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(54) **A COOLING DEVICE WHEREIN THE OPENING DIRECTION OF THE DOOR CAN BE CHANGED**

KÜHLVORRICHTUNG MIT OPTION ZUR ÖFFNUNGSRICHTUNGSÄNDERUNG DER TÜR

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Description

[0001] The present invention relates to a cooling device wherein the opening direction of the door can be changed.

[0002] The cooling device doors are generally opened towards one direction and the opening direction cannot be changed afterwards. When the location of the cooling device is changed, the cooling device door can be positioned adjacent to the wall and this causes the door not to be opened completely and/or to hit the wall. In order to solve this problem, cooling devices with changeable door opening directions are developed. In these cooling devices, as well as the door opening direction, the position of the handle on the door is also changed. Therefore, structures shaped as openings are disposed on both sides of the cooling device doors where to the handle can be mounted. Plugs are disposed in the openings where to the handle is not mounted so that the exterior appearance of the cooling device is not distorted. These plugs can fall and get lost during transportation and/or use of the cooling device and cause the esthetic appearance of the cooling device to be distorted. Furthermore, an additional workman is employed for mounting the plug and thus labor costs increase.

[0003] In the state of the art Japanese Patent Document No. JP4208382, a cooling device is described wherein the handle can be fixed to the right or left side of the door. In this embodiment, the ends of the handle are inserted through the holes on the edges of the door and the unused holes are closed by rubber-like plugs.

[0004] US3766598 discloses a handle assembly including an infrangible insert that performs the functions of isolating a hand pull structure from excessive pull forces and providing support for a decorative structure.

[0005] US3430386 discloses a cabinet having reversibly mountable doors, wherein a door mounting arrangement includes upper and lower pivot means including removable upper and lower pivot pins mountable on the cabinet.

[0006] The aim of the present invention is the realization of a cooling device wherein the opening direction of the door can be changed and the esthetic appearance is improved.

[0007] The cooling device realized in order to attain the aim of the present invention is defined in the appended claims. The cooling device according to the invention necessarily comprises all the features of claim 1. Any statement, in the following description, suggesting that a feature mentioned in claim 1 is optional, should be ignored.

[0008] In the following description, "embodiments" will be described. In case these embodiments are not in accordance with claim 1, they do not fall within the scope of the invention.

[0009] In an embodiment, the cooling device comprises at least one opening arranged on the door, through which the end of the handle is inserted while the handle

is being mounted on the door, at least one carrier disposed on the inner surface of the door so as to be aligned with the opening and which bears the ends of the handle and at least one support member having a cover that closes the opening. The support member is disposed between the carrier and the door. The cover extends outwards from the surface of the support member facing the door so as to fill the interior of the opening.

[0010] In an embodiment, the cover is placed into the opening snap-fittingly. In the preferred version of this embodiment, the cover and the door are coplanar. Thus, the cover and the door look like a single surface and esthetic unity is provided.

[0011] In another embodiment, the cover is mounted on the support member so as to split open when pressed on to uncover the front of the opening. In this embodiment, the junction line of the door and the support member is in intermittent form. In a version of this embodiment, the wall thickness of the cover is less than that of the support member and when force is exerted thereon it separates from the support member easily.

[0012] In another embodiment the support member comprises at least two detent means. The detent means are situated at the portions near the sides of the support member. In this embodiment, the carrier is seated on the support member so as to remain between the detent means and is mounted to the door together with the support member. The detent means are preferably positioned so as to clasp the carrier from the top and bottom.

[0013] In another embodiment, the openings are located at the lateral sides of the door. In this embodiment, the handle provides convenience of utilization by extending from the lateral sides of the door towards the front side.

[0014] In another embodiment, there are two openings on each lateral side of the door and one carrier behind each opening with a total of four carriers. One support member is disposed between each opening and carrier for at least one of the lateral sides. A sufficient distance is left between the openings on the same side for aligning with the two ends of the handle.

