

(19)



(11)

EP 2 683 896 B1

(12)

EUROPEAN PATENT SPECIFICATION

(45) Date of publication and mention of the grant of the patent:
14.06.2017 Bulletin 2017/24

(51) Int Cl.:
E05D 15/50^(2006.01) E05D 7/10^(2006.01)
E05D 3/02^(2006.01)

(21) Application number: **11721823.0**

(86) International application number:
PCT/IB2011/000798

(22) Date of filing: **12.04.2011**

(87) International publication number:
WO 2012/123776 (20.09.2012 Gazette 2012/38)

(54) **DISASSEMBLEABLE HINGE AND PIECE OF FURNITURE USING THE SAME**

DEMONTIERBARES SCHARNIER UND MÖBELSTÜCK DAMIT

CHARNIÈRE DÉMONTABLE ET MEUBLE L'UTILISANT

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

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(30) Priority: **11.03.2011 IT TO20110220**

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(43) Date of publication of application:
15.01.2014 Bulletin 2014/03

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US-A- 505 480 US-A- 600 318

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Description

[0001] The present invention refers to a disassembleable hinge according to the preamble of claim 1.

[0002] The present invention relates also to a piece of furniture or cabinet having a door and a frame using the disassembleable hinge according to claim 1.

[0003] A lot of apparatus comprises doors equipped with hinges and handles for accessing the inner compartments.

[0004] According to the installation of this apparatus, it may be preferable that the door opens in one specific direction; therefore, when designing these apparatus, it is also necessary to consider these requirements.

[0005] A first and obvious solution to solve the problem consists in mounting the hinges and the handles on the doors when installing the apparatus: the hinges will be applied to the door side in order to keep the desired opening direction.

[0006] This solution is very demanding for the installation personnel both in terms of care and time.

[0007] Furthermore, the opening direction of the door cannot be easily changed after the installation (for example because of new needs of the user) ; in general this task has to be carried out by qualified personnel.

[0008] A second method for the solution of the above mentioned problem consists in producing different apparatus according to the opening direction of the door.

[0009] This solution is disadvantageous due to the high production and storage costs.

[0010] WO2006/136939 describes a disassembleable handle comprising a fixed assembly susceptible of being applied to a door, and a movable rotably assembly according to a rotation axis of the hinge mounted on the fixed assembly; the fixed assembly comprises a pivot which defines a rotation axis of the handle; the movable assembly comprises at least two elements rotably mounted together according to a rotation axis of the movable assembly, which are parallel to the rotation axis of the handle; within the movable assembly there are seats for the pivot. The handle has a first operating configuration wherein the elements of the movable assembly are reciprocally rotated in such a way as to trap the pivot, and a second operating configuration wherein the elements of the movable assembly are rotated in such a way as to release the pivot.

[0011] However, if the apparatus upon which the above mentioned handle is mounted is equipped with doors for containing an air pressure, such as for instance the air handling units (AHU), it is necessary to allow the air pressure to flow at the moment of the opening of the door through the handle, avoiding in the same way that the door slams for effect of the pressure, in order to reduce the risk of getting the door on the face at high speed.

[0012] The object of the present invention is to describe a disassembleable hinge which overcomes the above described drawbacks and solves the above described problems.

[0013] According to the present invention a disassembleable hinge is realized as claimed in claim 1 or 10.

[0014] According to the present invention is also realized a cabinet of an apparatus comprising a hinge object of the present invention according to claim 14.

[0015] The invention will be now described with reference to the attached drawings, which illustrate a non limiting form of implementation, wherein:

- 10 - figures 1-3 show respective perspective views of a hinge object of the present invention;
- figures 4-9 show section views of respective configurations of the hinge object of the present invention in a first embodiment;
- 15 - figures 10-15 show section views of respective configurations of the hinge object of the present invention in a second embodiment.

[0016] Figures 1, 2 and 3 describe a disassembleable hinge according to the present invention in a first embodiment, which comprises a fixed assembly A and a movable assembly comprising a first element B and a second element C.

[0017] Fixed assembly A is susceptible of being applied to a frame and the movable assembly B+C is susceptible of being applied to a door; in particular, first element B is adapted for being directly associated to the door to be handled (and in detail, opened, closed and if necessary removed).

[0018] The movable assembly B+C is rotably mounted on first fixed assembly A according to a rotation axis X of the hinge; for this reason, the fixed assembly comprises three pivots, integral within a component realized in a unique piece, which define said rotation axis X of the hinge; in the illustrated examples, there is an intermediate pivot A2 and two lateral pivots; said pivots are supported by a pair of arms A1 of the assembly A, which are coupled to a closing plate of assembly A; lateral pivots protrude from arms A1.

[0019] Assembly A is fastened to the frame, in particular to an upper part of the frame, by means of a pair of screws inserted within two elongated holes A4, obtained in the fastening plate of assembly A.

[0020] Elements B and C of the movable assembly are rotably connected together according to a rotation axis Y which is parallel to rotation axis X of the hinge.

[0021] Seats are obtained within elements B and C in positions B2 (B2I, B2L) for pivots A2; in particular, element C comprises an arm C7, and seat is obtained for an ending part of said arm C7 for the intermediate pivot A2. Element B also comprises two intermediate arms and two lateral arms; upon an end of the intermediate arms, two intermediate seats B2I are obtained for the intermediate pivot A2, while at the end of the lateral arms, two lateral seats B2L are obtained for the two lateral pivots. Four arms of assembly B are united to a closing plate of assembly B. Assembly B is united to the door through three screws inserted in three elongated holes B4 ob-

tained in the closing plate of assembly B.

[0022] Elements B and C comprise reciprocal mounting means; in particular, the arms of element C comprise two protrusions C1 (up and down) and the two intermediate arms of element B have two corresponding recesses or cavities B3 for the two protrusions C1; as shown in figures (protrusions C1 are indicated with dotted line in fig. 7), the mounting means, that are protrusions and recesses, are housed in the area of the seats; protrusions C1 are inserted in recesses B3 and remain trapped there, contemporarily allowing the reciprocal rotation of elements B and C. In fact, when the hinge is mounted on the door, element C rotates around element B which stays stationary.

[0023] The movable assembly comprises also an intermediate release system, susceptible of allowing a first partial opening of the door without releasing it totally from the frame.

[0024] As shown in figure 4, the intermediate release system comprises a supporting plane 10, slidably mounted within the body of element B and oriented in a direction orthogonal to the one detected by axis X and Y.

[0025] To supporting plane 10 is fastened a pin 11, susceptible of being operated by a user; pin 11 extends orthogonally with respect to supporting plane 10 and protrudes outside of element B.

[0026] A spring 12 is positioned parallelly to supporting plane 10 and is constrained at its first end to the body of element B and at its second end to pin 11. Spring 12 exerts a thrust force of pin 11 and therefore of supporting plane 10 in a first operating position.

[0027] In this first operating position, a front part 10 of supporting plane 10 is positioned in front of intermediate seats B2I and of lateral seats B2L.

[0028] In a second operating position, kept as unstable through a force exerted by a user on pin 11, front part 10a of supporting plane 10 is retracted inside the body of element B releasing the part in front of the intermediate and lateral seats B2I and B2L.

[0029] In the first operating position, supporting plane 10 prevents the intermediate pivot and the lateral pivots A2 from exiting from intermediate and lateral seats B2I, B2L, allowing anyway a slight opening of the door, susceptible of allowing the exit of the air possibly under pressure between the door upright and the assembly formed by the door itself and element B.

[0030] Therefore, the door cannot get on the face of the user, but it is retained in position properly by the contrast between pivots A2 and supporting plane 10.

[0031] The hinge object of the present invention can therefore be in three operating positions. In all of these three operating positions elements B and C are strongly constrained the one to the other.

[0032] In a first operating configuration, elements B and C are reciprocally rotated in order to allow the entrapment of the intermediate pivot A2 of assembly A. Therefore, the movable assembly and the door associated to it can rotate around axis X of the hinge; in a second

operating condition elements B and C of the movable assembly are reciprocally rotated in order to release pivot A2; therefore, the movable assembly and the door associated to it can be detached from the fixed assembly and the door can be either rotated around another hinge or removed.

[0033] The second operating condition of the hinge is subject to the second operating condition of supporting plane 10, that is to the contemporary action on pin 11 by the user.

[0034] In the third operating condition elements B and C, as well as in the above described second operating condition of the hinge, are reciprocally rotated in order to release pivot A2. However, in the third operating condition of the hinge, the contextual position of supporting plane 10 in its first operating configuration, prevents the complete release of the fixed and movable assembly, through a contrast between pivots A2 and the supporting plane as previously described.

