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(54) **A COOLING DEVICE COMPRISING A POSITION-ADJUSTABLE DOOR**

KÜHLVORRICHTUNG MIT EINER POSITIONSVERÄNDERLICHEN TÜR

DISPOSITIF DE REFROIDISSEMENT COMPRENANT UNE PORTE À POSITION RÉGLABLE

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Description

[0001] The present invention relates to a cooling device comprising a door of which the position on the body can be adjusted.

[0002] Cooling devices comprise at least one body which is kept at a temperature lower than the ambient temperature and wherein the items and foodstuffs to be cooled are placed, and at least one door which provides access into said body. The proper mounting of the door to the body is important both in terms of a smooth outer appearance of the cooling device and in terms of the insulation of the inner volume of the body from the outer environment, hence the cooling performance.

[0003] However, the risk of failing to mount the door to the body in the proper manner exists due to production tolerances and mounting difficulties. Moreover, even if the product leaves the factory with the door being properly mounted to the body, the presence of an uneven floor where the cooling device is to be installed causes the position of the door to become out of place. Especially in side-by-side cooling devices, the height difference between the doors creates a problem which can be easily noticed by the user and which may cause user dissatisfaction. Therefore, the cooling device doors are preferred to be produced such that the height thereof on the body can be adjusted.

[0004] In the cooling devices, the body whereon the hinge is attached is produced by filling polyurethane in between the specially-formed thin inner and outer liners in order to provide insulation. Since said liners are not structurally durable enough, the part of the body where the hinge is attached is supported by means of various additional components from inside the liner. Moreover, a separate component, which supports the hinge from inside, is also used in order to carry the door which gets very heavy due to items such as bottles, etc. which are placed onto the shelves.

[0005] In order to adjust the position of the door in the state of the art hinges, the holes through which the screws fixing the hinge to the body and the support component must be opened in an oval shape; however, said hole gets wider in the course of time under the load of the door and sometimes the screw dislodges from said hole, causing the door to fall off. Furthermore, as the position of the door is adjusted, the area on the body against which the hinge bears, in other words on which a force is exerted, changes. However, in this case, the position of the component which should support the hinge from inside is fixed. Therefore, in some positions of the door, there is no support component behind the area where the hinge bears against the body, and the support component could not support the hinge and the body properly. When the support component is produced longer than the hinge in order to solve this problem, more material is consumed.

[0006] The hinges generally comprise a fixed part which is attached to the body and a pin which is borne therein and around the axis of which the door rotates. In

some embodiments, the hinge comprises two leaves which are connected to each other by means of a pin, a fixed one which is connected to the body and a moving one which is attached to the door. In the state of the art, various developments are made to the hinges in order to adjust the height of the doors. Developments which are made to the hinges in order to adjust the height of the doors are disclosed in the United States Patents No. US593472 and US3662493. In these documents, hinges are disclosed, wherein the length of the part of the pin which enters the housing on the door is changed by means of various mechanisms.

[0007] In the state of the art United States Patent No. US4070728, a hinge is disclosed, wherein the position of the door can be adjusted by adjusting the height of the fixed part which is attached to the body. In this document, an L-shaped bracket which is attached to the cooling device is moved upwards/downwards by means of a cam disposed thereunder.

[0008] Another state of the art invention is disclosed in United States Patent No. US5666764. In this document, a hinge and a component supporting the same are provided. The support component and the hinge are attached to each other by means of screws passed through the enlarged holes on the body. The enlarged holes provide a movement area for adjusting the positions of the support component and the hinge. After the position is adjusted once in the factory, the support component is fixed to the body independently of the hinge. The fixing process is carried out by screws or injecting foam thereon. The support component cannot be moved again after said position is adjusted.

[0009] In the state of the European Patent Application No. EP1917492, the position of the door is adjusted by moving upwards/downwards the hinge and the component supporting the hinge from inside the body.

[0010] US 2011/001413 A1 discloses a cooling device according to the preamble of claim 1. JP H08 270299 discloses a top hinge adjustment mechanism with a lever.

[0011] The aim of the present invention is the realization of a cooling device wherein the position of the door on the body can be easily adjusted.

[0012] 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 adjustment mechanism which has the function of a lever converting the movement in the radial direction into a movement in the vertical axis, which moves the hinge and the main pin thereon, hence the door upwards/downwards in the vertical axis and which enables the position of the door on the body to be changed by moving an arm and the hinge seated on the arm and the main pin thereof upwards/downwards.

[0013] The cooling device of the present invention comprises a first bearing and a second bearing wherein the hinge is both borne and guided in order to move the hinge and the main pin thereon in the vertical direction. The first bearing is disposed on the adjustment mecha-

nism while the second bearing is provided on the second cover.

[0014] The cooling device of the present invention further comprises two holders which enables the arm to be attached to the adjustment mechanism so as to move around the first pin and which enables the pressure member to move upwards/downwards in the vertical axis with the arm rotating around a horizontal axis. By means of the holder, the force exerted onto one end of the arm is transmitted to the other end, thus enabling the position of the hinge and the main pin attached thereon hence of the door with respect to the door to be adjusted.

[0015] The cooling device comprises a second pin which enables the pressure member to be attached, in a movable manner just like the arm disclosed above being attached onto the holders by means of the pin, onto the extensions under the hinge for transmitting the movement of the arm to the hinge. Thus, since the hinge and the arm are movably attached to each other, it becomes possible to transmit the movement of the arm, which is moved by exerting force onto the actuation member, to the hinge which can move only in the vertical axis by means of the pressure member.

