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(54) DOOR WITH CLOSING PROFILE AND INTEGRATED VENTILATION

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(56) References cited:

**EP-A- 0 230 998 EP-A- 0 497 134
WO-A-03/078780 CH-A- 429 103
DE-C- 911 376 DE-U1- 29 721 460
GB-A- 1 237 280 GB-A- 2 123 068
JP-A- 2003 262 076**

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Description

[0001] The present invention relates to a door assembly comprising a door and a door frame mountable in a wall opening and a number of circumferential profiles fixable to the door and/or the door frame for optically closing gaps between the door and the wall opening.

[0002] EP-B-0645517 describes a door assembly consisting of a door sheet, jambs and jamb-linings which are to be fitted in a wall opening pertaining thereto. The door is rotatable about a pivot axis on the left or right hand side and may be a two-way door or a one-way door, i.e. a door which opens in one direction only or in both directions. The door and the jamb are provided with complementary bumper and abutment profiles. On at least one side, the bumper profile and abutment profile comprise a length-ways extending, co-operating concave recess and convex projection to retain the door in a closed position. The door is opened by exerting a pressure on the door in a way the convex projection is pulled out of the concave recess.

[0003] The profiles which are disclosed in EP-B-0645517 function well. However, practice has shown that since the concave recess snugly fits in the convex projection, the pressure which has to be exerted to open the door is very high. As a result, some users prefer to adjust the position of the door in such a way that a small gap is left between the concave recess and the convex projection. This reduces the pressure needed for opening the door, but enables light to shine through, which may be considered a disadvantage.

[0004] EP0497134 discloses a gate leaf which is provided with aerating openings for air transfer between the space adjoining the outside of the gate leaf on the one hand and the space adjoining the inside of the gate leaf on the other hand. The aerating openings are provided in a seal which they pass through and which is fixed by means of a holding strip on the lower end wall of the lower edge of the gate leaf.

[0005] It is an object of the invention to provide a door assembly comprising a door mounted in a wall opening, in which gaps between the door and the wall opening are optically closed and which comprises an integrated ventilation system which cannot be seen from outside.

[0006] This object is achieved with a door assembly showing the technical characteristics of the independent claim 1.

[0007] The door assembly according to the present invention comprises a door and a door frame which are mounted in a wall opening. The door assembly further comprises a number of circumferential profiles. Each of the circumferential profiles preferably comprises a mounting member by means of which the circumferential profile is mounted to a reveal part of the door or the door frame. Each of the circumferential profiles preferably further comprises a sealing member provided for optically closing the gaps between the door and the wall opening, i.e. between the door and the door frame and/or between

the door and the floor.

[0008] The door may comprise one door panel or two or more door panels, for instance a front and a back door panel or an upper and lower door panel. Optionally, the door comprises an oblong grip profile which extends over an entire dimension of the door and divides the door into separate door panel segments extending on opposite sides of the grip profile, e.g. an upper and a lower door panel segment or a left hand and a right hand door panel segment or in both an upper left, upper right, lower left and lower right panel segment. Examples of grip profiles of this type are described in detail in EP-A-1696090, which is incorporated by reference herein in its entirety. As used herein, with grip profile is meant a profile which can in itself function as a grip and/or a profile which is provided for mounting a grip.

[0009] The door assembly according to the present invention is characterized in that at least a first of the circumferential profiles comprises an integrated ventilation system and is constructed such, as defined in claim 1, that the integrated ventilation system is hidden in the profile and penetration of light therethrough is avoided.

[0010] In order to allow air flow from one room to another, the door assembly according to the present invention comprises an integrated ventilation system which is invisible from outside. The integrated ventilation system is hidden in at least one of the profiles of the door assembly and is provided in a way that light passing through the ventilation system is avoided. The integrated ventilation system may be provided in a circumferential profile, or in case the door assembly comprises a grip profile in both a circumferential profile and a grip profile.

[0011] In embodiments of the present invention, a closing profile is provided which is characterized in that the flexible member is longitudinally divided into two wings, each being provided for engaging the complementary edge part and maintaining the closed position in one direction of opening the door, the wings being bendable independently from each other towards the mounting member.

[0012] The closing profile is provided for releasably maintaining a door in a closed position. The closing profile comprises at least two members which are connected to each other, more particularly a mounting member and a flexible member. A hollow space is left between the mounting member and the flexible member. The mounting member is mounted to a reveal part of a first member of a door assembly, for instance a vertical or horizontal door frame or a vertical or horizontal edge of a door. The flexible member is divided into two wings. Each of the wings cooperates with a complementary edge part of a second member of a door assembly adjacent the first member of the door assembly, for instance an adjacent vertical or horizontal edge of a door or a vertical or horizontal edge of a door frame. Because both wings contact a complementary edge part of an adjacent member of a door assembly, the wings close possible gaps between the door and the door frame, between the door and the

surrounding wall or between subsequent doors. As a result, because the door may close off one room from another, the door may be used in a number of different situations. The door may for instance be used as a fire door, acoustic isolating door, thermal isolating door,...