[0015] By means of the present invention, the esthetic appearance of the cooling device is improved by closing the openings with the cover on the side where the handle is not mounted. The cover is prevented from being dislodged with an external intervention since it is integrated with the support member and located on the inner side of the door. Furthermore, during production, mounting the plug at the end of the door assembly is not required and thus labor costs decrease.

[0016] The cooling device realized in order to attain the aim of the present invention is illustrated in the attached figures, where:

Figure 1 - is the schematic view of a cooling device.
Figure 2 - is the perspective view of the door.
Figure 3 - is the partial view of the door.
Figure 4 - is the partial perspective view of the door

when the handle is not mounted on the door.

Figure 5 - is the partial view of the door when the handle is not mounted on the door.

Figure 6 - is the top partial view of the door, the support member and the carrier.

Figure 7 - is the exploded view of the door, the support member and the carrier.

Figure 8 - is the front perspective view of the support member.

Figure 9 - is the rear perspective view of the support member.

Figure 10 - is the sideways view of the support member.

[0017] The elements illustrated in the figures are numbered as follows:

1. Cooling device
2. Cabinet
3. Door
4. Handle
5. Opening
6. Carrier
7. Cover
8. Support member
9. Detent means

[0018] The cooling device (1) comprises at least one cabinet (2) wherein foodstuffs to be cooled are placed, at least one door (3) providing access into the cabinet (2), at least one handle (4) providing the door (3) to be opened/closed, at least one opening (5) arranged on the door (3), enabling one end of the handle (4) to be inserted therethrough for mounting the handle (4) to the door (3), at least one carrier (6) disposed on the inner surface of the door (3), at the level of the opening (5) and providing the handle (4) to be mounted to the door (3) (Figure 1, Figure 2).

[0019] When the handle (4) is to be mounted to the door (3), its ends are passed through the openings (5) and placed inside the carrier (6). Deformation on the door (3) is prevented due to weight of the handle (4) by means of the carriers (6). In the course of time, the position of the handle (4) on the door (3) can be changed as per the request of the user by dislodging the ends of the handle (4) from the carriers (6) where they are mounted, and mounting them to the carriers (6) at the desired position.

[0020] The cooling device (1) furthermore comprises a support member (8) that is disposed between the carrier (6) and the door (3), having a cover (7) that almost entirely closes the opening (5). Thus, the unused openings (5) on the door (3) are closed and the esthetic appearance of the cooling device (1) is improved. Furthermore, the cover (7) is prevented from falling and getting lost by small interventions since it extends outwards from inside the surface of the door (3) and is wedged in between the carrier (6) and the door (3) (Figure 3, Figure 4).

[0021] In an embodiment, the cover (7) is placed snap-

fittingly into the opening (5). In this embodiment, the carrier (6) and the support member (8) are placed before injecting insulation material into the door (3). The insulation material filled into the door (3) is prevented from leaking outside by means of the cover (7) on the support member (8) being snap-fitted into the opening (5).

[0022] In another embodiment, the cover (7) is coplanar with the door (3). Thus, visual unity is provided on the door (3) and the user perception of quality is increased. Furthermore, the user is prevented from getting caught to the cover (7) and break it during utilization (Figure 4).

[0023] In another embodiment, the cover (7) is disposed on the support member (8) and is broken when pressed on so as to uncover the front of the opening (5) while the handle (4) is being mounted to the door (3). In this embodiment, the ring where the cover (7) joins with the support member (8) is of grooved form. Thus, the cover (7) remains integrated with the support member (8) when a force is not exerted thereon and is dislodged from the support member (8) when pushed into the door (3) thereby allowing the handle (4) to be mounted to the door (3).