[0016] In the cooling device of the present invention, the position of the door can be easily and safely adjusted by moving the hinge and the main pin thereon upwards/downwards in the vertical axis by means of an arm which is provided on the adjustment mechanism and which has the function of a lever. Moreover, since the hinge is borne with the first and second bearings while adjusting the position of the door on the body, the door is robustly supported by means of the first and second covers fixed on the door and by means of the adjustment mechanism positioned between the first and second covers. Therefore, the weight is distributed homogeneously on the walls of the door, and formation of any deformation on the walls of the door is prevented.

[0017] A cooling device realized in order to attain the aim of the present invention is illustrated in the attached figures, where:

Figure 1 - is the front view of a cooling device.

Figure 2 - is the rear perspective view of the cooling device.

Figure 3 - is the view of detail A in Figure 2.

Figure 4 - is the view of a first cover, a second cover, an adjustment mechanism and a hinge together.

Figure 5 - is the exploded view of Figure 4.

Figure 6 - is the perspective view of an arm, a hinge and a first bearing.

Figure 7 - is the sideways cross-sectional view of the arm, the hinge and the first bearing.

[0018] The elements illustrated in the figures are numbered as follows:

1. Cooling device
2. Body

3. Door
4. Main pin
5. Hinge
6. Adjustment mechanism
7. First cover
8. Second cover
9. Arm
10. Actuation member
11. Pressure member
12. Bearing hole
13. First pin
14. Base
15. Holder
16. First hole
17. First bearing
18. Gradation
19. Locking member
20. Abutment
21. Second bearing
22. Locking housing
23. Step
24. Rim
25. Extension
26. Second hole
27. Second pin
28. Fixing member

[0019] The cooling device (1) comprises at least one body (2) wherein the items to be cooled are placed; at least one door (3) which provides access into the body (2); at least one main pin (4) and at least one hinge (5) which are fixed to the door (3), which enable the door (3) to be attached to the body (2) and whereon the door (3) is mounted so as to rotate therearound; and at least one adjustment mechanism (6) with one end being accessible from the outside whereon the main pin (4) is seated, which serves as a lever when a force is exerted from the outside in a manner to move upwards/downwards in the vertical axis, thus enabling the main pin (4) and the hinge (5) to stop at the desired position and if required, enabling the position of the door (3) on the body (2) to be changed by being actuated (Figure 1, Figure 2 and Figure 3).

[0020] The cooling device (1) comprises a first cover (7) which is fixed to the upper edge of the door (3) and whereon the adjustment mechanism (6) is fixed, and a second cover (8) which covers the adjustment mechanism (6) placed onto the first cover (7).

[0021] The cooling device (1) comprises a hook-shaped arm (9) which is provided on the adjustment mechanism (6) and which has an actuation member (10) at the end thereof open to the outer environment and a pressure member (11) at the other end thereof which moves upwards/downwards in the vertical axis with the movement of the actuation member (10) when a force is exerted on the actuation member (10), preferably when the same is rotated around the horizontal axis; a bearing hole (12) which is arranged on the arm (9) between the actuation member (10) and the pressure member (11);

and a first pin (13) which is fitted into the bearing hole (12) so as to enable the arm (9) to move by rotating around the horizontal axis. The length of the pressure member (11) determines the distance between the lowest and highest positions of the door (3). The actuation member (10) is an element such as screw, bolt, etc. which can be tightened/loosened by means of tools such as screwdriver, wrench, etc. The actuation member (10) can be accessed from outside the cooling device (1) (Figure 4 and Figure 5).

[0022] Moreover, the cooling device (1) comprises a base (14) which is provided on the adjustment mechanism (6) and which is placed onto the first cover (7); two parallel holders (15) which extend from the base (14) outwards and which surround the arm (9) from two sides; two first holes (16) which are provided on the two holders (15), which align with the bearing hole from both sides, which extend in the horizontal axis and through which the first pin (13) passes together with the bearing hole; and a first bearing (17) which is provided on the base (14) whereon the holder (15) is arranged, and wherein the hinge (5), whereon the main pin (4) is seated, is borne in the horizontal plane. Moreover, the cooling device (1) comprises a locking member (19) which extends parallel to the hinge (5) in the vertical axis on the same base (14). The first pin (13) is fixed to the holes and the bearing hole (12) by means of a ring.

[0023] In the embodiment of the present invention, the cooling device (1) comprises a protrusion-shaped abutment (20) just above the holder (15), which aligns with the actuation member (10) at the end of the arm (9) and which extends in the vertical axis. When the actuation member (10) is actuated by exerting a force thereon from the outside, the end of the actuation member (10) pushes said abutment (20), thus enabling the arm (9) to move by rotating around the first pin (13) seated into the bearing hole (12). In an embodiment of the present invention, the abutment (20), the bearing hole (12) and the first pin (13) inserted therein are arranged in the same vertical axis.

[0024] The second cover (8) is attached onto the first cover (7) by means of fixing members (28) such that the adjustment mechanism (6) remains between the first cover (7) and the second cover (8). The cooling device (1) comprises a second bearing (21) on the second cover (8) which coaxially aligns with the bearing on the adjustment mechanism (6); a locking housing (22) adjacent to the second bearing (21), wherein the locking member (19) is inserted; and a step (23) which is seated onto the gradation (18) on the first cover (7). The second cover (8) is seated into the recess on the first cover (7) such that the movement thereof in the horizontal plane is prevented, and then is fixed to the first cover (7) by means of the fixing members (28) such that the movement thereof in the vertical plane is also prevented.

[0025] The cooling device (1) comprises a cylindrical hinge (5), and the hinge (5) comprises a rim (24) at the top thereof, two extensions (25) at the base thereof extending downwards parallel to each other and two coaxial

second holes (26) provided at the end of the extensions (25), and a second pin (27) which is borne in said holes (26) together with the end of the pressure member (11) so as to remain between the extensions (25).

