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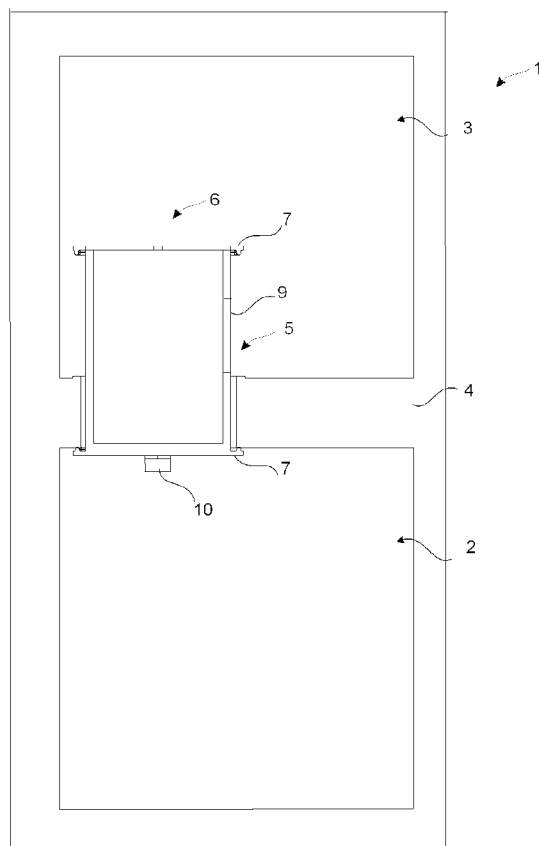
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(54) Title: A COOLING DEVICE

Figure 1



(57) Abstract: The present invention relates to a cooling device (1) that comprises a cooling compartment (2) wherein food and beverages to be cooled are emplaced, a freezer compartment (3) wherein food and beverages to be frozen are emplaced, and a partition wall (4) that isolates these two compartments (2 and 3) from each other.

WO 2009/083394 A2



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Description**A COOLING DEVICE**

- [0001] The present invention relates to a cooling device comprising a box which can be used functionally.
- [0002] Cooling devices are preferably comprised of two compartments; a cooling compartment used for storing the food, beverage items to be cooled and a freezing compartment used for items to be frozen or stored for a longer time. These compartments are isolated from each other by a partition wall and are disposed one over the other or side by side in some wardrobe type cooling devices. In cooling devices wherein the compartments are positioned one over the other, the partition wall forms the ceiling of one and the base of another.
- [0003] In the technique, space constraint arises when the freezer requirement increases since generally the freezer compartment has a smaller volume than the cooling compartment.
- [0004] In the state of the art Patent Documents No WO2007074125 and No EP1074802, cooling devices are mentioned that comprise special purpose freezer compartments. These freezer compartments are situated in the cooling compartment and quick freezing systems are developed for cooling the recently placed foods.
- [0005] The aim of the present invention is the realization of a cooling device wherein the freezer compartment and the cooling compartment volumes can be changed.
- [0006] The cooling device realized in order to attain the aim of the present invention, explicated in the first claim and the respective claims thereof, comprises at least one passage on the partition wall between the cooling compartment and the freezer compartment and at least one box that can move in the passage between the compartments, positioned in any one compartment.
- [0007] The box comprises at least one stopper on the surface facing the compartments, forming a protrusion with respect to the box.
- [0008] When the box is positioned inside the cooling compartment, the stopper situated on the side facing the freezer compartment bears against the

partition wall and when positioned in the freezer compartment, the stopper disposed on the side facing the cooling compartment bears against the partition wall.

[0009] The user can use the box in the cooling compartment space by pushing towards the cooling compartment. In this position, the stopper on the side of the box facing the freezer compartment bears against the freezer compartment surface of the partition wall, preventing the box from falling into the cooling compartment.

[0010] In an embodiment of the present invention, the box comprises air passage holes on a surface facing the freezer compartment. The refrigerant air reaches inside the box through these air passage holes. In an embodiment wherein the box is positioned in the cooling compartment, the box can be used as an additional freezer in the cooling compartment volume by means of these air passage holes.