[0024] In another embodiment, the support member (8) comprises at least two detent means (9) that provide the carrier (6) to be borne by holding it from the sides. In this embodiment, the support member (8) projects from the sides of the carrier (6) and grasps the carrier (6) by means of the detent means (9). Thus, the support member (8) and the carrier (6) can be mounted on the surface of the door (3) like a single piece and ease of assembly is provided (Figure 6, Figure 7, Figure 8, Figure 9, Figure 10).

[0025] In another embodiment, the openings (5) are located at the lateral sides of the door (3). In this embodiment, the handle (4) extends from the lateral side of the door (3) towards the front side. Thus, the unused openings (5) remain on the less visible lateral side of the door (3) and the external appearance is improved (Figure 3, Figure 4, Figure 5, Figure 7).

[0026] In another embodiment, the cooling device (1) comprises two openings (5) situated on each of two lateral sides of the door (3), four carriers (6) disposed behind each opening (5) and at least two support members (8) disposed between the openings (5) and carriers (6) on at least one side. In this embodiment, the handle (4) has two ends, one at the bottom, the other at the top and is mounted to the carriers (6) by passing through the openings (5) on one of the lateral sides. When the place of the handle (4) is desired to be changed, it is dislodged from the carriers (6) at the side where it is located and is mounted to the carriers (6) on the other side. Thus, flexibility of use is provided.

[0027] By means of the present invention, the position of the handle (4) on the door (3) is changed and the esthetic appearance of the cooling device (1) is improved by closing the unused openings (5) with the cover (7). The cover (7) is prevented from falling during transport-

tation and/or utilization of the cooling device (1) since it is integrated with the support member (8) on the inner surface of the door (3). Furthermore, since the production process becomes easier to perform, labor costs decrease as well.

[0028] It is to be understood that the present invention is not limited to the embodiments disclosed above and a person skilled in the art can easily introduce different embodiments within the scope of the invention, as defined by the appended claims.

Claims

1. A cooling device (1) comprising

- at least one cabinet (2) wherein foodstuffs to be cooled are placed,
- at least one door (3) providing access into the cabinet (2),
- at least one handle (4) providing the door (3) to be opened/closed,
- at least two pairs of openings (5) situated on the door (3), of which a first pair of openings (5) is located on another lateral side of the door (3) than a second pair of openings (5), wherein both ends of the handle (4) are inserted through the first pair of openings (5) and thus the handle (4) is mounted to the door (3), and wherein the second pair of openings (5) enables both ends of the handle (4) to be inserted therethrough as an alternative to being inserted through the first pair of openings (5), for mounting the handle (4) at a changed position to the door (3),
- four carriers (6), each being disposed behind an opening (5) and disposed on the inner surface of the door (3), at the level of each opening (5) and providing for the handle (4) to be able to be mounted to the door (3), **characterized by** at least two support members (8) on at least one side of the door (3), wherein the support members (8) are disposed between the carriers (6) placed at the level of the second pair of openings (5) and the door (3), each support member (8) having a cover (7) that almost entirely closes one of the second openings (5).

2. The cooling device (1) as in Claim 1, **characterized by** the covers (7) being snap-fittingly seated into the openings (5).

3. The cooling device (1) as in Claim 1 or 2, **characterized by** the covers (7) being coplanar with the door (3).

4. The cooling device (1) as in anyone of the above Claims, **characterized by** the covers (7) being disposed on the support member (8) and broken when

pressed on so as to uncover the front of the opening (5) while the handle (4) is being mounted to the door (3) .

5. The cooling device (1) as in anyone of the above Claims, **characterized by** each support member (8) comprising at least two detent means (9) that provide for the carrier (6) to be borne by holding it from the sides.