[0026] The hinge (5), the first cover (7), the adjustment mechanism (6) and the second cover (8) are mounted onto the door (3) in the following manner. First, the first cover (7) is mounted onto the upper edge of the door (3). Then, the base (14), the first bearing (17) and the holder (15) which are provided on the adjustment mechanism (6) are seated onto the first cover (7). In this case, the arm (9) is placed in between the holders (15) such that the pressure member (11) is located under the first bearing (17) and the actuation member (10) is aligned with the abutment (20), and then is attached to the holder (15) by means of the first pin (13) so as to rotate around the first pin (13) via the bearing hole (12) on the arm (9) now adjacent to the holders (15) and the holes. In this connection, the arm (9) rotates around the first pin (13) with the pressure member (11) moving upwards/downwards in the vertical axis, serving as a lever.

[0027] At this stage of the assembly, the hinge (5) which is passed through the second bearing (21) on the second cover (8) stays on the second cover (8) due to the rim (24) thereof. However, the part of the hinge (5) extending downwards through the second bearing (21) as well as the extensions (25) pass through the first bearing (17) and reach the pressure member (11) which extends under the first bearing (17). The pressure member (11) is movably attached to the hinge (5) by means of the second pin (27) via the holes (26) on the extensions (25), and the second cover (8) with the hinge (5) thereon is fixed to the first cover (7) such that the adjustment mechanism (6) remains therebetween (Figure 6 and Figure 7).

[0028] In this embodiment, when the position of the door (3) is desired to be adjusted, the actuation member (10) at the end of the arm (9), which can be easily accessed from the outside, is rotated around its own axis. Depending on the direction of said rotation, the actuation member (10) applies a force onto the abutment (20) or the applied force decreases. Consequently, depending on the movement, the arm (9) rotating around the first pin (13) moves the pressure member (11) and the hinge (5), which is movably connected to the pressure member (11) by means of the second pin (27), moves upwards or downwards under the guidance of the first and second bearings (17 and 21), thus moving the hinge (5) and hence the door (3) connected to the hinge (5) via the main pin (4) upwards or downwards. When the door (3) is brought to the desired position, the force being applied on the actuation member (10) is removed, and the adjustment process ends.

[0029] In the cooling device (1) of the present invention, the position of the door (3) can be easily and safely adjusted by moving the hinge (5) and the main pin (4) thereon upwards/downwards in the vertical axis by means of an arm (9) which has the function of a lever

only as a result of the actuation of the actuation member (10). Moreover, since the hinge (5) is borne with the first and second bearings (17 and 21) while adjusting the position of the door (3) on the body (2), the door (3) is robustly supported by means of the first and second covers (7 and 8) fixed on the door (3) and by means of the adjustment mechanism (6) positioned between the first and second covers (7 and 8). Therefore, the weight is distributed homogeneously on the walls of the door (3), and formation of any deformation on the walls of the door (3) is prevented.

Claims

1. A cooling device (1) **comprising** at least one body (2) wherein the items to be cooled are placed; at least one door (3) which provides access into the body (2); at least one main pin (4) seating on at least one hinge (5) which are fixed to the door (3), wherein the door (3) is connected to the hinge (5) via the main pin (4), which enable the door (3) to be attached to the body (2) and whereon the door (3) is mounted so as to rotate therearound; at least one adjustment mechanism (6) with one end being accessible from the outside, which serves as a lever when a force is exerted from the outside in a manner to move upwards/downwards in the vertical axis, thus enabling the main pin (4) and the hinge (5) to stop at the desired position and if required, enabling the position of the door (3) on the body (2) to be changed by being actuated **characterized by** a hook-shaped arm (9) which is provided on the adjustment mechanism (6) and which has an actuation member (10) at the end thereof open to the outer environment, said actuation member (10) being being a screw or a bolt which can be screwed/unscrewed by a tool, and a pressure member (11) at the other end thereof which has the hinge (5) seated on it and which moves upwards/downwards in the vertical axis with the movement of the actuation member (10) when a force is exerted on the actuation member (10); a bearing hole (12) which is arranged on the hook-shaped arm (9) between the actuation member (10) and the pressure member (11); and a first pin (13) which is fitted into the bearing hole (12) so as to enable the arm (9) to move by rotating around an horizontal axis.
2. A cooling device (1) as in claim 1, **characterized by** a base (14) which is provided on the adjustment mechanism (6) and which is placed onto the first cover (7); two parallel holders (15) which extend from the base (14) outwards and which surround the arm (9) from two sides; two first holes (16) which are provided on the two holders (15), which align with the bearing hole from both sides, which extend in the horizontal axis and through which the first pin (13)

passes together with the bearing hole; and a first bearing (17) which is provided on the base (14) whereon the holder (15) is arranged, and wherein the hinge (5), whereon the main pin (4) is seated, is borne in the horizontal plane.

3. A cooling device (1) as in Claim 2, **characterized by** a locking member (19) which extends parallel to the hinge (5) in the vertical axis on the base (14).
4. A cooling device (1) as in Claim 2, **characterized by** a protrusion-shaped abutment (20) just above the holder (15), which aligns with the actuation member (10) at the end of the arm (9) and which extends in the vertical axis.
5. A cooling device (1) as in Claim 4, **characterized by** the abutment (20) which is arranged at the same vertical axis as the bearing hole (12) and the first pin (13) inserted therein.
6. A cooling device (1) as in claim 2, **characterized by** a second bearing (21) on the second cover (8) which coaxially aligns with the bearing on the adjustment mechanism (6); a locking housing (22) adjacent to the second bearing (21), wherein the locking member (19) is inserted; and a step (23) which is seated onto the gradation (18) on the first cover (7).
7. A cooling device (1) as in Claim 1, **characterized by** a rim (24) at the top of the hinge (5), two extensions (25) at the base thereof extending downwards parallel to each other and two coaxial second holes (26) provided at the end of the extensions (25), and a second pin (27) which is borne in said holes (26) together with the end of the pressure member (11) so as to remain between the extensions (25).