[0013] An analysis of the problem of the prior art has shown that the high pressure needed for opening the door is caused by the fact that the whole flexible member, i.e. the parts of the bumper profile on both sides of the concave recess, have to be deformed to push the convex protrusion out of the recess. Notwithstanding the fact that the above mentioned closing profile still substantially perfectly closes off the gap, it is no longer necessary to exert very high pressures on the door in order to open it. This is due to the construction with two wings of the flexible member which are independently bendable from each other towards the mounting member. When the door is to be opened in a certain direction, only one of the two wings is bent towards the mounting member, while the other is not deformed. As a result, not the whole flexible member of the closing profile is deformed as was the case in the prior art and the pressure to be exerted on the door in order to open it, may be reduced as compared to the prior art.

[0014] Another advantage of the fact that only part of the flexible member is deformed and less pressure has to be exerted on the door to open or close it, is that the flexible member and the complementary edge part on the opposite member of the door assembly experience less friction, so that wear on these parts can be reduced.

[0015] Preferably, the closing profile further comprises a flexible lip for further closing off the door and avoiding gaps between adjacent door assembly members. The flexible lip is provided on the mounting member and extends in a gap between the two wings of the flexible member of the closing profile. In use, the flexible lip contacts the complementary edge part of an adjacent member of a door assembly. In this way, the closing profile provides for a tree-point closing off system: the two wings and the flexible lip each contact the complementary edge part of an adjacent member of a door assembly and are independently bendable from each other.

[0016] The flexible lip preferably comprises a plurality of tearable strips connected to each other by weak portions. This makes it possible to adjust the length of the flexible lip in order to assure contact between the closing profile and the complementary edge part of an adjacent member of a door assembly. It is for instance possible that the shape of the complementary edge part of the adjacent member is a bit irregular along its length or that the wall opening in which the door is mounted is not perfectly straight. This could result in possible gaps between the closing profile and the complementary edge part of the adjacent member. In order to overcome this, the length of the flexible lip may be adjusted by tearing off one or more strips or parts thereof.

[0017] Another advantage of the closing profile is that a 2-way door, i.e. a door which can be opened in two

directions, can be more easily adjusted to a 1-way door, i.e. a door which can only be opened in one direction. With the closing profile, it is not necessary to replace the closing profile or an opposite profile by another profile.

5 This is achieved because of the hollow space which is provided between the two wings and the mounting member. This hollow space is provided for receiving a blocking part for blocking deformation of the wing towards the mounting member. Preferably the same hollow space
10 with the same dimensions is provided between each of the two wings and the mounting member, so that the same blocking part can be inserted in each of these spaces. In this way the same blocking part can be used to block the opening of the door in the one direction as well as in the other direction.

15 **[0018]** The closing profile does not only offer an easier way to switch from a 2-way door to a 1-way door and vice versa. This construction also has the advantage, that the 1-way and 2-way profiles are visually almost identical, since the blocking part is hidden in the hollow space behind the respective wing.

[0019] It is not necessary that the closing profile has a convex/concave form that perfectly matches with a concave/convex form of a corresponding edge provided by a door, floor or corresponding profile. The closing profile
25 preferably cooperates with a complementary edge part of an edge profile which comprises a trapezoidal protrusion on the edge profile. The trapezoidal form has the advantage that less pressure is to be exerted in order to open the door as compared to for example a concave or convex protrusion. Furthermore, the edge part of a glass door also has a trapezoidal form. In this way the same closing profile may be used to cooperate directly with an edge part of a glass door or with an edge profile with a
30 trapezoidal protrusion provided on an adjacent door or door frame.

35 **[0020]** The integrated ventilation system may for instance be provided in a first example of a circumferential profile as has already been described above, namely the edge profile comprising the complementary edge part which the closing profile is provided to engage. The sealing member of this edge profile comprises a trapezoidal protrusion which is provided for closing off gaps between the edge profile and the closing profile, i.e. between the door and the wall opening. This edge profile comprises a mounting member by means of which the edge profile is mounted on a vertical or horizontal edge of the door or door frame, preferably in a snap-fitting way. The trapezoidal protrusion of the sealing member cooperates with
40 a complementary edge part of an adjacent profile, mounted in a vertical or horizontal edge of an adjacent door or door frame. The trapezoidal protrusion cooperates for instance with the flexible member of the closing profile. Because the flexible member of the closing profile contacts the trapezoidal protrusion of the edge profile, gaps between the two profiles are avoided and light cannot penetrate therethrough. However, ventilation is made possible by means of perforations provided in the mount-

ing member of the edge profile. The perforations are made on both sides of the trapezoidal protrusion in a way that air can flow from one room, in particular through the perforations on one side of the trapezoidal protrusion via a space behind the sealing member through the perforations on the other side of the trapezoidal protrusion, into the other room. The amount of ventilation may be varied by varying the size and number of perforations or by providing the perforations along only part of the edge profile. Because the ventilation is integrated in the edge profile, the ventilation system is invisible from outside and the aesthetic appearance of the door remains unchanged.