[0011] In another embodiment of the present invention, the box comprises a cover wraparounding the surface or a shutter that closes the holes for preventing flow of air from the freezer compartment when in the cooling compartment. Thus, the box is completely isolated from the freezer compartment and used for defrosting the frozen items therein.

[0012] In an embodiment of the present invention, the box comprises a lid for loading, unloading of items.

[0013] In an embodiment of the present invention, the box is pushed towards the cooling compartment for gaining more freezing space. Since the box has air passage holes, the freezing air circulation cools it also. In this case, the formed freezer volume is equal to the total of the freezer compartment and the box. Consequently, the fruits-vegetables stored in the additional volume required particularly in the summer months are frozen to be consumed in the winter months.

[0014] In an embodiment of the present invention, the box air passage holes are covered by a lid and pushed from the freezer compartment to the cooling compartment thereby entirely isolating from the freezer compartment. Thus, the items such as food and beverages to be defrosted can be stored therein by transferring into the cooling compartment without taking out of

the cooling device. By way of this embodiment of the present invention, the frozen foods pass to the cooling compartment together with the box and isolated from the freezer compartment. Thus, the frozen foods are defrosted without taking out of the cooling device and when desired to be used can be removed from the cooling compartment.

- [0015] In another embodiment of the present invention, the box is entirely removed from the cooling compartment when brought into the freezer compartment. Thus, the box can be used as a special shelf inside the freezer compartment. For example, if items to be used in a short while are emplaced on this shelf, these frozen items can be defrosted by bringing the box into the cooling compartment.
- [0016] In the embodiment wherein the box is used in the upper compartment, a locking mechanism is designed for storing thereof without falling to the lower compartment due to effect of weight. The said locking mechanism preferably secures the lower surface of the box to the lower surface of the partition wall.
- [0017] In a preferred embodiment of the present invention, the inner surface of the partition wall containing the passage is covered by a frame so that the box is not damaged while moving inside the partition wall.
- [0018] In another embodiment of the present invention, the box comprises at least one rail thereon for moving smoothly inside the partition wall. Moreover, the cooling device comprises at least one bearing on the partition wall where through the said rail passes. Thus, the box can pass through the partition wall in a balanced manner by way of the rail and bearing.
- [0019] In another preferred embodiment of the present invention, the box comprises at least one gasket, each on the surfaces of the stoppers that bear against the partition wall. The said gasket provides insulation between the box and the passage where through the box passes. Accordingly, whether the box is used in the cooling or the freezer compartment, complete isolation from the other compartment is provided by means of the gasket.
- [0020] By means of the present invention, the need for an additional freezer

space in the cooling device is effectively provided by way of the box used selectively either as a cooler or a freezer.

- [0021] The cooling realized in order to attain the aim of the present invention is illustrated in the attached figures, where:
- [0022] Figure 1 – is the schematic view of a cooling device.
- [0023] Figure 2 – is the perspective view of the cooling device in an embodiment of the present invention wherein a box is positioned inside the cooling compartment.
- [0024] Figure 3 – is the view of detail A in Figure 2.
- [0025] Figure 4 – is the perspective view of the cooling device in an embodiment of the present invention wherein a box is positioned inside the freezing compartment.
- [0026] Figure 5 – is the schematic view of the cooling device in an embodiment of the present invention wherein a box is positioned inside the cooling compartment.
- [0027] The elements illustrated in the figures are numbered as follows:
1. Cooling device
 2. Cooling compartment
 3. Freezer compartment
 4. Partition wall
 5. Passage
 6. Box
 7. Stopper
 8. Air passage holes
 9. Lid
 10. Locking mechanism
 11. Rail
 12. Bearing
 13. Gasket
- [0028] The cooling device (1) comprises a cooling compartment (2), a freezer compartment (3), a cooling compartment (2) door, a freezer compartment (3) door and a partition wall (4) in between these two compartments (2 and 3).