[0035] Element C comprises a handle in which a recess C3 is obtained in the handle itself for a latch C4 susceptible of locking elements B and C together when the movable assembly is in the first operating configuration, that is when the handle of element C is adjacent to the closing plane of element B.

[0036] Latch C4 can be rotated through the use of an Allen key (not shown in the attached figures); as an alternative to latch C4, a keylock can be integrated within the handle.

[0037] The shape and the section of seats and of protrusions C1 is important; the outer section of protrusions C1 is substantially circular, the section of seats is substantially U-shaped, with rounded angles; the axis of protrusions C1 corresponds to the axis of the movable assembly; the symmetry axis of seats is parallel and displaced with respect to the axis of protrusions C1.

[0038] The section of seat is higher than the section of the pivot, and in this way its lateral surface acts on the lateral surface of the pivot with a variable contact.

[0039] It follows that the distance between rotation axis X of the hinge and rotation axis Y of the movable assembly depends on the reciprocal angular position of the elements of the movable assembly; the surface of the seat acts on the pivot such that the rotation of element C with respect to element B causes a displacement of rotation axis Y of the movable assembly.

[0040] Between the pivot and the movable assembly, a force F is then created, which has a component F_y, oriented in a direction parallel to a closing direction of the door against the frame. Component F_y of force F decreases with the increase of the rotation of the handle until the component is not cancelled in correspondence to a rotation of it equal to 90°.

[0041] As shown in figure 4, the hinge is in the first operating configuration. A gasket 20 positioned between the door and upright 21 is compressed and prevents the eventual air under pressure inside the apparatus from exiting.

[0042] At the opening of the handle, through the rotation of it around rotation axis Y, pivot A2 is released from seats B2l, B2L, B3 and the door can open allowing the air to exit (figure 5, arrow AIR representing the air) and thus bringing the hinge object of the present invention in the third operating configuration.

[0043] Therefore, through the action on pin 11, supporting plane 10 is retracted inside the body of element B (figure 6) and the door can therefore totally open (figure 7).

[0044] When supporting plane 10 overtakes pivot A2, the supporting plane in absence of the force exerted by a user on pin 11, returns in its first operating configuration.

[0045] During the closing of the door, as shown in figures 8 and 9, pivot A2 meets the front part 10a of supporting plane 10, which in absence of the force exerted by a user is returned in its first operating configuration.

[0046] However, both pivot A2 and supporting plane 10 have respective beveled parts. In particular, the beveled parts of pivot A2 and of supporting plane 10 are arranged such that during the reclosing of the door enter reciprocally in contact.

[0047] The beveled tip of the part 10a of supporting plane 10, meets therefore the beveled part of the pivot and slides along a plane inclined formed by it. For the effect of the force exerted by a user during the closing of the door, opposed forces are created along the inclined plane which cause spring 12 to compress, retracting supporting plane 10 within element B toward its second operating configuration. The hinge object of the present invention is then capable of reclosing without intervention on pivot10.

[0048] As soon as supporting plane 10 has overtaken pivotA2, supporting plane 10 for effect of the force exerted by spring 12 returns again in the first operating configuration.

[0049] In figures 10-13 it is shown a second embodiment of the hinge object of the present invention.

[0050] The second embodiment differentiates from the first embodiment described up to this point as fixed assembly A comprises also a locking element 40, susceptible of allowing the locking of the door in a position of intermediate opening, or in a third operating condition, in which it results to be partially open with respect to the upright, allowing, as in the case of the first embodiment, the air possibly under pressure between the door upright and the assembly formed by the door itself and element B to exit, without the door being free to completely open and hitting then a user.

[0051] Furthermore, the second embodiment of the hinge differs from the previous one for the absence of a movable supporting plane to realize the intermediate release system. In this case, on the other hand, the intermediate release system comprises further then locking element 40, also a step 41, positioned on movable assembly B and, more in detail, on the arms of element B itself. This step 41 is configured for removably engaging with locking element 40.

[0052] In detail, as it can be noticed in figure 10, the locking element 40 comprises a L-shaped body having a first and a second portion oriented between them at 90°; whereas the first portion is for its maximum part fixed, or integrally realized with fixed element A, and faced to the door upright, the second portion protrudes orthogonally with respect to the upright itself, along a direction orthogonal with respect to the direction detected by axis Y.

[0053] Second portion 40b of locking element 40 comprises an arrow-shaped ending portion, having an oblique side 40c which identifies a tapering in its end and a portion having a higher thickness; in this portion having a higher thickness it is highlighted a step recess 40d, faced towards element.B, and susceptible of fitting with step 41 through a flexion of the second portion.

[0054] As noticed in figure 10, at the opening of handle or element C, the hinge is in the first operating configuration. A gasket 20 positioned between the door and upright 21 is compressed and prevents the air possibly under pressure inside the apparatus from exiting.

[0055] At the opening of the handle, through the rotation of it around rotation axis Y, pivotA2 is released from seats B2l, B2L, B3 and the door can open allowing the air to exit (figure 11, arrow AIR representing the air) and bringing then the hinge object of the present invention in the third operating configuration.

[0056] In the third operating configuration step recess 40d enters in contrast with step 41 positioned on element B, and therefore the door opens only partially.

[0057] At this point, a user, as shown in figure 1, must exert a flexion force F_1 of the second portion of locking element 40, in order to bring the door to a complete opening.

[0058] In order to do this, this force F_1 must have at least a component orthogonally directed toward axis Y and sufficient for flexing the second portion of locking element 40 of a length sufficient for overtaking the length of step 41.

[0059] After the getting over step 41, the second portion of locking element 40 returns again in the position orthogonal with respect to the first portion (figure 13).

[0060] During the closing, as shown in figure 14, step 41 firstly runs into the inclined side of the ending part of the second portion of locking element 40. This inclined side is configured such that a force of pressure of the door against the upright causes a reaction force on the second portion of the locking element enough for causing a new flexion outwards; if the force applied is enough, the door and in particular step 41 of movable assembly B+C overtake step recess 40d and the second portion recovers a direction orthogonal with respect to the first portion of locking element 40.

[0061] The complete closing of the door (first operating configuration) is again reached by rotating element C and in particular the handle in a position adjacent to the closing plane of element B. It is then clear that the first and the second embodiment of the present invention can be

combined between them for supplying the hinge object of the present invention with a first, second intermediate closing (or opening) system.

[0062] The advantages of the hinge object of the present invention are clear in the light of the previous description. In particular, it allows to realize a closing element of a door of a cabinet of an apparatus subject to an inner pressure higher than the outer one, and prevents that accidentally, because of the pressure gradient very elevated, the door can slam violently against the user.

[0063] The intermediate closing or opening system allow therefore to define a limited area or sector wherein the movable assembly can freely move with respect to the fixed assembly without allowing the complete opening of the door and therefore without allowing the complete disengagement of the movable assembly with respect to the fixed assembly.

[0064] The hinge object of the present invention allows also the reclosing or repositioning of the simple door, without the user having to intervene again on the pin.

[0065] To the hinge up to here described can be applied many variants, integrations or changes obvious for an expert in the art without exiting from the protective scope given by the attached claims.

Claims

1. Disassembleable hinge comprising:

- a fixed assembly (A) susceptible of being associated to a frame; and
- a movable assembly (B, C) susceptible of being associated to a door;

said movable assembly being rotably mounted on said fixed assembly according to a rotation axis of the hinge; said fixed assembly comprising a pivot (A2) defining said rotation axis of the hinge, said movable assembly comprising two elements rotably mounted together according to a rotation axis (Y) of the movable assembly (B, C), said rotation axis of the movable assembly (y) being parallel to said rotation axis (X) of said hinge; in each of said elements at least a seat (B2I, B2L) being obtained for said pivot (A2); said movable assembly has at least a first and a second operating configuration; in said first operating configuration said elements (B, C) being rotated in such a way as to trap said pivot (A2); in said second operating configuration said elements (B, C) being rotated in such a way as to release said pivot (A2); a first one (B) of said elements (B, C) being associated to said door; a second one (C) of said elements (B, C) being rotably mounted with respect to said first element (B); said hinge is **characterized in that** it comprises an intermediate release system (10, 11, 12; 40, 41) capable of realizing a third operating configuration of partial opening, sus-

ceptible of providing a limited sector of free stroke between said fixed assembly and said movable assembly while preventing the complete release of said movable assembly;

wherein said intermediate release system (10, 11, 12) comprises a supporting plane (10) and wherein in said third operating configuration said pivot (A2) is retained by said supporting plane (10) slidably mounted on said movable assembly.

2. Hinge according to claim 1, wherein said supporting plane (10) is positioned on a plane orthogonal with respect to said rotation axis (X) of said hinge.

3. Hinge according to claim 1, wherein said supporting plane (10) can be configured between a first and a second operating configuration; in said first operating configuration, said supporting plane (10) being in contrast with said pivot (A2).