[0021] The integrated ventilation system may for instance be provided in a second example of a circumferential profile, namely a circumferential profile which comprises a flexible lip with an adjustable length, which is provided for closing off gaps between the door and the wall opening, for instance for closing off gaps between a lower edge part of the door and the floor or between the door and the door frame. This circumferential profile comprises a mounting member by means of which the circumferential profile is mounted on a vertical or horizontal edge of the door or door frame, preferably in a snap-fitting way. The circumferential profile further comprises at least one flexible lip which is provided for closing off gaps between the door or door frame and an adjacent door, door frame, floor or sealing. The flexible lip can be used for closing off gaps of a different height or width because it has an adjustable length. Because the flexible lip contacts an edge part of an adjacent door or door frame or the floor or sealing light cannot penetrate therethrough. However, ventilation is made possible by means of perforations provided in the flexible lip. The perforations are made in the vicinity of the mounting member, so that they are hidden and invisible from the outside. Air can flow from one room to another through the perforations. The amount of ventilation may again be varied by varying the size and number of perforations or by providing the perforations along only part of the circumferential profile.

[0022] In case the door assembly comprises a grip profile, the integrated ventilation system may also be provided in the grip profile. In order to provide good grippability for users, the oblong grip profile preferably has a front, respectively back opening which widens from the front, respectively back surface towards the middle of the door panel segments. A first preferred embodiment of such an integrated ventilation system is provided by what is called herein the "mailbox ventilation system" and a second preferred embodiment of such an integrated system is provided by what is called herein the "insert-grab ventilation system".

[0023] The mailbox ventilation system is provided as follows. The oblong grip profile comprises inwards pivotable plates at the front and back openings of the oblong profile, which visually close off these front and back openings. The inwards pivotability of the plates is provided for enabling a user to push one of the plates inwards to grip

the oblong grip profile at the front or back opening and open or close the door. The plates are mounted in such way that a permanent minimal ventilation gap is present between the oblong profile and the inwards pivotable plates. In this way air can flow from one room to another. Because the plates extend substantially parallel to the door panel segments, the minimal ventilation gap is almost invisible from outside and there is no negative effect on the aesthetic view of the door.

[0024] The insert-grab ventilation system is provided as follows. The oblong grip profile preferably comprises an upper and lower profile, dividing the door in an upper and lower panel segment. The front opening extends between the left hand side of the upper and lower profile and the back opening extends between the right hand side of the upper and lower profile. In this embodiment, the oblong grip profile comprises a ventilation grid provided substantially in the middle of the door panel segments. The perforations in the ventilation grid are substantially invisible from outside because they are provided in an interior space of the grip profile between the narrow front and back openings. Because the front and the back opening of the oblong grip profile widens from the front, respectively back surface towards the middle of the door panel, a substantially invisible space is indeed created in the middle, especially in the vicinity of the upper and lower profile of the oblong grid profile.

[0025] The invention will be further elucidated by means of the following description and the appended figures.

Figure 1 shows a general overview of preferred embodiments of circumferential profiles of door assemblies according to embodiments of the present invention.

Figure 2 shows a cross section of a 2-way closing profile provided in a vertical door frame which cooperates with a corresponding edge profile provided in a vertical edge of a door.

Figure 3 shows a cross section of a 1-way closing profile provided in a vertical door frame which cooperates with a corresponding edge profile provided in a vertical edge of a door.

Figure 4 shows a cross section of a 2-way closing profile provided in a vertical edge of a door which cooperates with a corresponding edge profile provided in a vertical edge of an adjacent door.

Figure 5 shows a cross section of a 1-way closing profile provided in a vertical edge of a door which cooperates with a corresponding edge profile provided in a vertical edge of an adjacent door.

Figure 6 shows a cross section of a 2-way closing profile provided in a vertical door frame which cooperates with a corresponding vertical edge of a glass door.

Figure 7 shows a cross section of a closing profile in an upper horizontal edge of a door which cooperates with a fixed panel provided above the door.

Figures 8 and 9 show an integrated ventilation system provided in the flexible lip of a circumferential profile of a door assembly not according to the present invention.

Figures 10 and 11 show an integrated ventilation system provided in the mounting member of a circumferential profile of a door assembly according to the present invention.

Figures 12-14 show an insert-grab ventilation system provided in an oblong grid profile of a door assembly according to embodiments of the present invention.

Figure 15 shows a mailbox ventilation system provided in an oblong grid profile of a door assembly according to embodiments of the present invention.

[0026] The doors shown in the figures are rotatable about a vertical axis and fit in wall openings. The wall openings may be provided with door frames. The doors may be rotatable in one or in both directions over for example 90°. The doors each time comprise two vertical edges and two horizontal edges. The rotation axis of each door may be provided near one of its vertical edges or somewhere between its first and second vertical edges, i.e. a centrally rotatable door. In some cases a double door is fitted in the wall opening, i.e. two adjacent doors with adjacent vertical edges, as is shown in figures 4 and 5.

[0027] The closing profile shown in figure 1A is applied in each of the cases shown in figures 2-7. The specific area where the closing profile is used is indicated by a circle.

[0028] The closing profile 1 of figure 1A comprises a mounting member 2 which is provided for mounting the closing profile 1 to a first door assembly member 92, for example a door frame or a door edge. The closing profile 1 preferably extends along the whole length of the reveal part to which it is mounted. The closing profile 1 further comprises a flexible member 3 connected to the mounting member 2. The flexible member 3 is shaped for engaging a complementary edge part 13, 94 of a second door assembly member 93. The flexible member 3 of the closing profile 1 is divided into two wings 4, 4' which are bendable independently from each other towards the mounting member 2. Each of the two wings 4, 4' is positioned for contacting a complementary edge part 13 of the second door assembly member 93, to maintain the door in its closed position. At the same time, possible gaps between the first and the second door assembly members can be optically closed to avoid that light passes through it.

