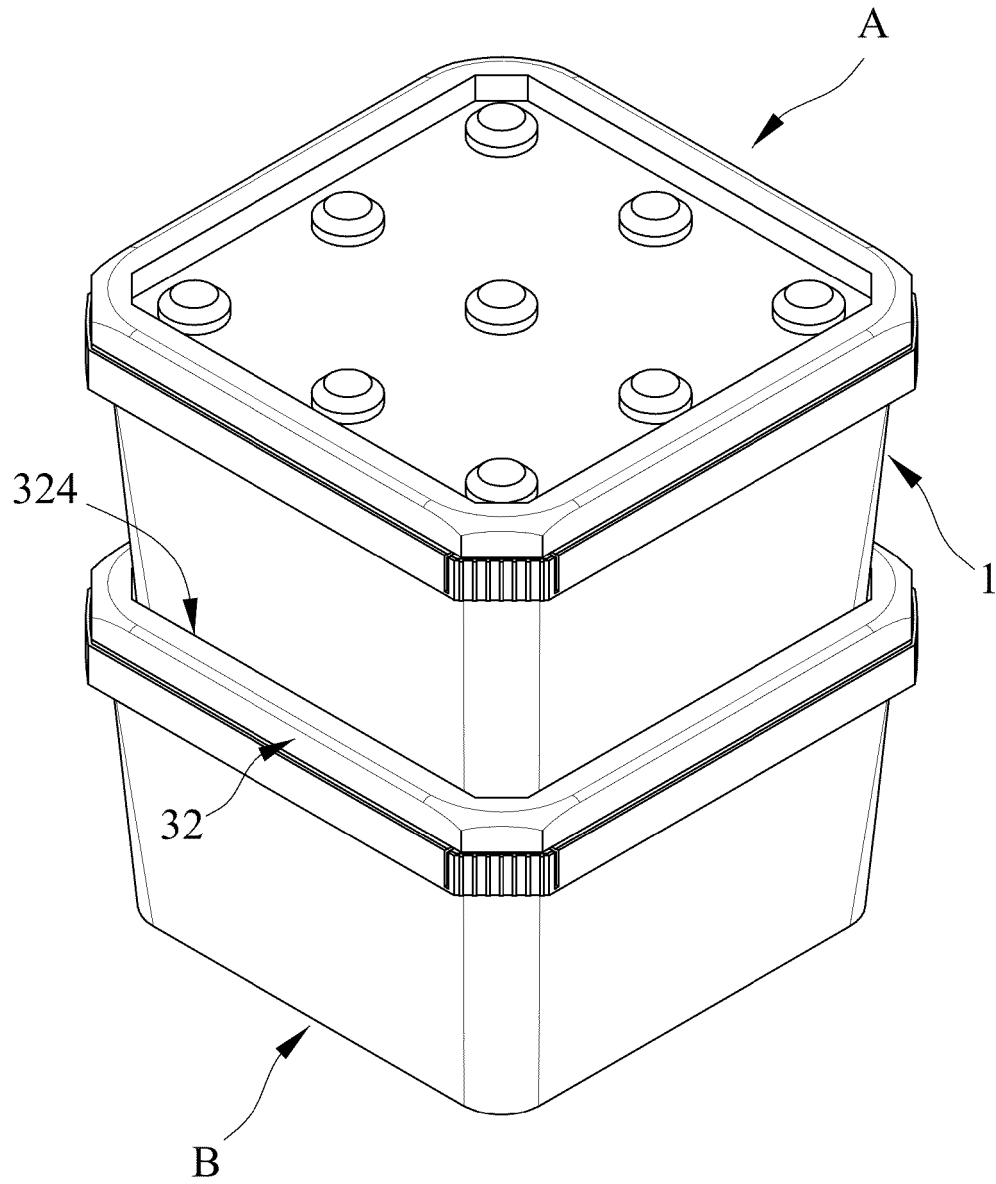


FIG. 10

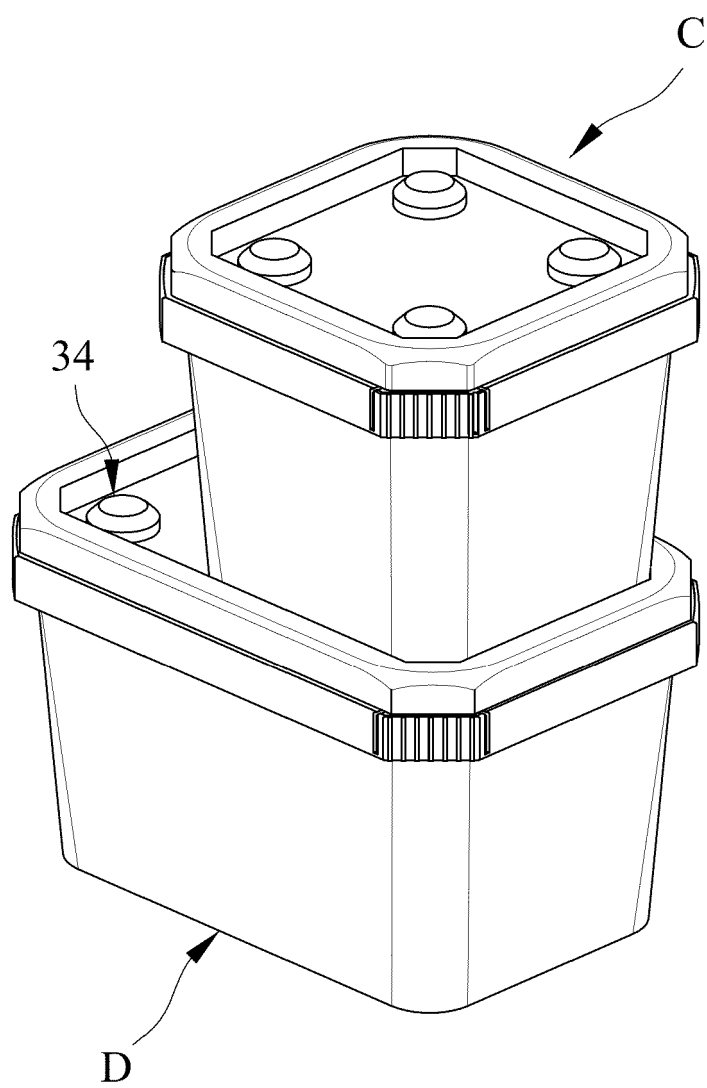


FIG. 11

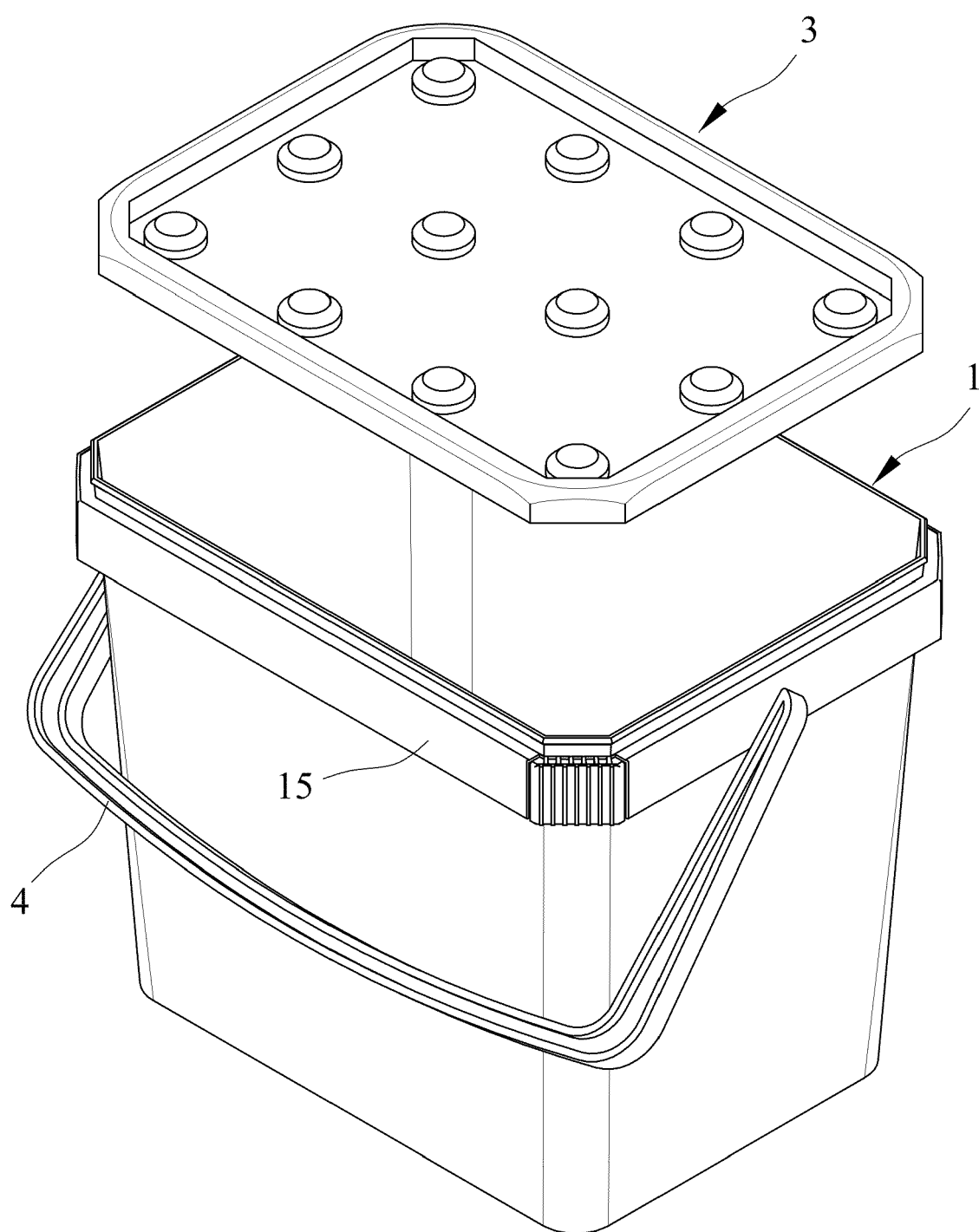


FIG. 12



EUROPEAN SEARCH REPORT

Application Number

EP 25 16 3514

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			TECHNICAL FIELDS SEARCHED (IPC)
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The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 26 June 2025	Examiner Lämmel, Gunnar
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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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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