4. Hinge according to claim 3, wherein in said second operating configuration said supporting plane (10) does not contrast with said pivot (A2).

5. Hinge according to claim 4, wherein in said second operating configuration said supporting plane (10) is in a retracted position within said element (B).

6. Hinge according to claim 1, comprising also a pin (11) for controlling said supporting plane (10).

7. Hinge according to claim 6, wherein said pin (11) extends orthogonally with respect to said supporting plane and protrudes outside of said element (B).

8. Hinge according to claim 6, comprising also a contrast spring (12); said contrast spring (12) having a first end constrained to said element (B) and a second end constrained to said pin (11) and upon it exerting a contrast force susceptible of positioning at rest said supporting plane (10) in said first operating configuration.

9. Hinge according to claim 8, wherein said pivot (A2) comprises a beveled part susceptible of coupling to a beveled front part of said supporting plane (10).

10. Disassembleable hinge comprising:

- a fixed assembly (A) susceptible of being associated to a frame; and
- a movable assembly (B, C) susceptible of being associated to a door;

said movable assembly being rotably mounted on said fixed assembly according to a rotation axis of the hinge; said fixed assembly comprising a pivot (A2) defining said rotation axis of the hinge, said

movable assembly comprising two elements rotably mounted together according to a rotation axis (Y) of the movable assembly (B, C), said rotation axis of the movable assembly (y) being parallel to said rotation axis (X) of said hinge; in each of said elements at least a seat (B2l, B2L) being obtained for said pivot (A2); said movable assembly has at least a first and a second operating configuration; in said first operating configuration said elements (B, C) being rotated in such a way as to trap said pivot (A2); in said second operating configuration said elements (B, C) being rotated in such a way as to release said pivot (A2); a first one (B) of said elements (B, C) being associated to said door; a second one (C) of said elements (B, C) being rotably mounted with respect to said first element (B); said hinge is **characterized in that** it comprises an intermediate release system (10, 11, 12; 40, 41) capable of realizing a third operating configuration of partial opening, susceptible of providing a limited sector of free stroke between said fixed assembly and said movable assembly while preventing the complete release of said movable assembly;

wherein said intermediate release system (40, 41) comprises a locking element (40) constrained and mounted on said fixed assembly (A) and an engagement element (41); said engagement element (41) being mounted on said movable assembly; said engagement element being susceptible of removably engaging to said locking element.

11. Hinge according to claim 10, wherein said engagement element is a step (41).
12. Hinge according to claim 11, wherein said locking element comprises at least a flexible engagement portion and provided with an end having a step recess (40d) susceptible of engaging with said step (41).
13. Hinge according to claim 12, wherein said flexible engagement portion is a second portion of said locking element (40) and wherein said locking element (40) comprises also a first portion, orthogonal with respect to said second portion and fixed to said frame.
14. Cabinet of an apparatus, said cabinet comprising a frame, at least a door and a disassembleable hinge according to claim 1 or 10.
15. Cabinet of an apparatus according to claim 14, comprising also a compressible gasket (20); said compressible gasket (20) being positioned between said door and said frame and being susceptible of being compressed when said hinge is in said first operating configuration.

16. Cabinet of an apparatus according to claim 15, wherein when compressed said gasket keeps a pressure gradient between an inner side of said cabinet and the outside.

Patentansprüche

1. Auseinanderbaubares Gelenk, aufweisend:

- eine feste Baugruppe (A), welche zum Verbinden an einen Rahmen ausgeführt ist; und
- eine bewegliche Baugruppe (B, C), welche zum Verbinden an eine Tür ausgeführt ist;

wobei die bewegliche Baugruppe in Bezug auf eine Rotationsachse des Gelenks drehbar auf der festen Baugruppe montiert ist; wobei die feste Baugruppe eine Drehachse (A2) aufweist, der die Rotationsachse des Gelenks definiert, wobei die bewegliche Baugruppe zwei Elemente aufweist, welche in Bezug auf eine Rotationsachse (Y) der beweglichen Baugruppe (B, C) drehbar aneinander montiert sind, wobei die Rotationsachse der beweglichen Baugruppe (Y) parallel zur Rotationsachse (X) des Gelenks ist; wobei in jedem der Elemente zumindest ein Sitz (B2l, B2L) für die Drehachse (A2) vorgesehen ist; wobei die bewegliche Baugruppe zumindest eine erste und eine zweite Betriebskonfiguration hat; wobei in der ersten Betriebskonfiguration die Elemente (B, C) derart gedreht werden, dass die Drehachse (A2) eingefangen wird; wobei in der zweiten Betriebskonfiguration die Elemente (B, C) derart gedreht werden, dass die Drehachse (A2) freigegeben wird; wobei ein erstes (B) der Elemente (B, C) mit der Tür verbunden ist; wobei ein zweites (C) der Elemente (B, C) drehbar in Bezug auf das erste Element (B) montiert ist; wobei das Gelenk **dadurch gekennzeichnet ist, dass** es ein intermediäres Freigabesystem (10, 11, 12, 40, 41) aufweist, das zum Realisieren einer dritten Betriebskonfiguration einer Teilöffnung fähig ist, welches zum Bereitstellen eines begrenzten freien Schlags zwischen der festen Baugruppe und der beweglichen Baugruppe ausgeführt ist, während die komplette Freigabe der beweglichen Baugruppe verhindert wird; wobei das intermediäre Freigabesystem (10, 11, 12, 40, 41) eine Stützebene (10) aufweist und wobei in der dritten Betriebskonfiguration die Drehachse (A2) von der Stützebene (10) gehalten wird, welche verschiebbar auf der beweglichen Baugruppe montiert ist.

2. Gelenk nach Anspruch 1, wobei die Stützebene (10) in einer Ebene angeordnet ist, die orthogonal zur Rotationsachse (X) des Gelenks ist.
3. Gelenk nach Anspruch 1, wobei die Stützebene (10)

zwischen einer ersten und einer zweiten Betriebskonfiguration konfiguriert werden kann; wobei in der ersten Betriebskonfiguration die Stützebene (10) der Drehachse (A2) gegenübersteht.

4. Gelenk nach Anspruch 3, wobei in der zweiten Betriebskonfiguration die Stützebene (10) der Drehachse (A2) nicht gegenübersteht.
5. Gelenk nach Anspruch 4, wobei in der zweiten Betriebskonfiguration, die Stützebene (10) sich in einer eingefahrenen Position in dem Element (B) befindet.
6. Gelenk nach Anspruch 1, ferner aufweisend einen Stift (11) zum Kontrollieren der Stützebene (10).
7. Gelenk nach Anspruch 6, wobei der Stift (11) sich orthogonal bezüglich der Stützebene erstreckt und aus dem Element (B) herausragt.
8. Gelenk nach Anspruch 6, ferner aufweisend eine Kontrastfeder (12), wobei die Kontrastfeder (12) ein zum Element (B) festgelegtes erstes Ende und ein zum Stift (11) festgelegtes zweites Ende aufweist und auf ihr eine Kontrastkraft wirkt, die ausgeführt ist, die Stützebene (10) in der ersten Betriebskonfiguration in einem Ruhezustand zu positionieren.
9. Gelenk nach Anspruch 8, wobei die Drehachse (A2) einen schrägen Teil aufweist, der ausgeführt ist, mit einem schrägen vorderen Teil der Stützebene (10) gekoppelt zu werden.
10. Auseinanderbaubares Gelenk, aufweisend:
 - eine feste Baugruppe (A), welche zum Verbinden an einen Rahmen ausgeführt ist; und
 - eine bewegliche Baugruppe (B, C), welche zum Verbinden an eine Tür ausgeführt ist;

wobei die bewegliche Baugruppe in Bezug auf eine Rotationsachse des Gelenks drehbar auf der festen Baugruppe montiert ist; wobei die feste Baugruppe eine Drehachse (A2) aufweist, der die Rotationsachse des Gelenks definiert, wobei die bewegliche Baugruppe zwei Elemente aufweist, welche in Bezug auf eine Rotationsachse (Y) der beweglichen Baugruppe (B, C) drehbar aneinander montiert sind, wobei die Rotationsachse der beweglichen Baugruppe (Y) parallel zur Rotationsachse (X) des Gelenks ist; wobei in jedem der Elemente zumindest ein Sitz (B2I, B2L) für die Drehachse (A2) vorgesehen ist; wobei die bewegliche Baugruppe zumindest eine erste und eine zweite Betriebskonfiguration hat; wobei in der ersten Betriebskonfiguration die Elemente (B, C) derart gedreht werden, dass der Zapfen (A2) eingefangen wird; wobei in der zweiten Betriebskonfiguration die Elemente (B, C) derart gedreht werden,

dass die Drehachse (A2) freigegeben wird; wobei ein erstes (B) der Elemente (B, C) mit der Tür verbunden ist; wobei ein zweites (C) der Elemente (B, C) drehbar in Bezug auf das erste Element (B) montiert ist; wobei das Gelenk **dadurch gekennzeichnet ist, dass** es ein intermediäres Freigabesystem (10, 11, 12, 40, 41) aufweist, das zum Realisieren einer dritten Betriebskonfiguration einer Teilöffnung fähig ist, welches zum Bereitstellen eines begrenzten freien Schlags zwischen der festen Baugruppe und der beweglichen Baugruppe ausgeführt ist, während die komplette Freigabe der beweglichen Baugruppe verhindert wird; wobei das intermediäre Freigabesystem (40, 41) ein Verschlusselement (40) aufweist, welches auf der festen Baugruppe (A) und einem Eingreifelement (41) festgelegt und montiert ist; wobei das Eingreifelement (41) auf der beweglichen Baugruppe montiert ist; wobei das Eingreifelement ausgeführt ist, lösbar in das Verschlusselement einzugreifen.