[0029] With the closing profile 1 of figure 1A, it is not necessary to exert very high pressures on the door in order to open it. This is due to the construction with the two separate wings 4, 4' of the flexible member 3. Bending of the two wings 4, 4' is possible because the two wings 4, 4' are made in a flexible material and a hollow space 6, 6' is provided between the flexible member 3

and the mounting member 2. When the door is opened or closed in a first direction only one of the two wings 4, 4' is bent towards the mounting member 2. For instance in case the door is opened or closed in a direction indicated by the arrow A as is shown on figure 2, only the upper wing 4' is bent towards the mounting member in a direction indicated by the arrow A as is shown on figure 2. As a result, because only half of the flexible member 3 is deformed when opening or closing a door, the pressure to be exerted on the door for opening or closing the door can be strongly reduced with respect to a unitary flexible member as in the prior art.

[0030] The two wings 4, 4' of the closing profile 1 of figure 1A are bendable about an axis of rotation provided on opposite side parts of the closing profile. This contributes to the strength and the stability of the closing profile 1. However, the axes of rotation may be provided on any other position ought suitable by the person skilled in the art. The two wings 4, 4' of the flexible member 3 of the closing profile 1 of figure 1A comprise sloping end parts 5, 5' for contacting the complementary edge part 13 of the second door assembly member 93. In this way, the closing profile 1 is in particular suited for cooperation with a complementary edge part 13 which comprises a trapezoidal protrusion, for instance an edge profile 11 with a trapezoidal protrusion 13 as shown in figure 1B or an edge 93 of a glass door as shown in figure 7C.

[0031] The closing profile 1 of figure 1A comprises a flexible lip 7 connected to the mounting member 2. The flexible lip 7 is provided in a gap between the two wings 4, 4' and the length of the flexible lip 7 is such that it also contacts the complementary edge part 13 of the second door assembly member 93. In this way, the two wings 4, 4' as well as the flexible lip 7 contact the complementary edge part 13 of the second door assembly member 93, resulting in an even better optical closing of gaps between the first 92 and the second 93 door assembly member. If desired, more than one flexible lip 7 may be provided in the gap between the two wings 4, 4'. In this way the optical closing of gaps may be further optimized. The flexible lip 7 is made in a flexible material and is preferably non-transparent for light.

[0032] As shown in figure 1A the flexible lip 7 comprises a number of tearable strips 8 connected to each other by weak portions. This makes it possible to use this same closing profile 1 in a number of different situations. A precise contact between the flexible lip 7 and the complementary edge part 13, 94 can be assured, because the length of the flexible lip 7 may be adjusted in a very easy way by simply tearing off one or more of the strips.

[0033] Another advantage of the closing profile 1 of figure 1A is that a 2-way door, as is shown in figure 2, can be easily adjusted to a 1-way door as is shown in figure 3. This is done by placing a blocking part 95 in the hollow space 6, 6' between one of the wings 4, 4' and the mounting member 2 as is shown in figure 3. The blocking part 95 as shown in figure 3 has a hollow shape which fits in the hollow space 6' between one of the wings 4'

and the mounting member 2. The blocking part 95 can however also be a massive piece of material. The blocking part can for example be made in a material which is substantially non-deformable, but this is not essential. In fact, the blocking part can also be formed by a slightly compressible element which is shaped for substantially completely filling out the space 6, 6' between the wing 4, 4' and the mounting member 2, as long as the element as a whole provides sufficient resistance against depression of the wing 4, 4' towards the mounting member 2 to provide the blocking function.

[0034] In the closing profile 1 of figure 1A, the first 6 and second 6' hollow spaces between respectively the first wing 4 and the mounting member 2 and the second wing 4' and the mounting member 2 are substantially identical. In this way the same blocking part 95 can be used for blocking the rotation of the door in either direction, i.e. either one of the directions A and B indicated on figure 2.

[0035] In figures 2, 3 and 6 the first door assembly member 92, to which the closing profile 1 of figure 1A is mounted, is a door frame. In these figures it is shown that the closing profile 1 is not directly mounted on a reveal part of the door frame, but is mounted with the aid of a corresponding profile 21 on a reveal part of the door frame. In fact, in a first step the corresponding profile 21 is mounted with its mounting member 22 on the reveal part of the door frame and in a second step the closing profile 1 is mounted on the corresponding profile 21. This latter mounting is made possible because the mounting member 2 of the closing profile 1 comprises recesses 9, 9' on opposite ends which are snap-fittable onto complementary protrusions 29, 29' of the corresponding profile 21, as is shown in figures 2, 3 and 6. However, any other method for mounting the closing profile 1 on the corresponding profile 21 ought suitable by the person skilled in the art may be used. This mounting may for instance be done with cooperating positioning means on the closing profile 1 and corresponding profile 21, such as for instance cooperating tongues and grooves.