Patentansprüche

1. Eine Kühlgerät (1), **umfasst** mindestens eine Gehäuse (2), worin die zu kühlenden Gegenstände platziert werden; mindestens eine Tür (3), die den Zugang zum Gehäuse (2) ermöglicht, mit mindestens einen Hauptbolzen (4), der an mindestens einem Scharnier (5) anliegt, die an der Tür (3) befestigt sind, wobei die Tür (3) über den Hauptbolzen (4) mit dem Scharnier (5) verbunden ist und ermöglicht, dass die Tür (3) an der Karosserie (2) befestigt wird, um darauf die Tür (3) so zu montieren, dass sie um sich dreht; mindestens einen Verstellmechanismus (6), dessen eine Ende von außen zugänglich ist und der als Hebel dient, wenn von außen eine Kraft ausgeübt wird, derart, dass er sich in der vertikalen Achse nach oben/unten bewegt und so ermöglicht, dass der Hauptbolzen (4) und das Scharnier (5) in der gewünschten Position zu stoppen und bei Bedarf die

Position der Tür (3) am Gehäuse (2) durch Betätigung zu verändern, **gekennzeichnet durch** einen hakenförmigen Arm (9) am Verstellmechanismus (6) vorgesehen ist und das an seinem zur Außenumgebung offenen Ende ein Betätigungselement (10) aufweist, wobei das Betätigungselement (10) eine Schraube oder ein Bolzen ist, der mit einem Werkzeug zugeschraubt/aufgeschraubt werden kann, und ein Druckelement (11) am anderen Ende, an dem das Scharnier (5) sitzt und das sich mit der Bewegung des Betätigungselements (10) in der vertikalen Achse nach oben/unten bewegt, wenn eine Kraft auf das Betätigungselement (10) ausgeübt wird, ein Lagerloch (12), das am hakenförmigen Arm (9) zwischen dem Betätigungselement (10) und dem Druckelement (11) angeordnet ist; und einen ersten Bolzen (13), der in das Lagerloch (12) eingepasst ist, um eine Bewegung des Arms (9) durch Drehung um eine horizontale Achse zu ermöglichen.

2. Ein Kühlgerät (1) nach Anspruch 1, **gekennzeichnet durch** einen am Verstellmechanismus (6) vorgesehenen Sockel (14), der auf den ersten Deckel (7) aufgesetzt wird, zwei parallele Halter (15), die sich von der Basis (14) nach außen erstrecken und den Arm (9) von zwei Seiten umgeben; zwei Löcher (16), die an den beiden Haltern (15) vorgesehen sind, die von beiden Seiten mit dem Lagerloch fluchten, die in der horizontalen Achse verlaufen und durch die der erste Bolzen (13) zusammen mit dem Lagerloch hindurchgeht; und ein erstes Lager (17), das an der Basis (14) vorgesehen ist, an der der Halter (15) angeordnet ist, wobei das Scharnier (5), an dem der Hauptbolzen (4) sitzt, in der horizontalen Ebene gelagert ist.

3. Ein Kühlgerät (1) nach Anspruch 2, **gekennzeichnet durch** ein Verriegelungselement (19), das sich parallel zum Scharnier (5) in der vertikalen Achse am Sockel (14) erstreckt.

4. Ein Kühlgerät (1) nach Anspruch 2, **gekennzeichnet durch** ein vorsprungförmiges Widerlager (20) direkt über dem Halter (15), das mit dem Betätigungselement (10) am Ende des Arms (9) befindet und sich in der vertikalen Achse erstreckt.

5. Ein Kühlgerät (1) nach Anspruch 4, **gekennzeichnet durch** das Widerlager (20), das auf der gleichen vertikalen Achse wie das Lagerloch (12) und der darin eingesetzte erste Bolzen (13) angeordnet ist.

6. Ein Kühlgerät (1) nach Anspruch 2, **gekennzeichnet durch** ein zweites Lager (21) auf der zweiten Abdeckung (8), das koaxial mit dem Lager auf dem Einstellmechanismus (6) ausgerichtet ist; ein Verriegelungsgehäuse (22) neben dem zweiten Lager (21), in das das Verriegelungselement (19) eingesetzt ist;

und eine Stufe (23), die auf der Abstufung (18) am ersten Deckel (7) aufsitzt.

7. Ein Kühlgerät (1) nach Anspruch 1, **gekennzeichnet durch** einen Rand (24) an der Oberseite des Scharniers (5), zwei Verlängerungen (25) an dessen Basis, die sich parallel zueinander nach unten erstrecken, und zwei vorgesehene koaxiale zweite Löcher (26) am Ende der Verlängerungen (25) und einen zweiten Bolzen (27), der zusammen mit dem Ende des Druckelements (11) in den Löchern (26) gelagert ist, so dass er zwischen den Verlängerungen (25) verbleibt.