11. Gelenk nach Anspruch 10, wobei das Eingreifelement eine Stufe (41) ist.
12. Gelenk nach Anspruch 11, wobei das Verschlusselement zumindest einen flexiblen Eingreifabschnitt aufweist und mit einem Ende versehen ist, das eine Stufenausnehmung (40d) aufweist, die ausgeführt ist, in die Stufe (41) einzugreifen.
13. Gelenk nach Anspruch 12, wobei der flexible Eingreifabschnitt ein zweiter Abschnitt des Verschlusselements (40) ist und wobei das Verschlusselement (40) ferner einen ersten Abschnitt aufweist, der orthogonal in Bezug auf den zweiten Abschnitt und an dem Rahmen befestigt ist.
14. Gehäuse einer Vorrichtung, wobei das Gehäuse einen Rahmen, zumindest eine Tür und ein auseinanderbaubares Gelenk nach Anspruch 1 oder 10 aufweist.
15. Gehäuse einer Vorrichtung nach Anspruch 14, ferner aufweisend eine komprimierbare Dichtung (20); wobei die komprimierbare Dichtung (20) zwischen der Tür und dem Rahmen angeordnet ist und ausgeführt ist, komprimiert zu werden, wenn das Gelenk in der ersten Betriebskonfiguration ist.

16. Gehäuse einer Vorrichtung nach Anspruch 15, wobei die Dichtung, wenn sie komprimiert wird, einen Druckgradienten zwischen einer inneren Seite des Gehäuses und dem Äußeren aufrechterhält.

Revendications

1. Charnière démontable comprenant :

- un ensemble fixe (A) conçu pour être associé à un bâti ; et
- un ensemble mobile (B, C) conçu pour être associé à une porte ;

ledit ensemble mobile est monté de manière rotative sur ledit ensemble fixe selon un axe de rotation de la charnière ; ledit ensemble fixe comprenant un pivot (A2) qui définit ledit axe de rotation de la charnière, ledit ensemble mobile comprenant deux éléments montés ensemble de manière rotative selon un axe de rotation (Y) de l'ensemble mobile (B, C), ledit axe de rotation de l'ensemble mobile (y) est parallèle audit axe de rotation (X) de ladite charnière ; dans chacun desdits éléments, au moins un siège (B2I, B2L) est obtenu pour ledit pivot (A2) ; ledit ensemble mobile présente au moins une première et une seconde configurations de fonctionnement ; dans ladite première configuration de fonctionnement, lesdits éléments (B, C) sont tournés de manière à piéger ledit pivot (A2) ; dans ladite seconde configuration de fonctionnement, lesdits éléments (B, C) sont tournés de manière à libérer ledit pivot (A2) ; un premier (B) desdits éléments (B, C) est associé à ladite porte ; un second (C) desdits éléments (B, C) est monté en rotation par rapport audit premier élément (B) ; ladite charnière est **caractérisée en ce qu'elle** comprend un système d'ouverture intermédiaire (10, 11, 12 ; 40, 41) capable de réaliser une troisième configuration de fonctionnement d'ouverture partielle, apte à produire un secteur limité de course libre entre ledit ensemble fixe et ledit ensemble mobile, tout en empêchant l'ouverture complète dudit ensemble mobile ; dans laquelle, ledit système d'ouverture intermédiaire (10, 11, 12) comprend un plan de support (10) et dans laquelle, dans ladite troisième configuration, ledit pivot (A2) est retenu par ledit plan de support (10) monté de manière coulissante sur ledit ensemble mobile.

2. Charnière selon la revendication 1, dans laquelle ledit plan de support (10) est positionné sur un plan perpendiculaire par rapport audit axe de rotation (X) de ladite charnière.
3. Charnière selon la revendication 1, dans laquelle ledit plan de support (10) peut être configuré entre une première et une seconde configurations de fonctionnement ; dans ladite première configuration de fonctionnement, ledit plan de support (10) est à l'opposé dudit pivot (A2).
4. Charnière selon la revendication 3, dans laquelle, dans ladite seconde configuration de fonctionnement, ledit plan de support (10) n'est pas à l'opposé dudit pivot (A2).

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5. Charnière selon la revendication 4, dans laquelle, dans ladite seconde configuration de fonctionnement, ledit plan de support (10) est dans une position rétractée à l'intérieur dudit élément (B).

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6. Charnière selon la revendication 1, comprenant également une tige (11) pour contrôler ledit plan de support (10).

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7. Charnière selon la revendication 6, dans laquelle ladite tige (11) s'étend perpendiculairement par rapport audit plan de support, et fait saillie vers l'extérieur dudit élément (B).

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8. Charnière selon la revendication 6, comprenant également un ressort de rappel (12) ; ledit ressort de rappel (12) ayant une première extrémité contrainte audit élément (B) et une seconde extrémité contrainte à ladite tige (11) exerçant sur elle une force opposée, susceptible de mettre au repos ledit plan de support (10) dans ladite première configuration de fonctionnement.

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9. Charnière selon la revendication 8, dans laquelle ledit pivot (A2) comprend une partie en biseau, susceptible de s'accoupler à une partie avant en biseau dudit plan de support (10).

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10. Charnière démontable comprenant :

- un ensemble fixe (A) conçu pour être associé à un bâti ; et
- un ensemble mobile (B, C) conçu pour être associé à une porte ;

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ledit ensemble mobile est monté de manière rotative sur ledit ensemble fixe selon un axe de rotation de la charnière ; ledit ensemble fixe comprenant un pivot (A2) qui définit ledit axe de rotation de la charnière, ledit ensemble mobile comprenant deux éléments montés ensemble de manière rotative selon un axe de rotation (Y) de l'ensemble mobile (B, C), ledit axe de rotation de l'ensemble mobile (y) est parallèle audit axe de rotation (X) de ladite charnière ; dans chacun desdits éléments, au moins un siège (B2I, B2L) est obtenu pour ledit pivot (A2) ; ledit ensemble mobile présente au moins une première et une seconde configurations de fonctionnement ; dans ladite première configuration de fonctionnement, lesdits éléments (B, C) sont tournés de manière à piéger ledit pivot (A2) ; dans ladite seconde configuration de fonctionnement, lesdits éléments (B, C) sont tournés de manière à libérer ledit pivot (A2) ; un premier (B) desdits éléments (B, C) est associé à ladite porte ; un second (C) desdits éléments (B, C) est monté en rotation par rapport audit premier élément (B) ; ladite charnière est **caractérisée en ce qu'elle** comprend un système