[0036] The corresponding profile 21 which is used in figures 2, 3 and 6 is shown in itself in figure 1C. This profile further comprises a flexible lip 27 in the middle, connected to its mounting member 22 and provided for closing off the gap between the corresponding profile 21 and the closing profile 1. The length of the flexible lip 27 is such that it touches the back side of the mounting member 2 of the closing profile 1 as is shown on figures 2, 3 and 6. This flexible lip 27 of the corresponding profile 21 may also comprise a plurality of tearable strips 28 connected to each other by weak portions providing in an easy way to adjust the length of the flexible lip 27, in a similar way as has been described for the closing profile 1 of figure 1A.

[0037] In figures 4, 5 and 7 the first door assembly member 92, to which the closing profile 1 is mounted, is a rotatable door. In these figures it is shown that the closing profile 1 is directly mounted on a reveal part of the

door, the reveal part being a vertical edge part of the door as is shown in figures 4 and 5, or a horizontal edge part of the door as is shown in figure 7. The reveal part is provided with protrusions complementary to the recesses 9, 9' in the mounting member 2 of the closing profile 1, so that the closing profile 1 can be snap-fitted onto the reveal part.

[0038] In figures 2-5, the second door assembly member 93, with which the closing profile 1 cooperates to hold the door in closed position, is formed by an edge profile 11 mounted on the horizontal or vertical door edge. This edge profile 11 is shown in detail in figure 1B and comprises a trapezoidal protrusion 13, which is in use contacted by the sloping end parts 5, 5' of the wings 4, 4' of the closing profile 1. So this trapezoidal protrusion 13 forms a sealing member of the edge profile 11. However, any other shape ought suitable by the person skilled in the art may be also used instead of the trapezoidal shape, for instance a parabolic shape. The trapezoidal protrusion 13 is provided on a mounting member 12 with recesses 19 on opposite ends to enable the edge profile 11 to be snap-fitted on the reveal part of the door edge. The shape of the mounting member 12 of the edge profile 11 corresponds to that of the mounting member 2 of the closing profile 1, so that they are in fact interchangeable. For example in figures 4 and 5 it is clear that if the edge profile 11 and the closing profile 1 are switched places, the result would be the same. However any other means ought suitable by the person skilled in the art may be used for fixing the edge profile 11 to members of the door assembly, for instance a protrusion on opposite ends of the edge profile which fits in corresponding openings of the door.

[0039] In figures 6 and 7, the second door assembly member 93, with which the closing profile 1 cooperates to hold the door in closed position, is formed by an edge 94 of a glass door and a fixed panel above the door. Remark that the trapezoidal shape of the edges of the glass door and fixed panel corresponds to the trapezoidal shape of the edge profile 11 of figure 1B, which is an advantage of using the trapezoidal shape in the edge profile 11.

[0040] In general, it is preferred that the circumferential profiles 1, 11, 21, 31, 41, 51 of figure 1 are symmetric profiles. For example for the closing profile 1 of figure 1A, the symmetric shape is an easy way to provide the same hollow space 6, 6' between the first wing 4 and the mounting member 2 on the one hand and the second wing 4' and the mounting member 2 on the other hand, which has the advantage as described above. Furthermore, a symmetric profile has the advantage that substantially the same force has to be exerted on the door to open it in directions A and B. A symmetric profile also has the advantage that it is easier to fabricate and to mount. A symmetric profile also has a positive effect on the aesthetic appearance of the door.

[0041] Figure 2 shows the closing profile 1 of figure 1A applied in a 2-way door assembly. A front view of the

door assembly is shown in figure 2A, as well as a horizontal cross-section in figure 2B and a detail on the side of the closing profile 1 in figure 2C. It is clearly shown how in the closed position the trapezoidal protrusion 13 of the edge profile 11, which is mounted onto the door 93, fits in the flexible member 3 of the closing profile 1, which is mounted onto the door frame 92. The wings act with their sloping end parts 5, 5' on the slanting sides of the trapezoidal protrusion 13 to maintain the closed position. The flexible lip 7 of the closing profile 1 contacts the top side of the trapezoidal protrusion 13 to provide a third optical seal which avoids penetration of light through the gap on this side of the door. When a force is applied to open the door in direction A, only the second wing 4' is deformed and pushed towards the mounting member 2 of the closing profile 1. When a force is applied to open the door in direction B, only the first wing 4 is deformed and pushed towards the mounting member 2 of the closing profile 1. On the back side of the door, the gap towards the wall opening is closed off by means of the profiles 31, 41 shown in figures 1 D and 1 F (see below).

[0042] Figure 3 shows the closing profile 1 of figure 1A applied in a 1-way door assembly. A front view of the door assembly is shown in figure 3A, as well as a horizontal cross-section in figure 3B and a detail on the side of the closing profile 1 in figure 3C. The application of figure 3 is in fact the same as that of figure 2, with the difference that a blocking part 95 has been inserted in the space 6' between the second wing 4' and the mounting member 2 of the closing profile 1. Because of this blocking part 95, the door can only be opened in one direction, i.e. the direction towards the arrow B. Rotation of the door in the other direction is prevented because the complementary edge part 13 of the edge profile 11 is blocked by the second wing 4' which is prevented from bending by the blocking part 95.

[0043] In order to convert the application of figure 2 to figure 3, it is sufficient to place the blocking part 95 in the closing profile 1. There is no need to remove the closing profile 1 and replace it with another closing profile. As a result, the conversion can be done easily by the user himself at any time, since no special technical knowledge or personal assistance is needed for this. Another advantage is that the door, after switching from a 2-way door to a 1-way door, can be opened with exerting the same force as before. The reason for this is that the two wings 4, 4' are bendable independently from each other and that the wing 4 which is not blocked by the blocking part 95 remains unchanged after placing the blocking part 95.