- [0029] The cooling device (1) furthermore comprises
- at least one passage (5), situated on the partition wall (4), with one end opening to the cooling compartment (2), and the other end to the freezer compartment (3), connecting the two compartments (2 and 3) together, and
 - at least one box (6)
 - positioned in any one compartment (2 or 3),
 - moves in the passage (5) between the compartments (2 and 3).
- [0030] The box (6) comprises at least one stopper (7) each on the surfaces thereof facing the compartments (2 and 3), forming a protrusion with respect to the box (6).
- [0031] In the cooling device (1) of the present invention, when the box (6) is positioned inside the cooling compartment (2), the stopper (7) on the surface facing the freezer compartment (3) bears against the partition wall (4) and when the box (6) is positioned in the freezer compartment (3), the stopper (7) on the surface facing the cooling compartment (2), bears against the partition wall (4).
- [0032] The user can use the box (6) in the passage (5) in the cooling compartment (2) space by pushing towards the cooling compartment (2). In this position, the stopper (7) disposed on the surface of the box (6) facing the freezer compartment (3) bears against the freezer compartment (3) surface of the partition wall (4), preventing the box (6) from falling into the cooling compartment (2).
- [0033] When the user afterwards wants to use the box (6), formerly positioned in the cooling compartment (2), inside the freezer compartment (3), pushes the box (6) towards the freezer compartment (3). The box (6) is positioned in the freezer compartment (3) when the stopper (7) on the surface thereof facing the cooling compartment (2) bears against the surface of the partition wall (2) facing the cooling compartment (2).
- [0034] In an embodiment of the present invention, the box (6) comprises air passage holes (8) arranged on the surface on the side of the freezer compartment (3) providing air passing from the freezer compartment (3). Freezer compartment (3) conditions are provided by means of these air

passage holes (8) while the box (6) is in the cooling compartment (2) space.

- [0035] In another embodiment of the present invention, the box (6) comprises a lid that closes the air passage holes (8). Thus, the box (6), while in the cooling compartment (2), is entirely isolated from the freezer compartment (3) and used for defrosting the frozen items therein. In another embodiment of the present invention wherein the box (6) is used in the cooling compartment (2), the box (6) is isolated from the freezer compartment (3) by closing the air passage holes (8) by means of a shutter.
- [0036] Thus, the frozen items in the box (6) that will be used after a short while are defrosted in the cooling compartment (2) volume by isolating from the freezer compartment (3) by means of the cover or the shutter. Accordingly, the foods can be accessed from within the space of the cooling compartment (2), without opening the door of the freezer compartment (3).
- [0037] In another embodiment of the present invention, the box (6) is used inside the freezer compartment (3) as a special compartment without closing the air passage holes (8). The box (6) is entirely isolated from the cooling compartment (2) since the surface thereof facing the cooling compartment (2) is closed.
- [0038] In the preferred embodiment of the present invention, the box (6) comprises at least one lid (9) for accessing inside the box (6). The lid (9) can be opened in the compartment (2 or 3) wherein the box (6) is positioned. Thus, the items can be loaded or unloaded through the lid (9) while the box (6) is in the freezer compartment (3) or the cooling compartment (2).
- [0039] In the preferred embodiment of the present invention, the cooling device (1) comprises at least one locking mechanism (10) for keeping the box (6) in the compartment (2 or 3) where positioned while it is in one of the compartments (2 or 3). The said locking mechanism (10) is disposed on the inner surface of the cooling device (1) wall, preferably close to the partition wall (4) or on the partition wall (4). The box (6), when positioned in a compartment (2 or 3), is secured from the surface thereof bearing

against the partition wall (4) in the other compartment (3 or 2) to the cooling device (1) inner wall or to the partition wall (4). The locking mechanism (10) is opened when the box (6) is to be moved to the other compartment (3 or 2).