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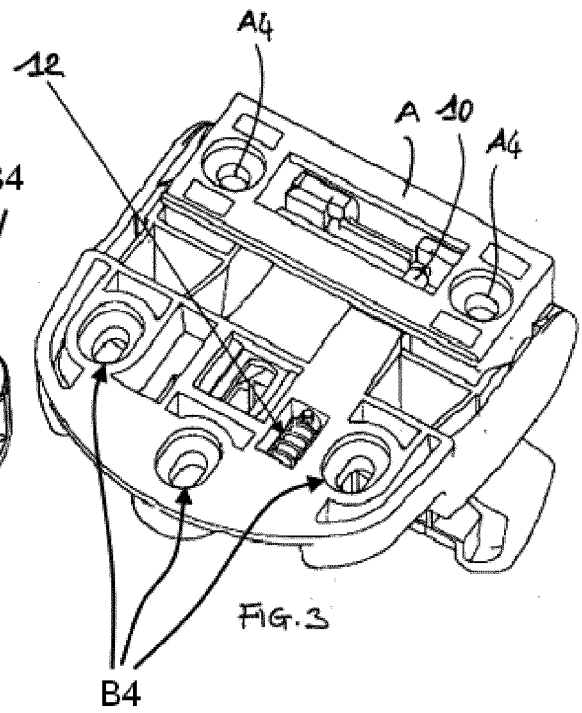
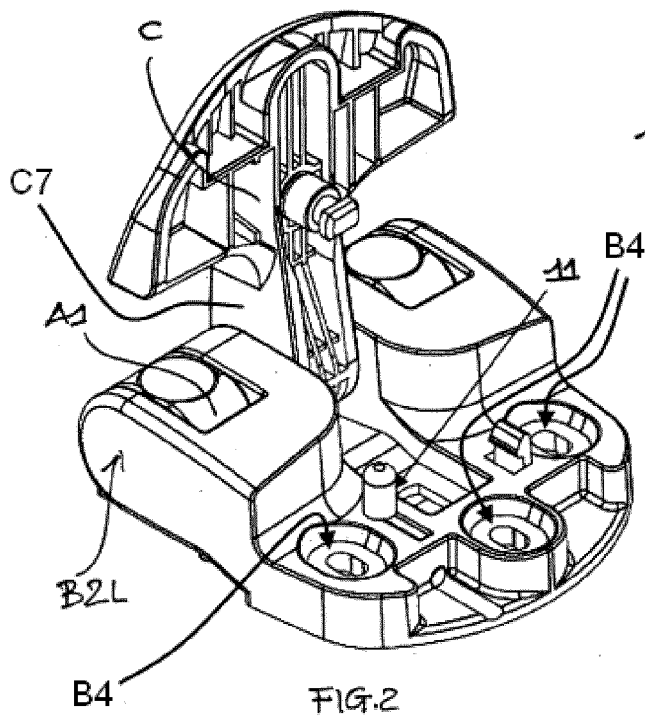
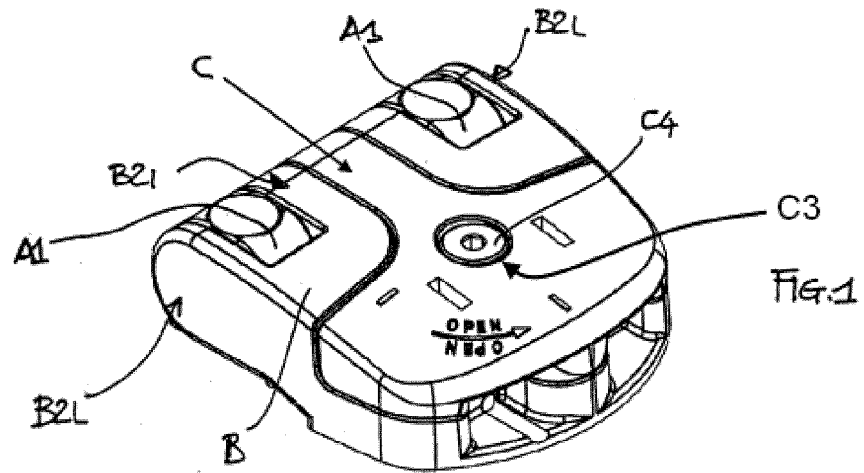
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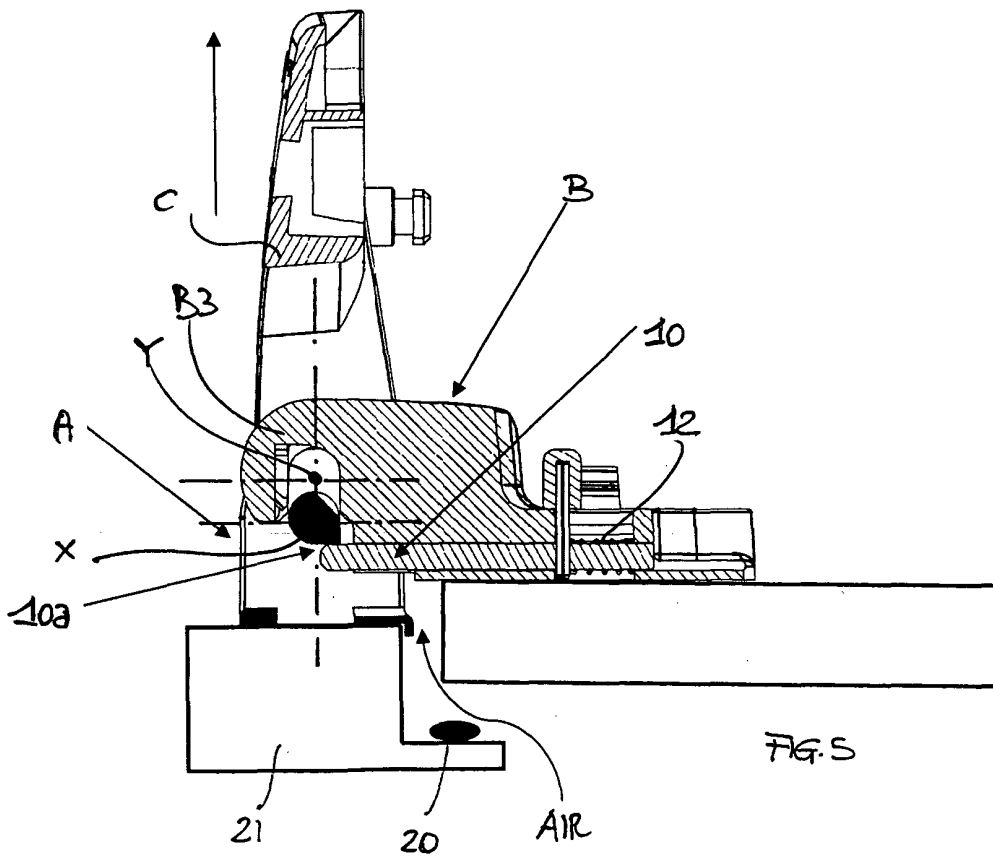
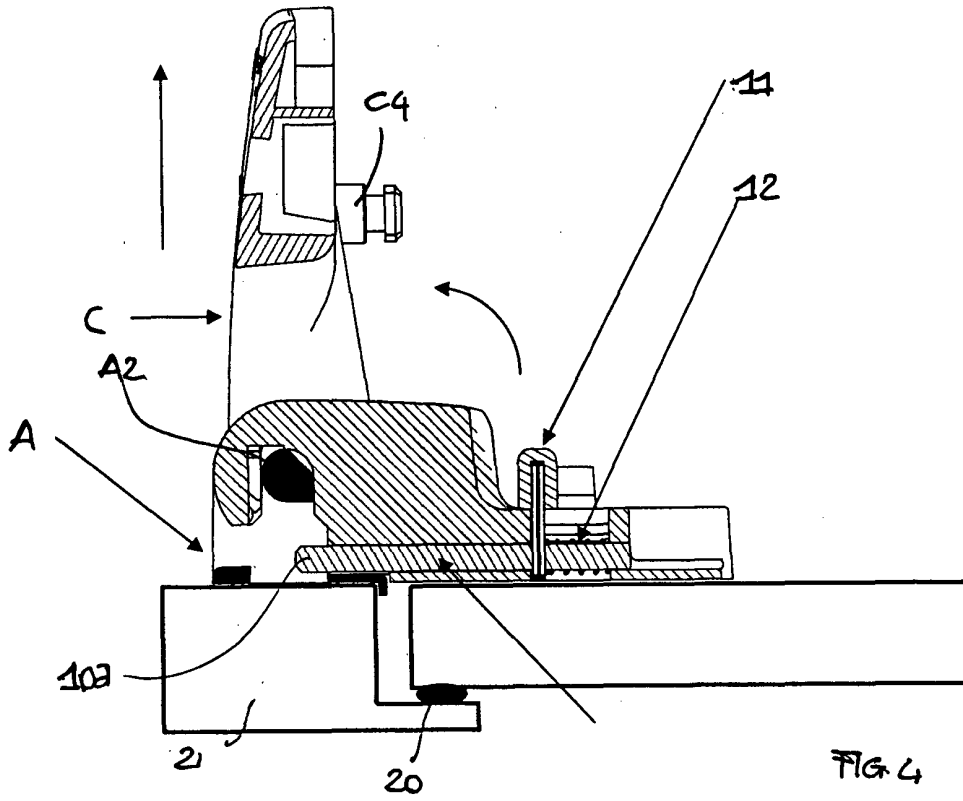
d'ouverture intermédiaire (10, 11, 12 ; 40, 41) capable de réaliser une troisième configuration de fonctionnement d'ouverture partielle, apte à produire un secteur limité de course libre entre ledit ensemble fixe et ledit ensemble mobile, tout en empêchant l'ouverture complète dudit ensemble mobile ; dans laquelle, ledit système d'ouverture intermédiaire (40, 41) comprend un élément de verrouillage (40) à l'état contraint et monté sur ledit ensemble fixe (A) et un élément d'engagement (41) ; ledit élément d'engagement (41) est monté sur ledit ensemble mobile ; ledit élément d'engagement est conçu pour être engagé de manière amovible sur ledit élément de verrouillage.