[0044] Figure 4 shows the closing profile 1 of figure 1A applied in a 2-way double door assembly. A front view of the double door assembly is shown in figure 4A, as well as a horizontal cross-section in figure 4B and a detail on the side of the closing profile 1 in figure 4C. It is clearly shown how in the closed position the trapezoidal protrusion 13 of the edge profile 11, which is mounted onto one of the doors, fits in the flexible member 3 of the closing

profile 1, which is mounted onto the other door. On the back side of each of the doors, the gap towards the wall opening is again closed off by means of the profiles 31, 41 shown in figures 1 D and 1 F (see below).

[0045] Figure 5 shows the closing profile 1 of figure 1A applied in a 1-way double door assembly. A front view of the double door assembly is shown in figure 5A, as well as a horizontal cross-section in figure 5B and a detail on the side of the closing profile 1 in figure 5C. The application of figure 5 is in fact the same as that of figure 4, with the difference that a blocking part 95 has been inserted in the space 6' between the second wing 4' and the mounting member 2 of the closing profile 1, with the same effects as have been described above with respect to figure 3.

[0046] Figure 6 shows the closing profile of figure 1A applied in a 2-way door assembly. A front view of the door assembly is shown in figure 6A, as well as a horizontal cross-section in figure 6B and a detail of the closing profile 1 on one side of the door in figure 6C. It is clearly shown how, on each side of the doors, the trapezoidal edge 94 of the door fits in the flexible member 3 of the closing profile 1, which is mounted onto both sides of the door frame and also in the top side.

[0047] Figure 7 shows the closing profile 1 of figure 1A applied in a door assembly with a fixed plate above the door. A front view of the door assembly is shown in figure 7A, as well as a vertical cross-section in figure 7B and a detail on the side of the closing profile 1 in figure 7C. It is clearly shown how a lower trapezoidal edge of the plate fits in the flexible member of the closing profile 1 which is mounted on an upper edge part of the door. The gap between the lower edge part of the door and the floor is closed off by means of the profile 51 shown in figures 1 E (see below).

[0048] Figures 8A and 8B show a detailed view of a first embodiment of a circumferential profile 81 not according to the present invention. The circumferential profile 81 comprises a mounting member 82 with which it is mounted to a reveal part of a door or a door frame. Usually, the circumferential profile 81 is mounted to a lower horizontal reveal edge part of the door as is shown in figure 8C to optically close the gap at the bottom side. However, the circumferential profile 81 may be mounted on any reveal part of the door or door frame ought suitable by the person skilled in the art. The circumferential profile 81 further comprises a sealing member 83 for optically closing the gaps between the door and the floor here constructed as two separate parts which are snap-fitted in the mounting member 82. The sealing member 83 comprises two flexible lips 87, 87', which are connected to the mounting member 82. Each of the flexible lips 87, 87' has a length such that it contacts the floor. Each of the flexible lips 87, 87' is divided in a lower part extending between the lower side of the door and the floor and visible from outside, and an upper part hidden in the mounting member 82 and invisible from outside. The lower part of the flexible lips 87, 87' is made in an opaque

flexible material such that light cannot shine through it. The integrated ventilation system 90 is provided in the upper part of the flexible lips 87, 87' by means of perforations. Air can flow from one room through the perforations 90 to another room as is shown in figures 8C and 9A-9C. Preferably, at least one of the two flexible lips 87, 87' comprises a plurality of tearable strips 88, 88' connected to each other by weak portions. The length of the flexible lips can then be adjusted in an easy way by simply tearing of one or more of the strips 88, 88'.

[0049] Figure 1 E shows a detailed view of a second preferred embodiment of a circumferential profile 51 according to the invention. Figure 7B shows the circumferential profile 51 of figure 1 E applied in a door assembly. The circumferential profile 51 shown in figure 1E comprises a mounting member 52 with which it is mounted to a lower horizontal reveal part of a door as is shown in figure 7B. However, the circumferential profile 51 may be mounted on any reveal part of the door or door frame ought suitable by the person skilled in the art. The circumferential profile 51 shown in figure 1 E further comprises a sealing member 57 for optically closing the gaps between the door and the floor. The sealing member 57 comprises a flexible lip which is connected to the mounting member 52. The flexible lip has a length such that it contacts the floor. The flexible lip comprises a plurality of tearable strips 58 connected to each other by weak portions provided for adjusting the length of the flexible lip. The circumferential profile 51 further comprises two flexible wings 54, 54', provided on each side of the flexible lip and bendable towards the mounting member 52. By bending the two flexible wings 54, 54', they can be clicked behind a protrusion 55, 55' provided on the inside of the mounting member 52. In this circumferential profile 51, the integrated ventilation system 60 can be provided in its mounting member 52 or in its flexible lip. The circumferential profile 51 provided with an integrated ventilation system 60 in its mounting member 52 is shown in figure 7B. Perforations are made in the mounting member 52 on both sides of the sealing member 57. Air can flow from one room, through the open space 56 between the first wing 54 and the mounting member 52, through the perforations on a first side of the flexible member, through the open space between the mounting member 52 and the lower side of the door, through the perforations on a second side of the sealing member 57, through the open space 56' between the second wing 54' and the mounting member 52, to the other room. Moreover, air flow can be avoided, by simply clicking one or both wings 54, 54' behind the protrusions 55, 55' on the mounting member 52. Because the perforations are provided in the mounting member, they are hidden and invisible from the outside. It is also possible to provide an additional integrated ventilation system 60 in an upper part of the flexible lip hidden in the door. Air can flow through the perforations from one room to another in the same way as explained above in the first preferred embodiment of the circumferential profile 81.