Revendications

1. Un appareil de refroidissement (1) **comprenant** au moins un corps (2) dans lequel sont placés les articles à refroidir ; au moins une porte (3) qui permet d'accéder au corps (2) ; au moins un axe principal (4) reposant sur au moins une charnière (5) fixée à la porte (3), la porte (3) étant reliée à la charnière (5) par l'intermédiaire de l'axe principal (4), ce qui permet de fixer la porte (3) au corps (2) et sur lequel la porte (3) est montée de manière à pouvoir tourner autour ; au moins un mécanisme de réglage (6) dont une extrémité est accessible de l'extérieur, qui sert de levier lorsqu'une force est exercée de l'extérieur de manière à se déplacer vers le haut/bas dans l'axe vertical, permettant ainsi à l'axe principal (4) et à la charnière (5) de s'arrêter à la position souhaitée et, si nécessaire, permettant de modifier la position de la porte (3) sur le corps (2) en l'actionnant, **caractérisé par** un bras en forme de crochet (9) qui est prévu sur le mécanisme de réglage (6) et qui comporte à son extrémité un élément d'actionnement (10) ouvert sur l'environnement extérieur, ledit élément d'actionnement (10) est une vis ou un boulon qui peut être vissé/dévisé à l'aide d'un outil, et un élément de pression (11) à l'autre extrémité duquel la charnière (5) est assise et qui se déplace vers le haut/bas dans l'axe vertical avec le mouvement de l'élément d'actionnement (10) lorsqu'une force est exercée sur l'élément d'actionnement (10) ; un trou d'appui (12) disposé sur le bras en forme de crochet (9) entre l'élément d'actionnement (10) et l'élément de pression (11) ; et une première goupille (13) montée dans le trou d'appui (12) de manière à permettre au bras (9) de se déplacer en tournant autour d'un axe horizontal.

2. Un appareil de refroidissement (1) tel que dans la déclaration 1, **caractérisé par** une base (14) qui est fournie sur le mécanisme de réglage (6) et qui est placée sur le premier couvercle (7) ; deux supports parallèles (15) qui s'étendent de la base (14) vers l'extérieur et qui entourent le bras (9) des deux

côtés ; deux premiers trous (16) situés sur les deux supports (15), alignés des deux côtés avec le trou d'appui, qui s'étendent dans l'axe horizontal et à travers lesquels la première goupille (13) passe avec le trou d'appui ; et un premier palier (17) situé sur la base (14), sur lequel le support (15) est disposé, et dans lequel la charnière (5), sur laquelle repose la goupille principale (4), est supportée dans le plan horizontal.

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3. Un appareil de refroidissement (1) tel que dans la déclaration 2, **caractérisé par** un élément de verrouillage (19) qui s'étend parallèlement à la charnière (5) dans l'axe vertical sur la base (14).

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4. Un appareil de refroidissement (1) tel que dans la déclaration 2, **caractérisé par** une butée en forme de protubérance (20) juste au-dessus du support (15), qui s'aligne avec l'élément d'actionnement (10) à l'extrémité du bras (9) et qui s'étend dans l'axe vertical.

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5. Un appareil de refroidissement (1) selon la déclaration 1, **caractérisé par** la butée (20) qui est disposée sur le même axe vertical que le trou d'appui (12) et la première goupille (13) qui y est insérée.

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6. Un appareil de refroidissement (1) selon la déclaration 2, **caractérisé par** un second palier (21) sur le second couvercle (8) qui s'aligne coaxialement avec le palier sur le mécanisme de réglage (6) ; un logement de verrouillage (22) adjacent au second palier (21), dans lequel l'élément de verrouillage (19) est inséré ; et une étape (23) qui est assise sur la graduation (18) sur le premier couvercle (7).

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7. Un appareil de refroidissement (1) selon la déclaration 1, **caractérisé par** un bord (24) au sommet de la charnière (5), deux extensions (25) à la base de celle-ci s'étendant vers le bas parallèlement l'une à l'autre et deux seconds trous coaxiaux (26) prévus à l'extrémité des extensions (25), et une seconde broche (27) qui est portée dans lesdits trous (26) avec l'extrémité de l'élément de pression (11) de manière à rester entre les extensions (25).