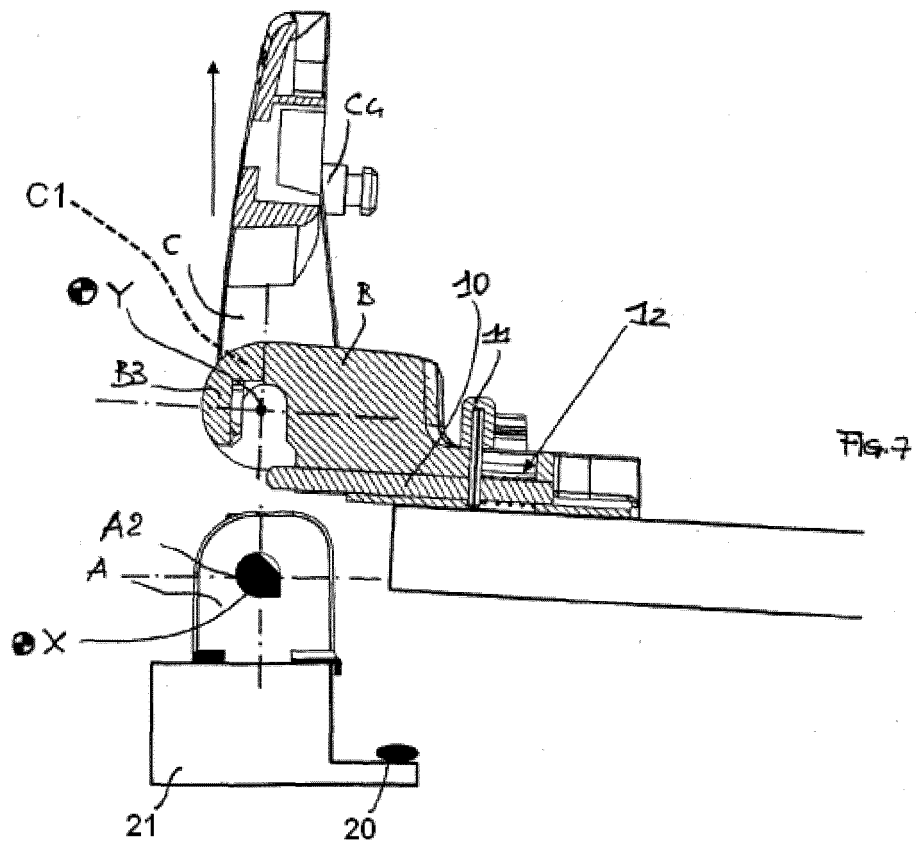
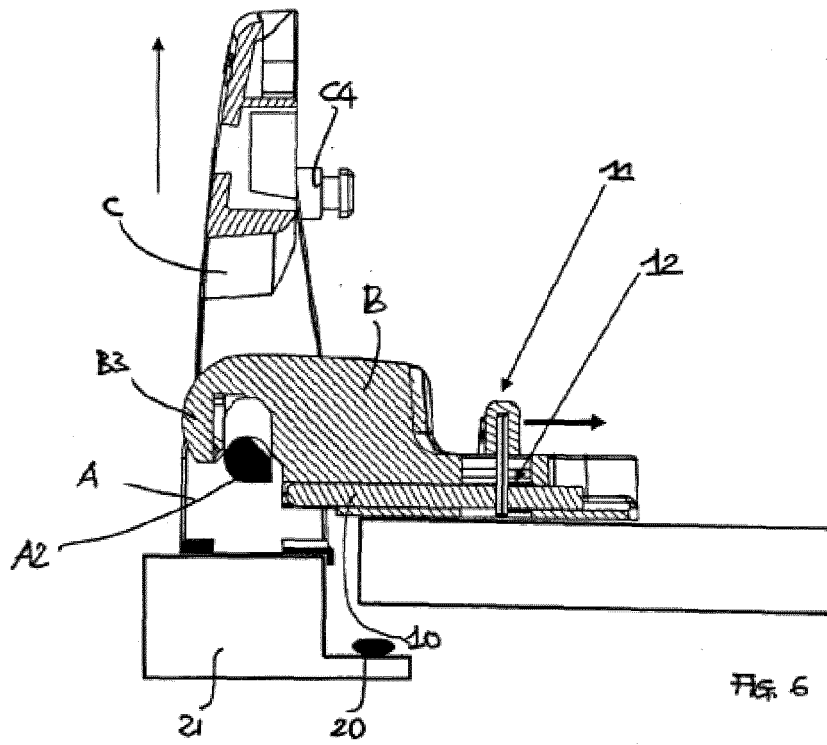
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- 11.** Charnière selon la revendication 10, dans laquelle ledit élément d'engagement est un gradin (41).
- 12.** Charnière selon la revendication 11, dans laquelle ledit élément de verrouillage comprend au moins une partie d'engagement flexible comportant une extrémité ayant un évidement à gradin (40d) conçu pour s'engager sur ledit gradin (41).
- 13.** Charnière selon la revendication 12, dans laquelle ladite partie d'engagement flexible est une seconde partie dudit élément de verrouillage (40), et dans laquelle ledit élément de verrouillage (40) comprend également une première partie, perpendiculaire par rapport à ladite seconde partie et fixée audit bâti.
- 14.** Armoire d'un appareil, ladite armoire comprenant un bâti, au moins une porte et une charnière démontable selon la revendication 1 ou 10.
- 15.** Armoire d'un appareil selon la revendication 14, comprenant également un joint compressible (20) ; ledit joint compressible (20) est positionné entre ladite porte et ledit bâti, et est conçu pour être comprimé lorsque ladite charnière est dans ladite première configuration de fonctionnement.
- 16.** Armoire d'un appareil selon la revendication 15, dans laquelle, lorsqu'il est comprimé, le joint conserve un gradient de pression entre un côté intérieur de ladite armoire et l'extérieur.