Patentansprüche

1. Ein Kühlgerät (1) umfasst;

- mindestens ein Schrank (2), worin die zu kühlenden Lebensmittel platziert werden,
- mindestens eine Tür (3), die den Zugang zum Schrank (2) ermöglicht,
- mindestens einen Griff (4), mit dem die Tür (3) geöffnet / geschlossen werden kann,
- mindestens zwei an der Tür (3) angeordnete Öffnungspaare (5), von denen sich ein erstes Öffnungspaar (5) an einer anderen seitlichen Seite der Tür (3) befindet als das zweite Öffnungspaar (5), wobei beide Enden des Griffs (4) durch das erste Paar von Öffnungen (5) eingeführt sind und somit der Griff (4) an der Tür (3) angebracht ist; wobei das zweite Öffnungspaar (5) es ermöglicht, dass beide Enden des Griffs (4) als eine Alternative zum Einführen durch das erste Öffnungspaar (5) hindurch eingeführt werden, um den Griff (4) an einer geänderten Position zu der Tür (3) anzubringen,
- vier Träger (6), die jeweils hinter einer Öffnung (5) und auf der Innenfläche der Tür (3) in Höhe jeder Öffnung (5) angeordnet sind und dafür sorgen, dass sich der Griff (4) an der Tür (3) montieren lässt, **gekennzeichnet ist es durch** mindestens zwei Stützelemente (8) an mindestens einer Seite der Tür (3), wobei die Stützelemente (8) zwischen den Trägern (6) angeordnet sind, die auf der Höhe des zweiten Paares von Öffnungen (5) und der Tür (3), wobei jedes Stützelement (8) eine Abdeckung (7) aufweist, die eine der zweiten Öffnungen (5) nahezu vollständig verschließt.

2. Das Kühlgerät (1), wie in Anspruch 1 aufgeführt, **ist dadurch gekennzeichnet, dass** die Abdeckungen (7) in die Öffnungen (5) einschnappend eingesetzt sind.

3. Das Kühlgerät (1), wie in Anspruch 1 oder 2 aufgeführt, **ist dadurch gekennzeichnet, dass** die Abdeckungen (7) mit der Tür (3) koplanar sind.

4. Das Kühlgerät (1), wie in einem der vorherigen An-

sprüchen aufgeführt, **ist dadurch gekennzeichnet, dass** die Abdeckungen (7) auf dem Trägerelement (8) angeordnet sind und beim Aufdrücken zerbrechen, um die Vorderseite der Öffnung (5) freizulegen, während der Griff (4) an der Tür (3) montiert ist.

5. Das Kühlgerät (1), wie in einem der vorherigen Ansprüchen aufgeführt, **ist dadurch gekennzeichnet, dass** jedes Stützelement (8) mindestens zwei Rastmittel (9) umfasst, die dafür sorgen, dass der Träger (6) getragen wird, indem er von den Seiten gehalten wird.

Revendications

1. Un dispositif de refroidissement (1) **comprenant**

- au moins une armoire (2) dans laquelle sont placées les denrées alimentaires à refroidir,
- au moins une porte (3) donnant accès à l'armoire (2),
- au moins une poignée (4) permettant l'ouverture/fermeture de la porte (3),
- au moins deux paires d'ouvertures (5) situées sur la porte (3), dont une première paire d'ouvertures (5) est située sur une autre face latérale de la porte (3) qu'une seconde paire d'ouvertures (5), les deux extrémités de la poignée (4) étant insérées par la première paire d'ouvertures (5) et la poignée (4) étant ainsi montée sur la porte (3), et dans laquelle la seconde paire d'ouvertures (5) permet d'insérer les deux extrémités de la poignée (4) à travers celle-ci comme alternative à l'insertion à travers la première paire d'ouvertures (5), pour monter la poignée (4) en position modifiée à la porte (3),
- quatre supports (6), chacun étant disposé derrière une ouverture (5) et disposé sur la surface intérieure de la porte (3), au niveau de chaque ouverture (5) et de manière que la poignée (4) puisse être montée sur la porte (3), **est caractérisé en ce qu'**au moins deux éléments porteurs (8) sur au moins une face de la porte (3), dans laquelle les éléments de support (8) sont disposés entre les supports (6) placés au niveau de la deuxième paire d'ouvertures (5) et la porte (3), chaque élément de support (8) ayant un couvercle (7) qui ferme presque entièrement une des deuxièmes ouvertures (5).