- [0040] In another embodiment of the present invention, the cooling device (1) comprises at least one rail (11) disposed on the box (6) and at least one bearing (12) situated on the partition wall (4) where through the rail (11) passes. Thus, the box (6) can move in a balanced manner inside the partition wall (4).
- [0041] In yet another embodiment of the present invention, the cooling device (1) comprises at least two gaskets (13) that provides air tightness between the cooling compartment (2) and the freezer compartment (3), secured on the stoppers (7) situated on the surfaces of the box (6) facing the compartments (2 and 3). The gasket (13) secured on the surface of the stopper (7) bearing against the partition wall (4) and facing the freezer compartment (3), provides air tightness between the freezer compartment (3) and the box (6) while in the cooling compartment (2). The gasket (13) secured on the surface of the stopper (7) bearing against the partition wall (4) and facing the cooling compartment (2) provides air tightness between the cooling compartment (2) and the box (6) while in the freezer compartment (3).
- [0042] In cooling devices (1) wherein the cooling compartment (2) and the freezer compartment (3) are positioned one above the other and when items are desired to be supported on the surface of the box (6) having air passage holes (8), the items should not cover the air passage holes (8). Therefore, the air passage holes (8) can be punctured like grater holes opening from the surface of the box (6) towards the side supporting the items. Accordingly, the items supported on the closed upper surface of the grater holes do not cover the open side surface. The air passage holes (8) open to the side surface of the punctures arranged on the surface without overlapping with the lower surfaces of the items (Figure 3).
- [0043] In another embodiment of the present invention, the items are supported on a grate placed on the surface of the box (6) containing the air passage

holes (8). The feet of the grate maintain a gap between the grate surface and the surface of the box (6) containing the air passage holes (8) so that the air passage holes (8) are not covered.

[0044] By means of the box of the present invention, the cooling device (1) is provided with the alternative of enlarging the freezer volume. On the other hand, the box (6), when inside the cooling compartment (2), serves as a chamber that can be used for defrosting frozen foods if the air passage holes (8) are closed.

Claims

1. A cooling device (1) that comprises a cooling compartment (2) wherein food and beverages to be cooled are emplaced, a freezer compartment (3) wherein food and beverages to be frozen are emplaced, a cooling compartment (2) door, a freezer compartment (3) door and a partition wall (4) disposed in between these two compartments (2 and 3) **and characterized by**
 - at least one passage (5), situated on the partition wall (4), with one end opening to the cooling compartment (2), and the other end to the freezer compartment (3), connecting the two compartments (2 and 3) together, and
 - at least one box (6)
 - positioned in any one compartment (2 or 3),
 - moves in the passage (5) between the compartments (2 and 3).
2. A cooling device (1) as in Claim 1, **characterized by** a box (6) having at least one stopper (7) on the surfaces thereof facing the compartments (2 and 3), forming a protrusion with respect to the box (6),
 - when positioned inside the cooling compartment (2), the stopper (7) on the side facing the freezer compartment (3) bears against the partition wall (4),
 - when positioned in the freezer compartment (3), the stopper (7) on the side facing the cooling compartment (2), bears against the partition wall (4).
3. A cooling device (1) as in Claim 1 and 2, **characterized by** a box (6) comprising air passage holes (8) providing air passing there into from the freezer compartment (3).
4. A cooling device (1) as in any one of the above Claims, **characterized by** a box (6) providing freezer compartment (3) conditions while in the cooling compartment (2) volume by means of the air flowing from the freezer compartment (3) through the air passage holes (8).
5. A cooling device (1) as in Claim 3, **characterized by** a box (6) used as a special freezer space while in the freezer compartment (3) volume by the air flowing from the freezer compartment (3) by means of the air passage holes (8).
6. A cooling device (1) as in Claim 3, **characterized by** a box (6) that is entirely isolated from the freezer compartment (3) while in the cooling compartment (2), by closing the air passage holes (8) with a cover and/or shutter and used for defrosting the frozen items therein.