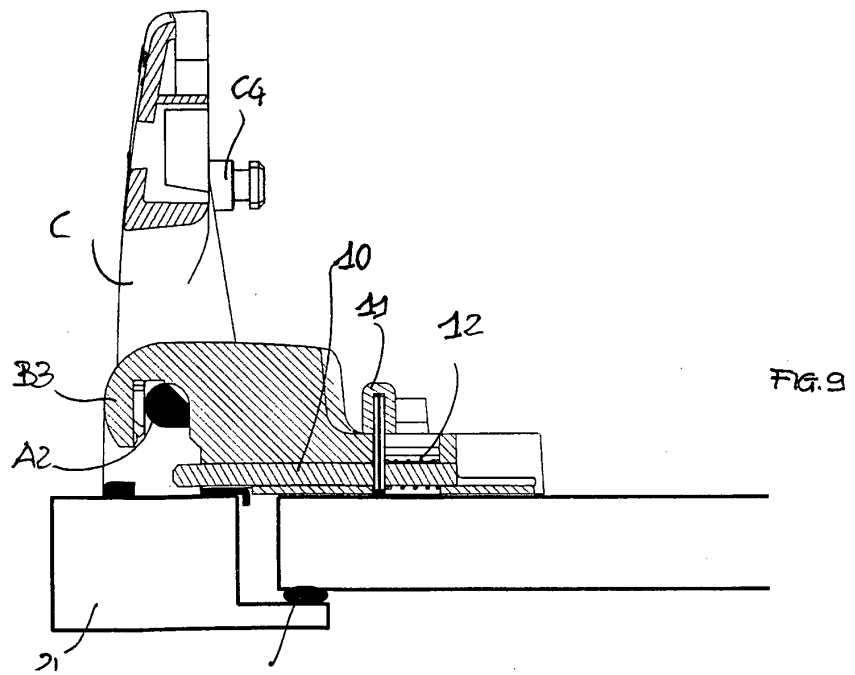
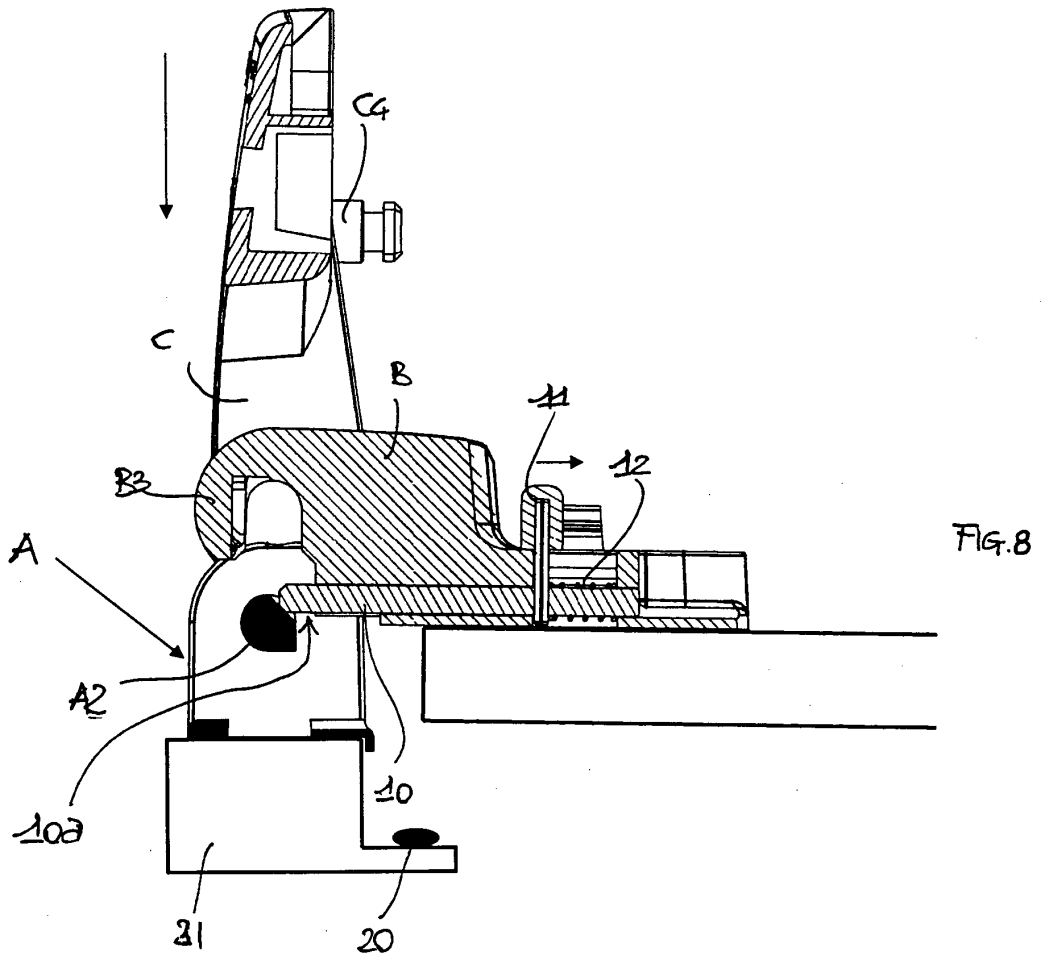
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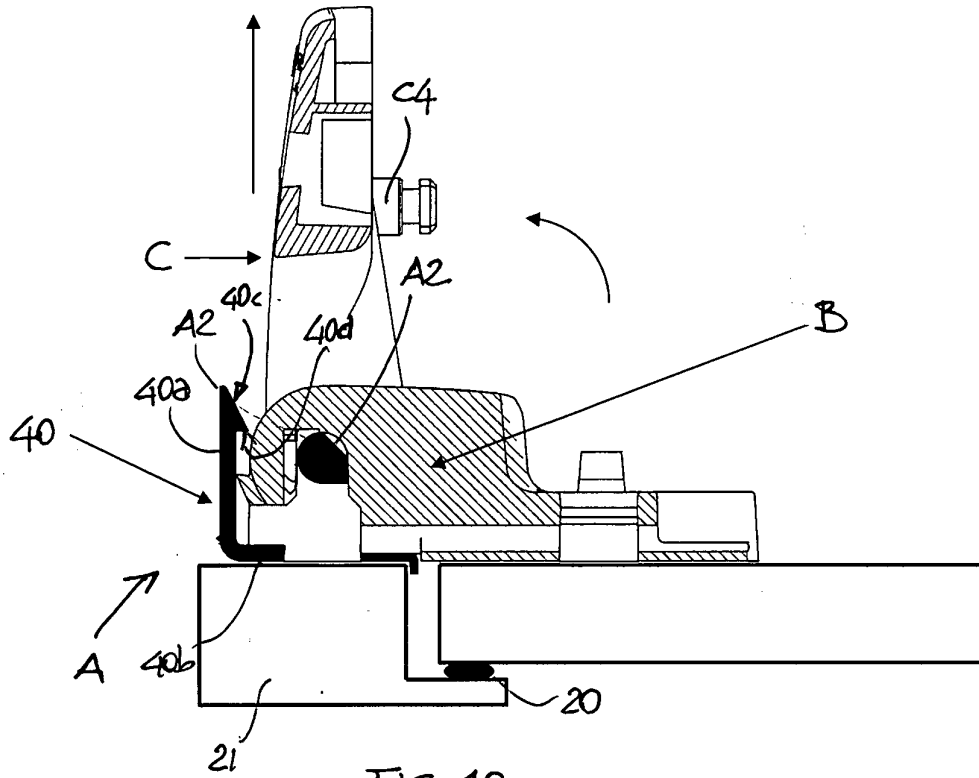