2. Le dispositif de refroidissement (1) selon la déclaration 1, **est caractérisé en ce que** les couvercles (7) sont fixés par encliquetage dans les ouvertures (5).

3. Le dispositif de refroidissement (1) selon la déclaration 1 ou 2, **est caractérisé en ce que** les couvercles (7) sont coplanaires avec la porte (3).

4. Le dispositif de refroidissement (1) comme dans l'une quelconque des déclarations ci-dessus, **est caractérisé en ce que** les couvercles (7) sont disposés sur l'élément de support (8) et sont cassés lorsqu'on les appuie de manière à découvrir l'avant de l'ouverture (5) pendant que la poignée (4) est montée sur la porte (3).

5. Le dispositif de refroidissement (1) comme dans l'une quelconque des déclarations ci-dessus, **est caractérisé en ce que** chaque élément de support (8) comprend au moins deux moyens d'encliquetage (9) qui permettent au support (6) d'être maintenu par les côtés.

Figure 1

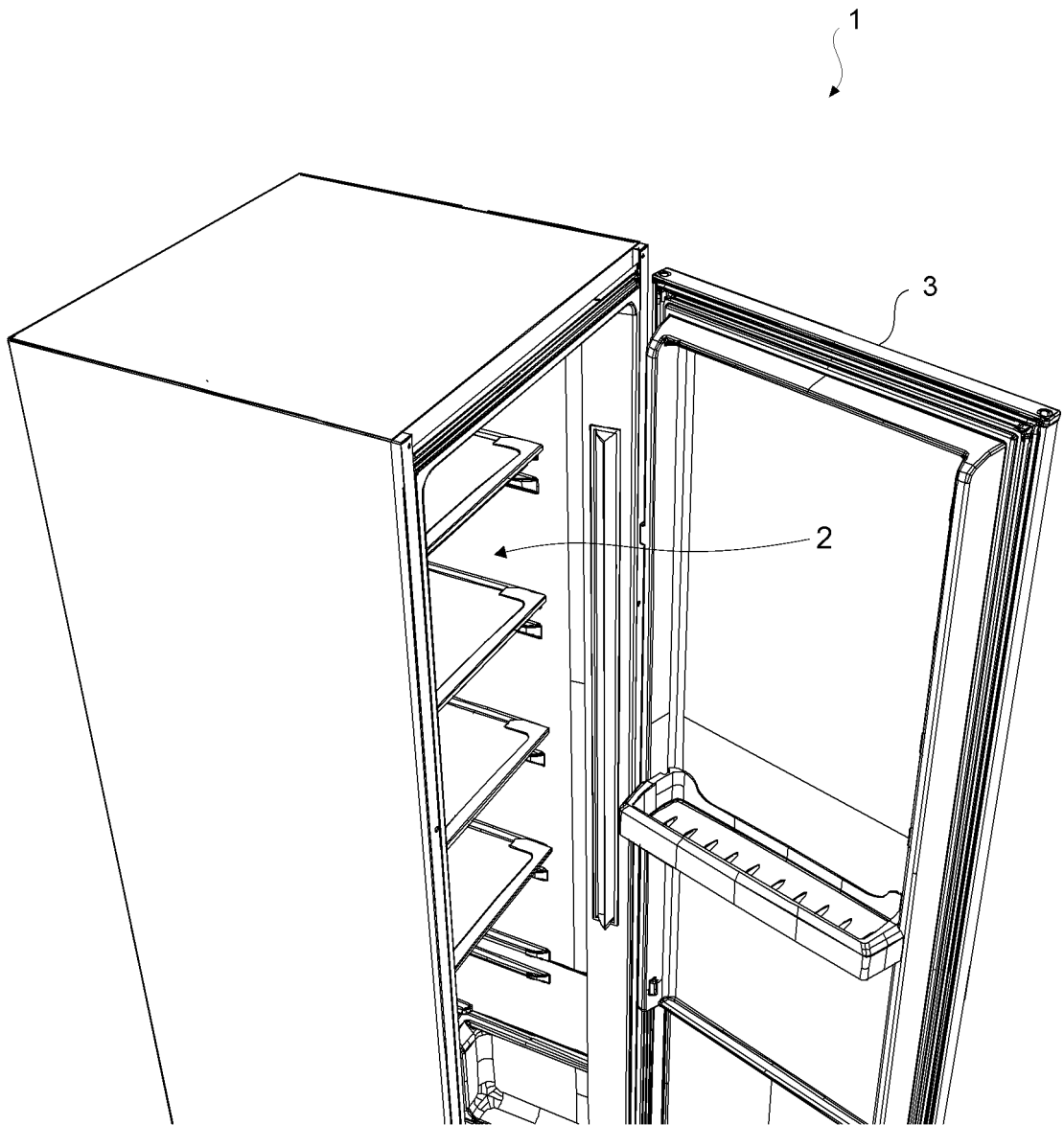


Figure 2

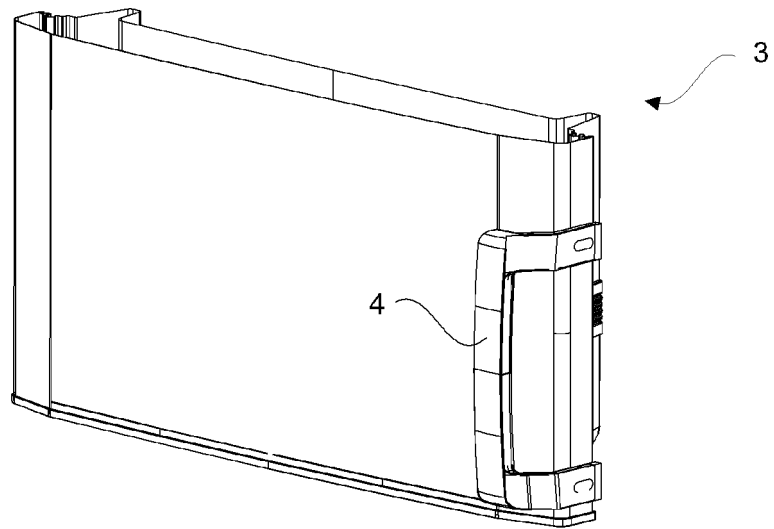


Figure 3

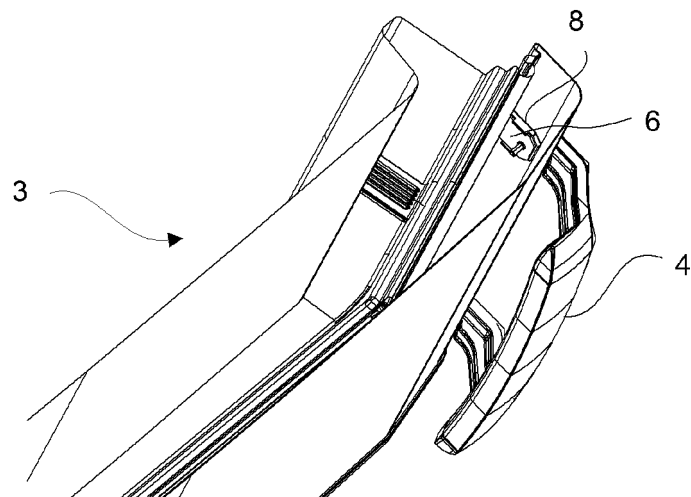


Figure 4

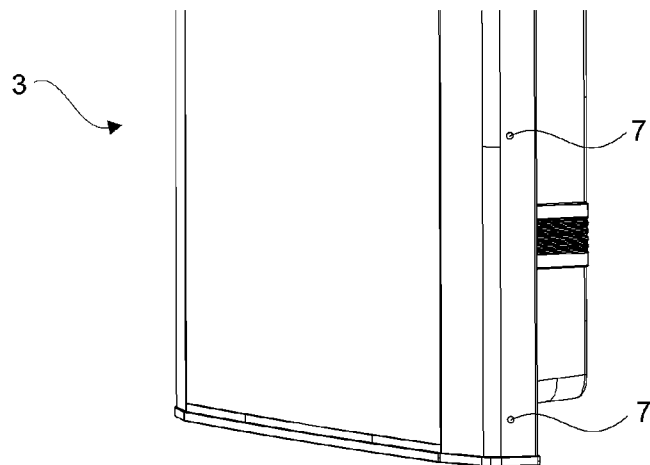


Figure 5