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Figure 1

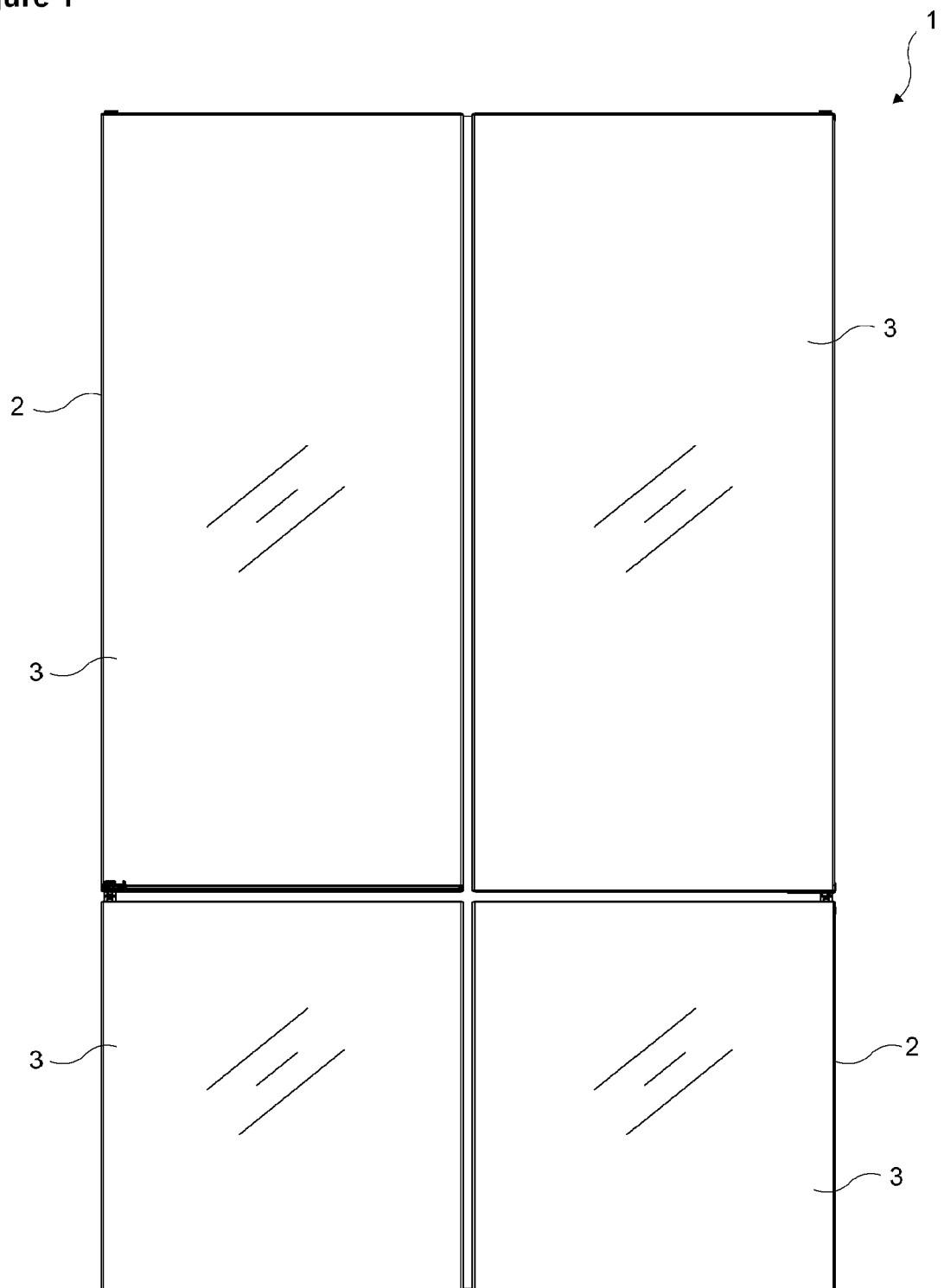


Figure 2

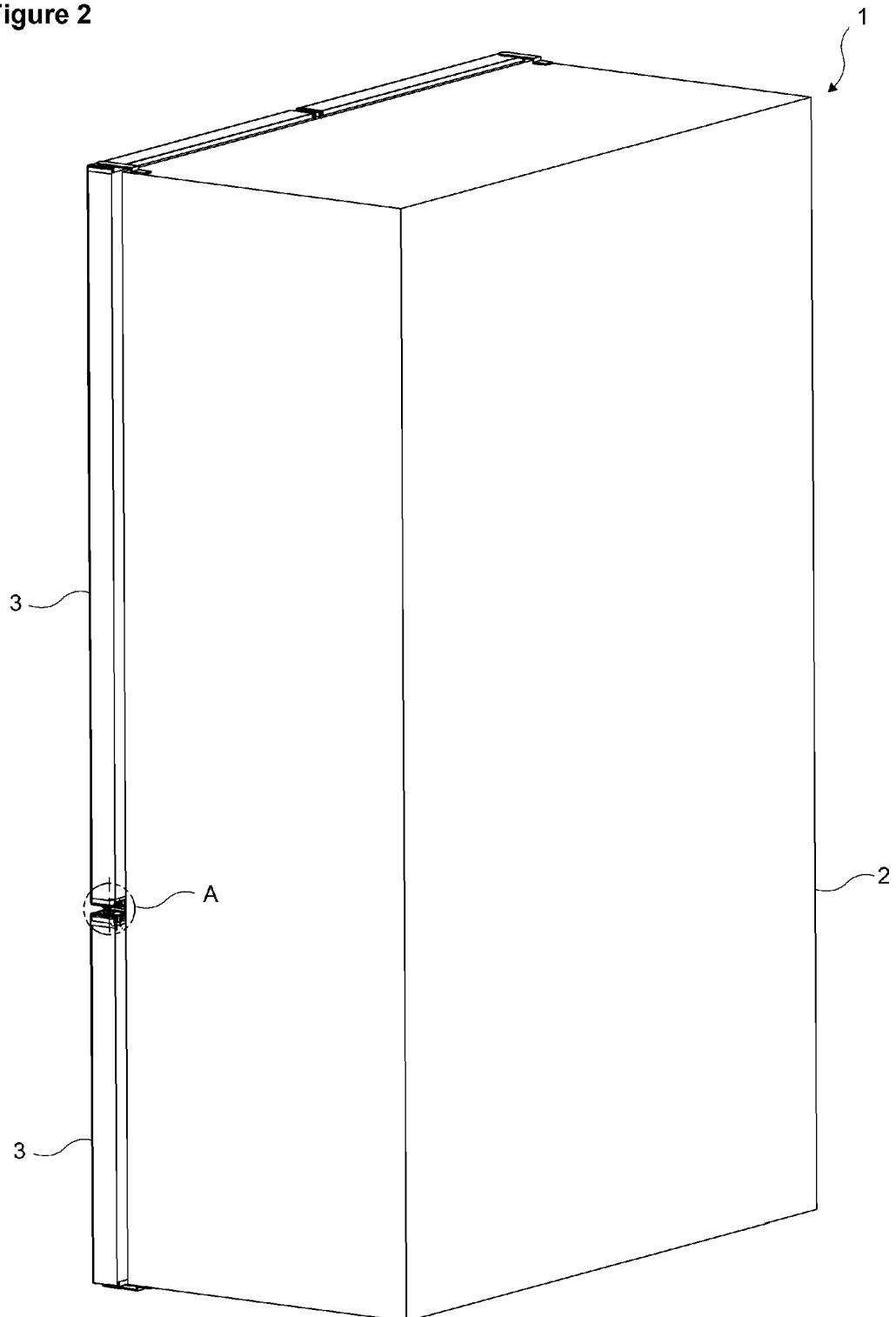


Figure 3