7. A cooling device (1) as in any one of the above Claims, **characterized by** a box (6) comprising at least one lid (9) for loading the items therein.
8. A cooling device (1) as in any one of the above Claims, **characterized by** a box (6) secured by at least one locking mechanism (10) to the compartment (2 or 3) where positioned while it is in one of the compartments (2 or 3).
9. A cooling device (1) as in any one of the above Claims, **characterized by** at least one rail (11) disposed on the box (6) and at least one bearing (12) situated on the partition wall (4).
10. A cooling device (1) as in any one of the above Claims, **characterized by** a box (6) comprising gaskets (13) secured on the surfaces of the stoppers (4) bearing against the partition wall (4), for providing air tightness between the cooling compartment (2) and the freezer compartment (3).
11. A cooling device (1) as in any one of the above Claims, **characterized by** a box (6) comprising air passage holes (8) shaped like grater holes such that the items placed thereon do not close them.

Figure 1

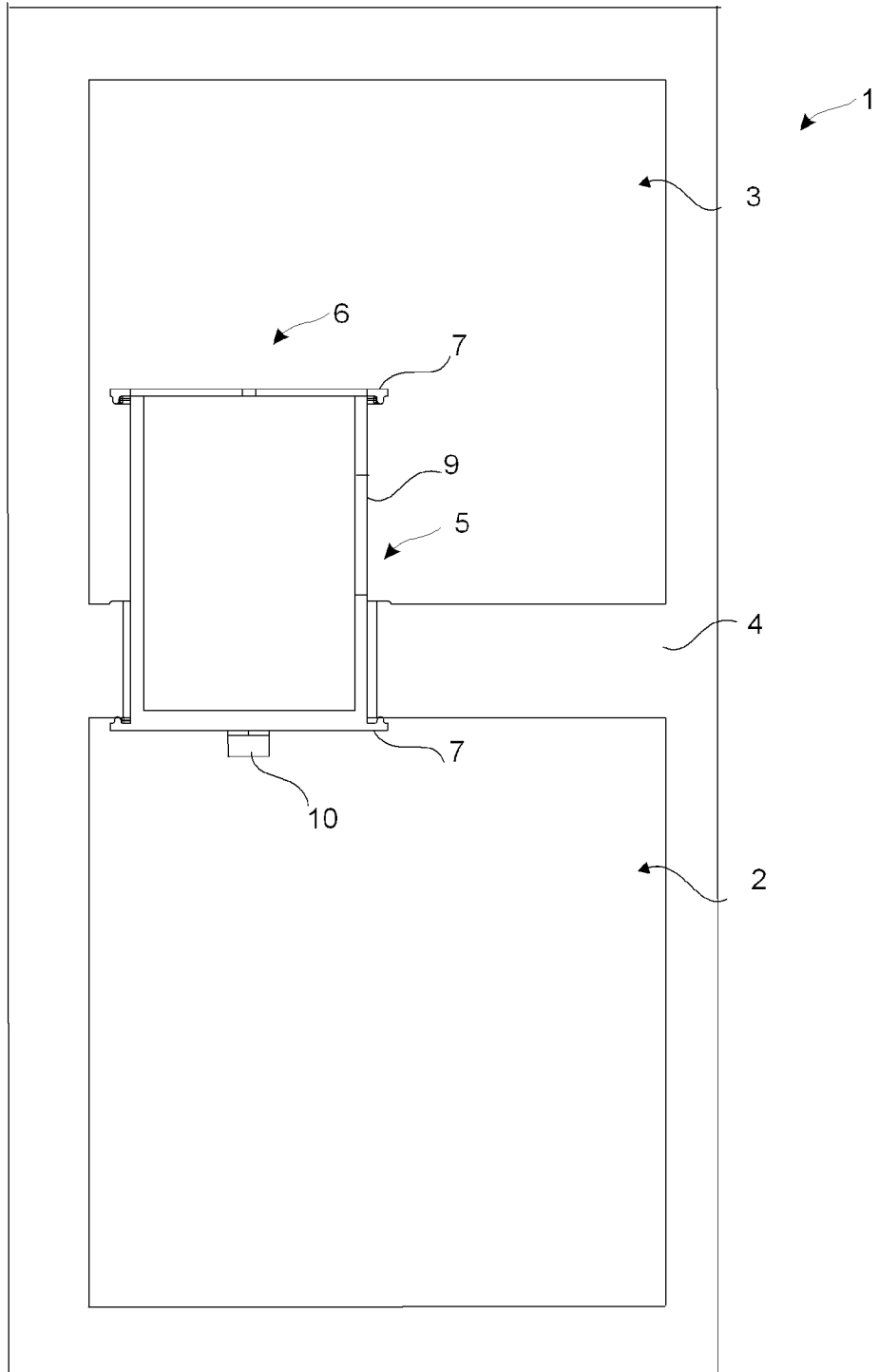


Figure 2

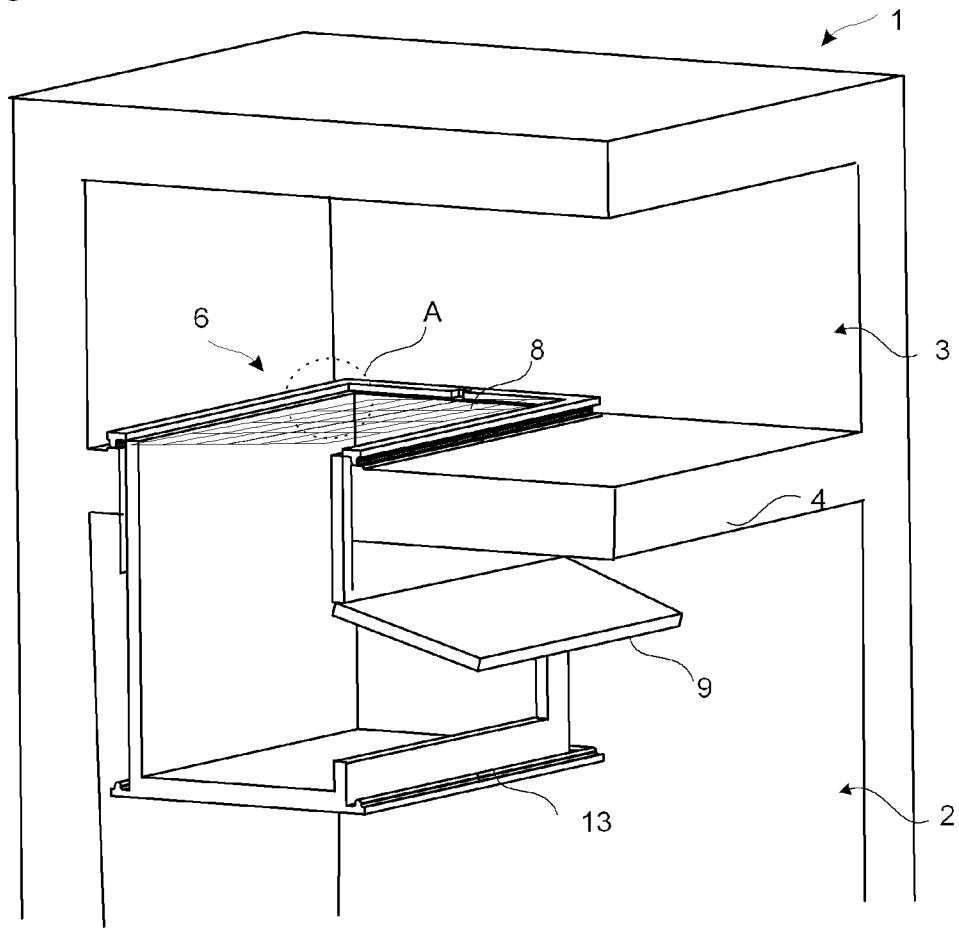


Figure 3

DETAIL A

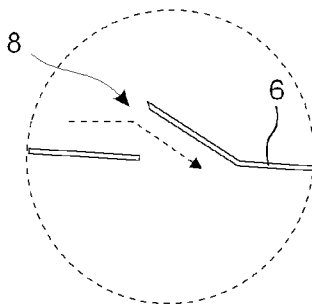


Figure 4

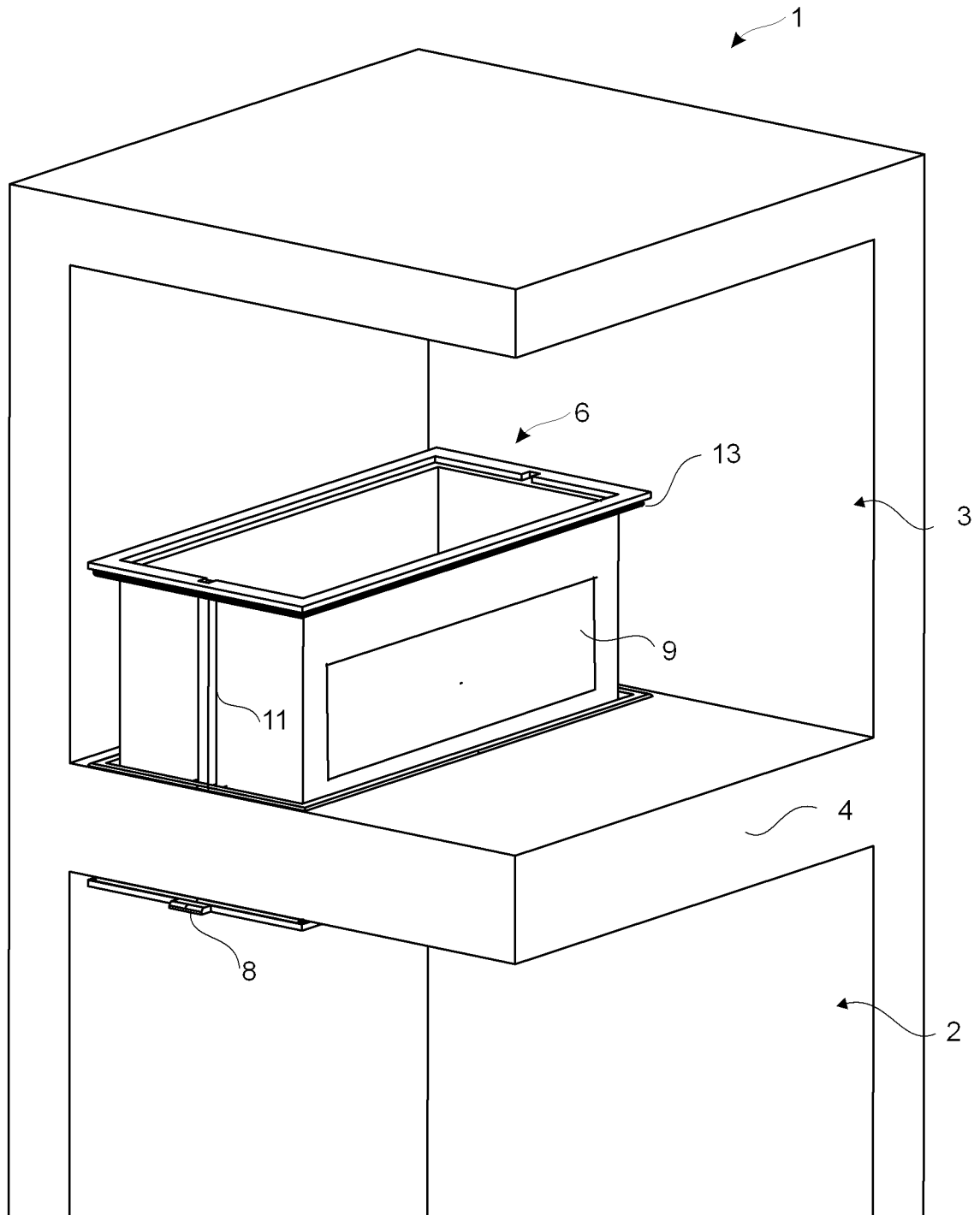


Figure 5