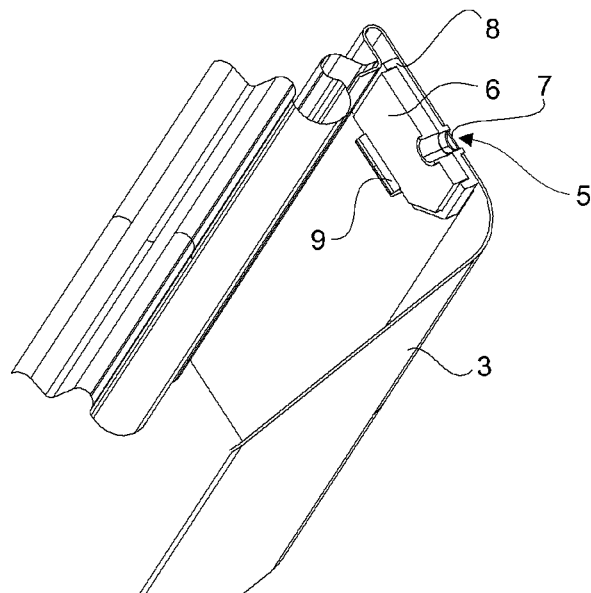


Figure 6

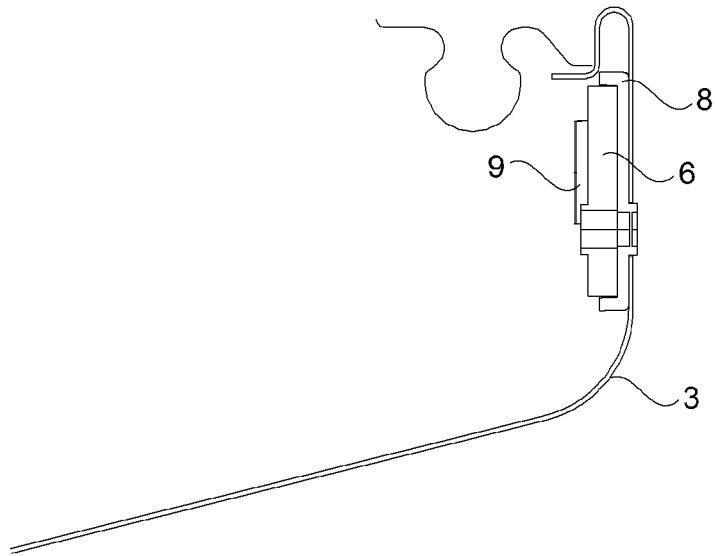


Figure 7

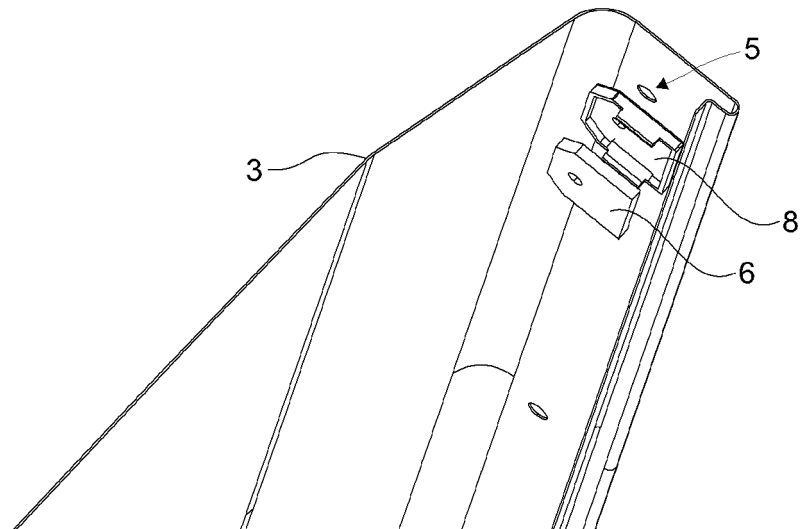


Figure 8

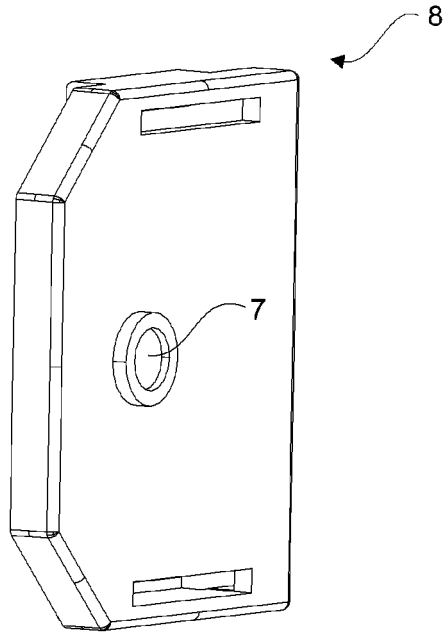


Figure 9

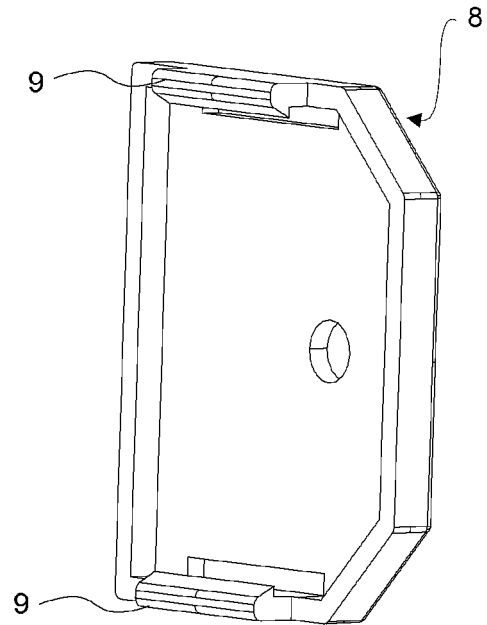
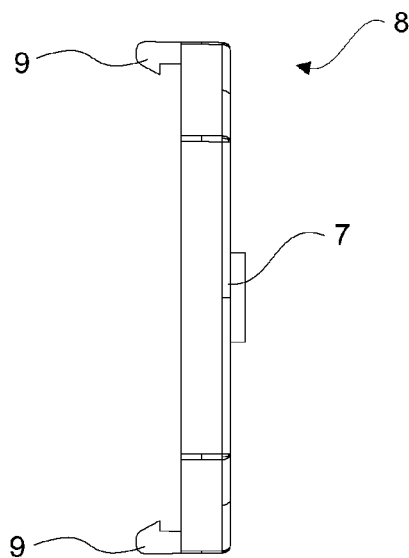


Figure 10



REFERENCES CITED IN THE DESCRIPTION

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