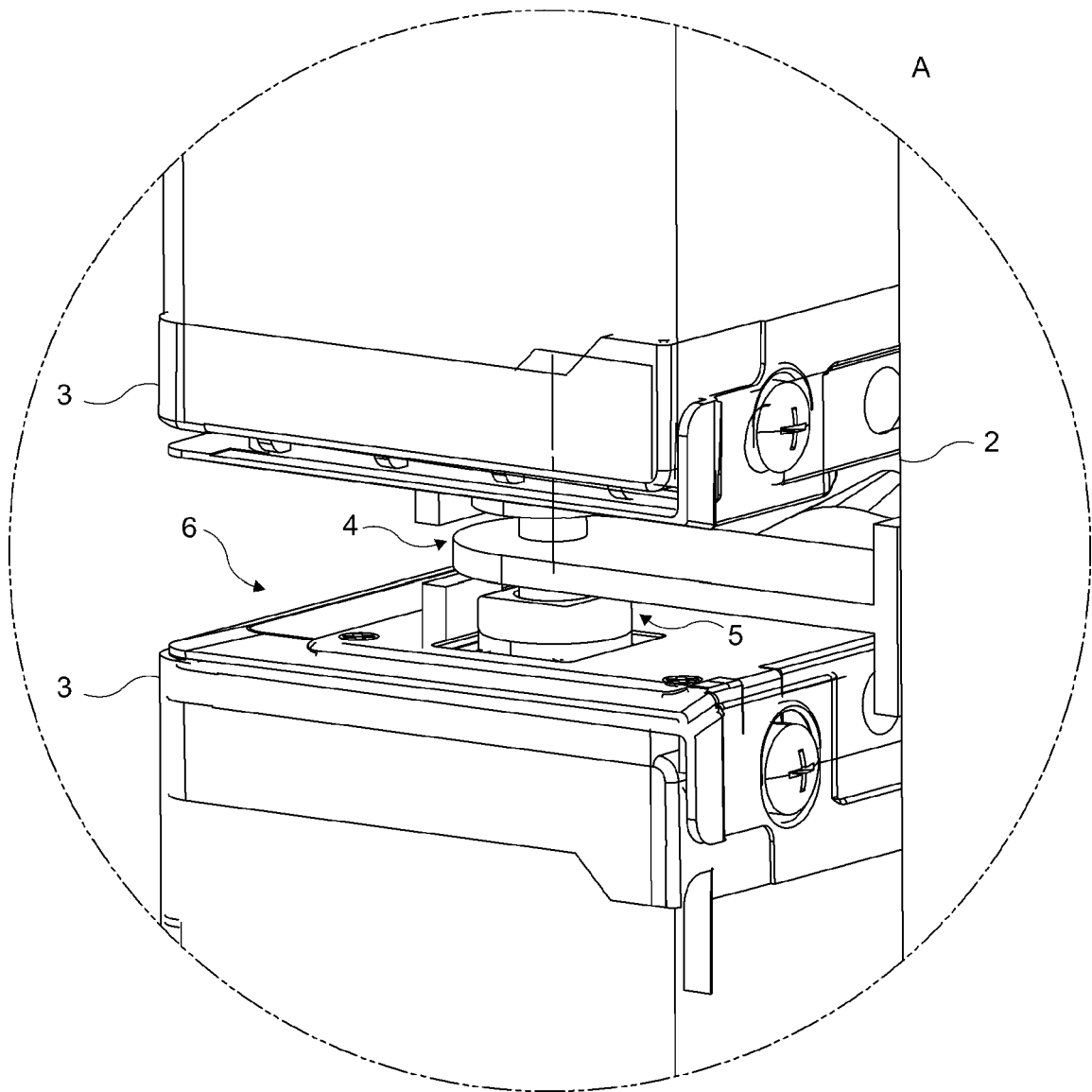


Figure 4

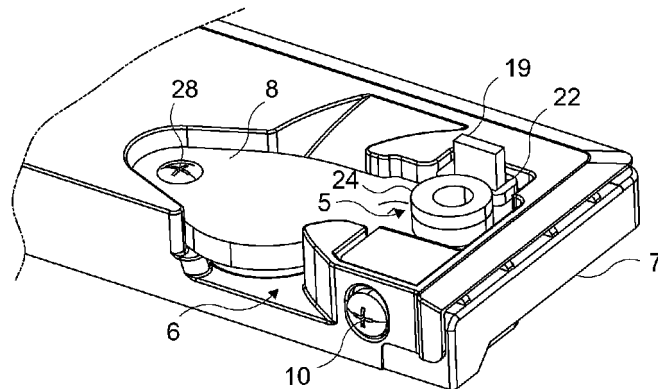


Figure 5

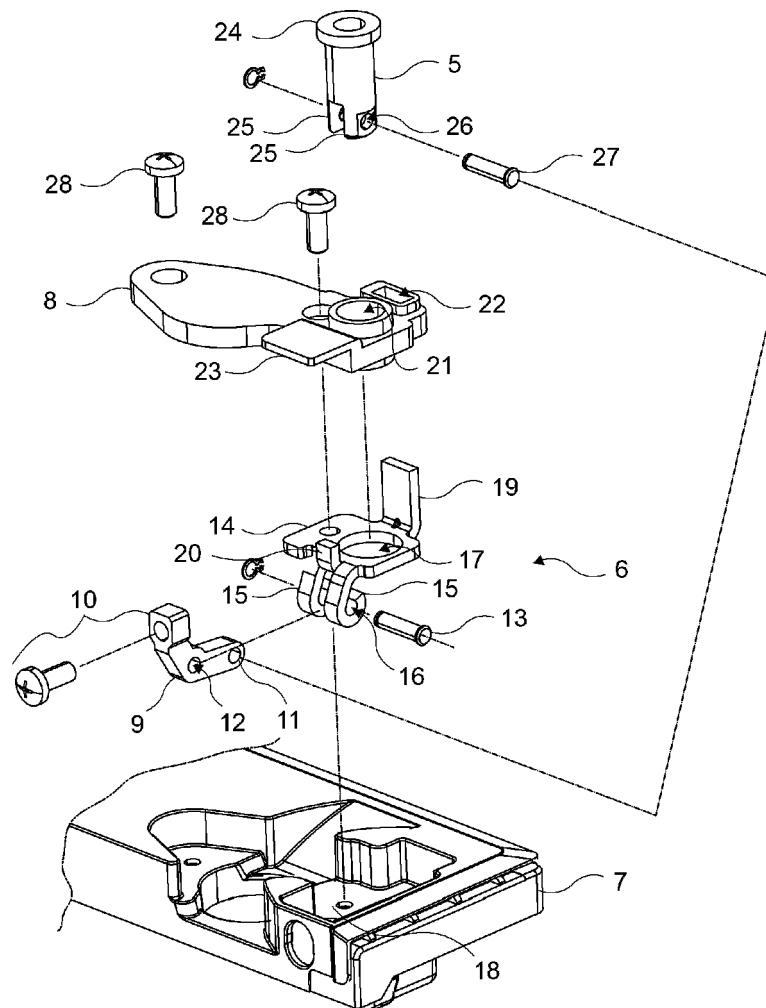


Figure 6