[0050] Figure 10 shows a third preferred embodiment of a circumferential profile 11 according to the invention. A cross section of the circumferential profile 11 is shown in figure 10A. A top view of the circumferential profile 11 as well as a detail thereof is shown in respectively figure 10B and 10C. Figure 11 shows the circumferential profile 11 applied in a door assembly. A vertical cross section of the door assembly is shown in figure 11 A. A side view of the circumferential profile 11 and a detail thereof is shown in respectively figure 11 B and 11C. The circumferential profile 11 shown in figure 11 A is an edge profile as is shown in figure 1B, which additionally comprises an integrated ventilation system 20. The circumferential profile comprises a mounting member 12 with which it is mounted to a reveal part of a door. However, the circumferential profile 11 may also be mounted on a reveal part of the door frame. The sealing member of the circumferential profile 11 comprises a trapezoidal protrusion 13 which is provided for optically closing off gaps between the circumferential profile 11 and the closing profile 1 according to embodiments of the invention which is mounted in an edge part of a door frame. Ventilation is made possible by means of perforations 20 provided in the mounting member of the circumferential profile 11 on both sides of the trapezoidal protrusion 13. This is shown in detail on figures 10B and 10C. In this way air can flow from one room, in particular through the perforations on one side of the trapezoidal protrusion 13, through a space between the mounting member and the door, through the perforations on the other side of the trapezoidal protrusion 13, into the other room, as is shown in figure 11B and 11C. Because the ventilation 20 is integrated in the circumferential profile 11, the ventilation system is invisible from outside and the aesthetic view of the door remains unchanged.

[0051] Figure 1 D shows a detailed view of a fourth preferred embodiment of a circumferential profile 31 according to the invention. Figures 2-5 show the circumferential profile 31 applied in a door assembly. The circumferential profile 31 in shown in Figure 1 D comprises a mounting member 32 with which it is mounted to a reveal part of a door or a door frame. Usually, the circumferential profile is mounted to a reveal part of a door frame on the hinge side of the door as is shown in figure 2B. However, the circumferential profile may also be mounted on a reveal part of the door. The circumferential profile further comprises a sealing member 37 for optically closing the gaps between the door and the door frame. The sealing member 37 comprises a flexible lip which is connected to the mounting member 32. The flexible lip has a length such that it contacts a complementary edge part 43 of an edge profile 41. A preferred embodiment of such an edge profile 41 is shown in figure 1 F. The edge profile 41 as shown in figure 1 F comprises a mounting member 42 through which it is mounted on a reveal part of a door as is shown in figure 2B. The complementary edge part 43 of the edge profile 41 has a convex shape, which cooperates with the concave shape of the mounting

member 32 of the circumferential profile 31. This system provides for a very safe opening and closing of the door, because when opening the door, fingers cannot be pressed between the edge profile 41 and the circumferential profile 31. The circumferential profile 31 comprises an integrated ventilation system. This ventilation system is provided by means of perforations provided in the mounting member 32 provided on both sides of and in the vicinity of the flexible lip 37. Air can flow from one room, through the perforations on one side of the flexible lip 37, through the open space between the mounting member and an edge part of the door frame, through the perforations on the other side of the flexible lip 37, to the other room.

[0052] Figures 12-14 show a first preferred embodiment of an oblong grip profile 61. Figure 12 shows the different parts that are used to build up the oblong grip profile 61 provided with an integrated ventilation system: two grips 66, 66', two grip mounting parts 67, 67' for mounting the grips 66, 66' on the oblong grip profile 61, an upper 62 and lower 63 oblong profile and either a partition 69 or two perforated plates 70, 70'. A door comprising an oblong grip profile 61 provided with an integrated ventilation system is built up using these parts in the following way.

[0053] Figures 13 and 14 show an oblong grip profile 61 horizontally integrated in a door, the oblong grip profile 61 being provided with an integrated ventilation system and built up using the parts shown in figure 12. The upper 62 and lower 63 oblong profile are placed on a certain distance from each other hereby creating a front 68 and back 68' opening. The front 68 and back 68' opening are provided on the same height. Both the front 68 and back 68' opening are narrow at the surface and widen towards the middle of the grip profile. In the front 68 and back 68' opening a grip 66, 66' is mounted on the oblong grip profile 61 with the aid of the grip mounting fasteners 67, 67'. The oblong grip profile 61 extends over substantially the entire width of the door and divides it into an upper door panel segment and a lower door panel segment. These are in turn respectively formed by upper front and back panels and lower front and back panels. The oblong grip profile 61 has stepped portions which each have a portion for contacting a rear side of the panel. Both the upper 62 and lower 63 oblong profile comprises a groove 64, 65 in the middle of the profile. In these horizontally extending grooves 64, 65, either the partition 69 (figure 13), or the two perforated plates 70, 70' (figure 14) are placed, providing the grip profile 61 with an integrated ventilation system. The partition 69 has a height which is such that a narrow ventilation gap remains at the upper and lower profiles 62, 63. The two perforated plates 70, 70' are mounted such that they are laterally displaceable with respect to each other so that ventilation can be controlled. When the perforations of the plates correspond, the ventilation system is activated. When the perforations of one plate correspond with a non-perforated part of the plate, the ventilation system may be deactivated. Air can