FIG. 10

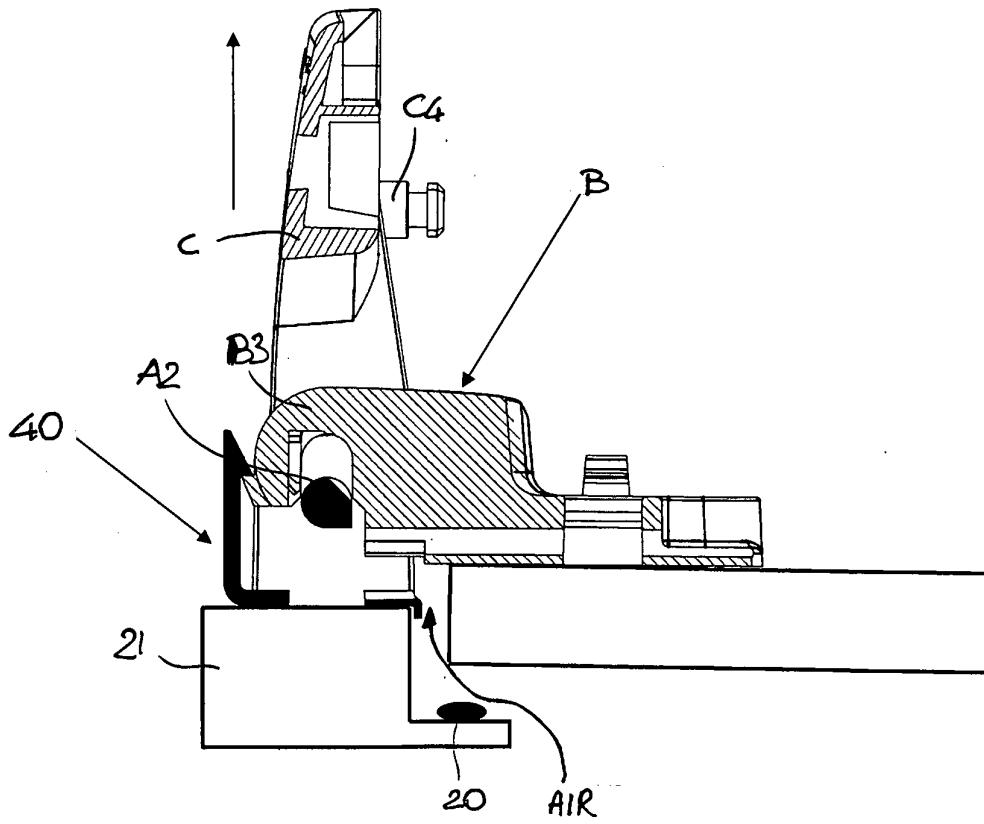


FIG. 11

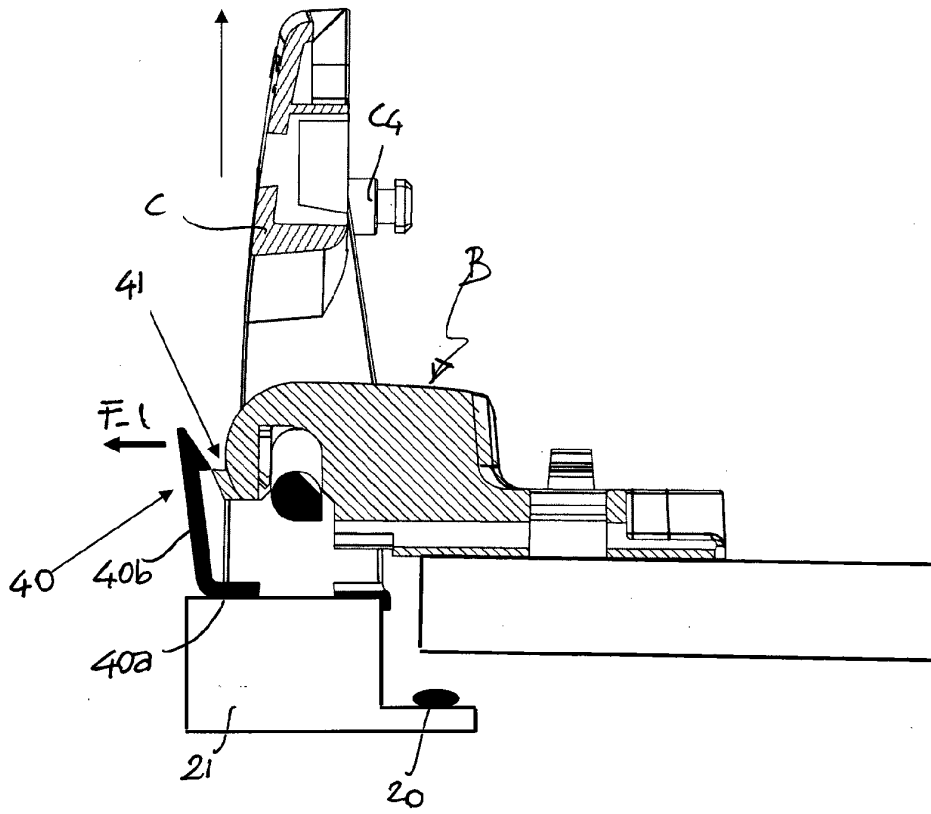


FIG. 12

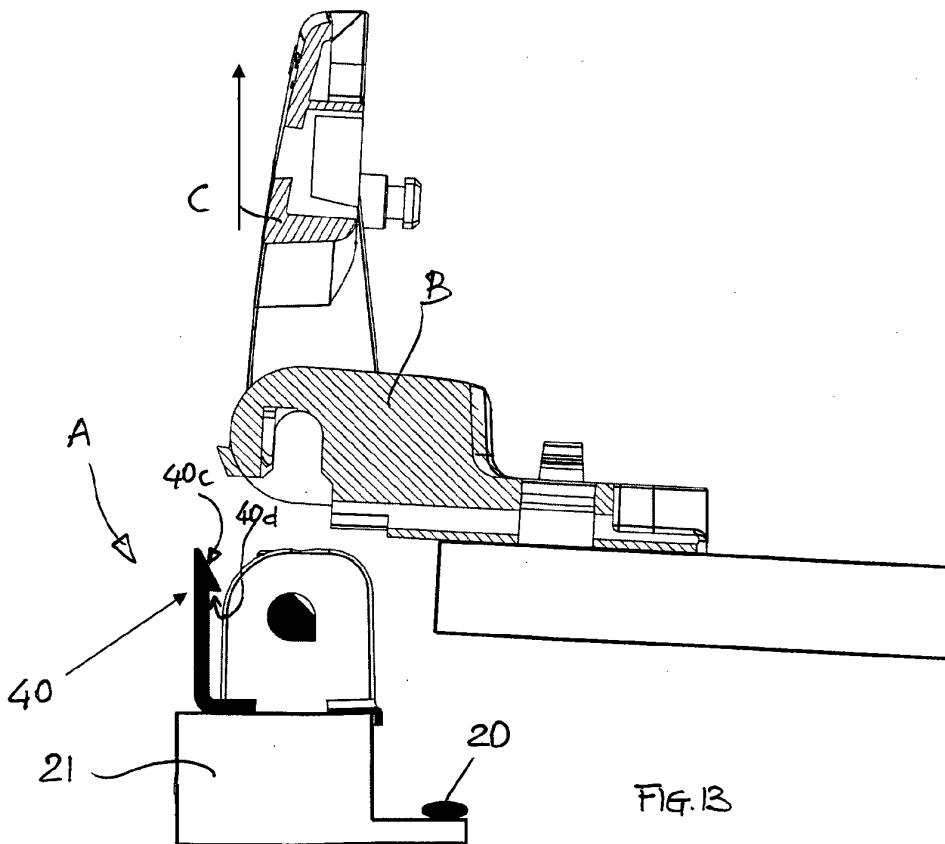


FIG. 13

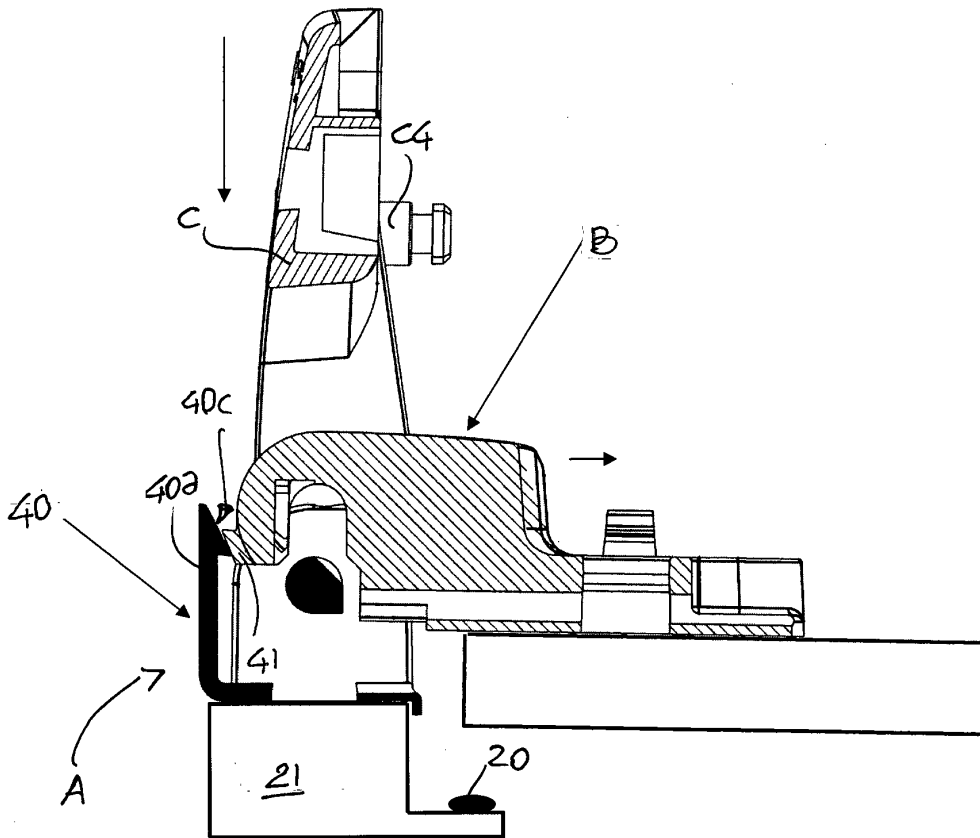


FIG. 14

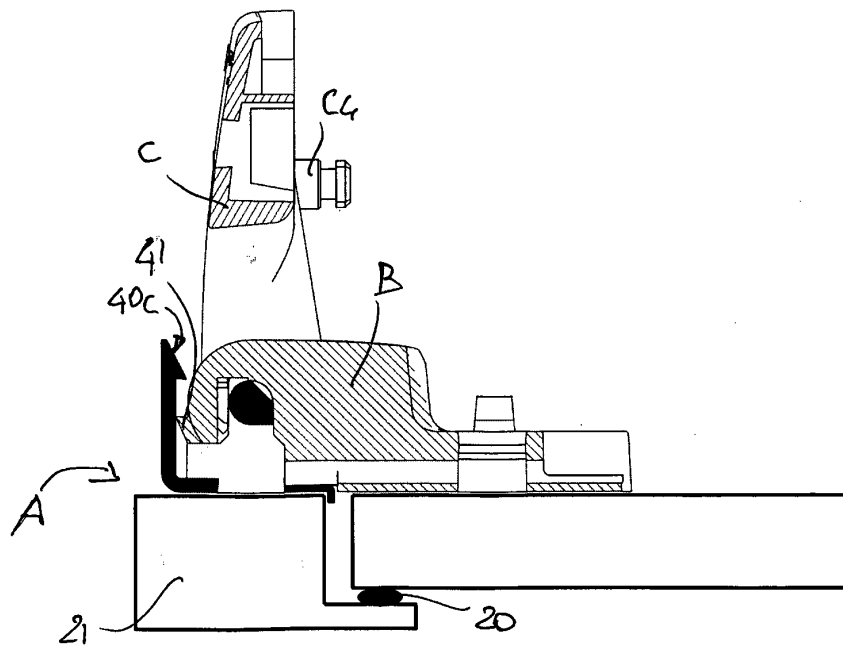


FIG. 15

REFERENCES CITED IN THE DESCRIPTION

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