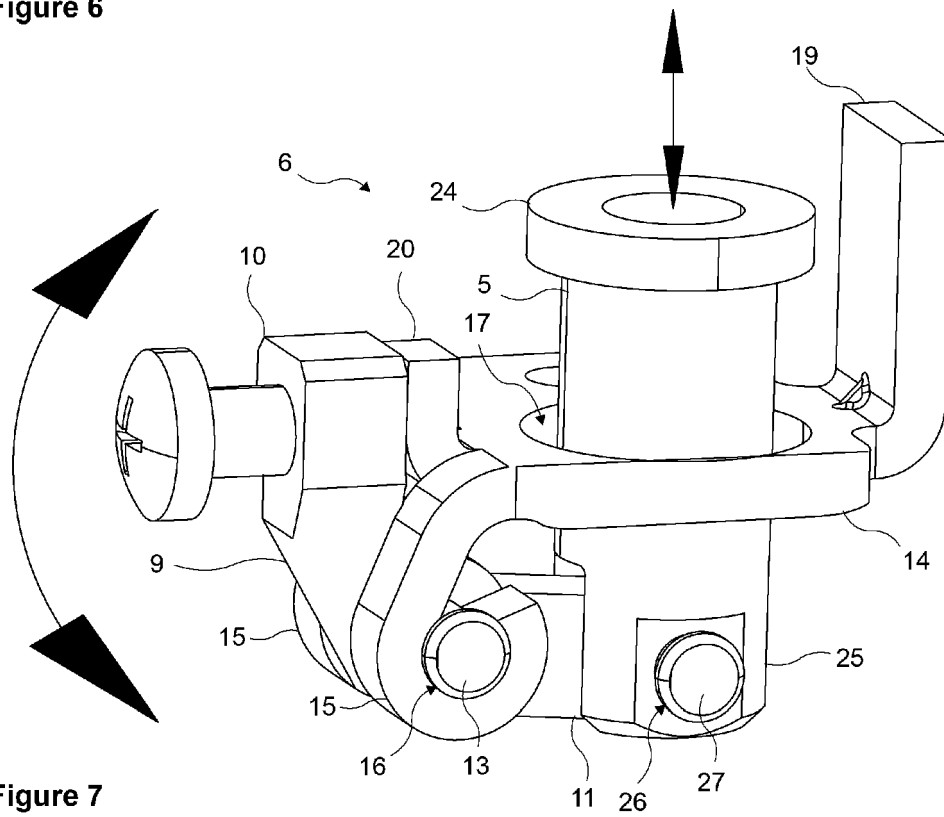
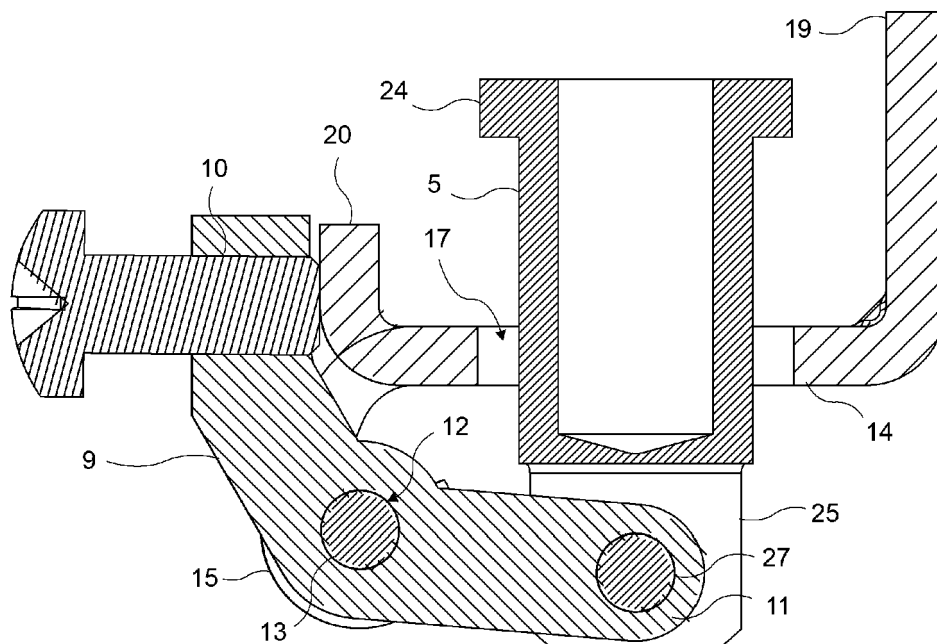


Figure 7



REFERENCES CITED IN THE DESCRIPTION

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