flow from one room, through the front opening, through the ventilation gaps above and below the partition 69 or the perforations in the plates 70, 70' and through the back opening to the other room, as is shown in detail on figure 14C and 14D. The perforations in the plates are invisible from outside because they are provided in the vicinity of the upper 62 and lower 63 oblong profiles. This ventilation system is called the insert-grab ventilation system.

[0054] Other embodiments of this insert-grab ventilation system are possible. The oblong grip profile 61 may for instance be vertically integrated in the door or in a slanting direction. It is for instance possible to mount only one perforated plate 70 in the horizontally extending grooves 64, 65 of the upper 62 and lower 63 oblong profile. The amount of ventilation can be varied by varying the size of the perforations, by providing perforations only near the upper oblong profile or near both the upper and lower oblong profile,... It is possible that no grip 66, 66' is mounted on the oblong grip profile 61. In fact, the oblong grip profile 61 may function in itself as the grip where the door can be opened or closed by placing the hand in the back 68' or front 68 opening of the oblong grip profile 61.

[0055] Figure 15 shows a second preferred embodiment of the oblong grip profile 71. The oblong grip profile 71 is horizontally integrated in a door and is provided with a so called integrated mailbox ventilation system. This is shown in detail on figure 15B. The oblong grip profile 71 comprises an upper 72 and lower 73 oblong profile which are placed on a certain distance from each other hereby creating a front 78 and back 78' opening. The front 78 and back 78' openings are provided on the same height. Both the front 78 and back 78' openings are narrow at the surface and widen towards the middle of the grip profile. The oblong grip profile 71 extends over substantially the entire width of the door and divides it into an upper door panel segment and a lower door panel segment. These are in turn respectively formed by upper front and back panels and lower front and back panels. The oblong grip profile 71 has stepped portions which each have a portion for contacting a rear side of the panel. In the upper oblong profile 72 a front 79 and back 79' plate are mounted respectively near the front 78 and back 78' opening. The front 79 and back 79' plate visually close off the front 78 and back 78' opening of the oblong grip profile 71. The plates 79, 79' can be pushed inwards against the action of leaf springs 81, 81' for enabling a user to grab the lower profile 73 at the front 78 or back 78' opening and open or close the door. The plates are mounted in such a way that a permanent minimal gap is present between the oblong profile and the pivotable plates. Air can flow from one room through the gap 80 between the front plate 79 and the lower profile 73, through the gap 80 between the back plate 79' and the oblong grip profile 71, to the other room.

[0056] Other embodiments of the mailbox ventilation system are possible. The oblong grip profile may for instance be vertically integrated in the door or in a slanting direction. The partition 69 and perforated plates 70, 70'

may be constructed in a luminescent material or provided with luminescent coating to make them glow in the dark.

Claims

1. A door assembly comprising a rotatable door and a door frame mountable in a wall opening and a number of circumferential profiles (11, 31, 51) fixable to the door and/or the door frame for optically closing gaps between the door and the wall opening, at least a first of the circumferential profiles (11, 31, 51) comprising a mounting member (12, 32, 52) by means of which the circumferential profile (11, 31, 51) is mounted to a reveal part of the door or door frame and a sealing member (13, 37, 57) for optically closing the gaps between the door and the wall opening, **characterized in that** said first circumferential profile (11, 31, 51) comprises an integrated ventilation system (20, 60) which comprises perforations in the mounting member (12, 32, 52) on both sides of the sealing member (13, 37, 57) in a way that air can flow from one room through the perforations on one side of the sealing member via a space behind the sealing member and through the perforations on the other side of the sealing member into the other room, said perforations being arranged to be parallel to the reveal part of the door or door frame to which said first circumferential profile (11, 31, 51) is fixed, such that the integrated ventilation system is hidden in the profile (11, 31, 51) and penetration of light there-through is avoided.
2. A door assembly according to claim 1, **characterized in that** the sealing member comprises at least one flexible lip (37, 57) with an adjustable length.
3. A door assembly according to claim 2, **characterized in that** the flexible lip comprises a plurality of tearable strips (38, 58) connected to each other by weak portions.
4. A door assembly according to any one of the claims 2-3, **characterized in that** the integrated ventilation system (90) is further provided in the at least one flexible lip by means of perforations in the vicinity of the mounting member.
5. A door assembly according to any one of the claims 1-4, **characterized in that** the door comprises an oblong grip profile (61, 71) which divides the door into separate door panel segments extending on opposite sides of the grip profile (61, 71).
6. A door assembly according to claim 5, **characterized in that** the integrated ventilation system (70, 70', 80, 80') is further provided in the oblong grip profile (61, 71).

7. A door assembly according to claim 6, **characterized in that** the oblong grip profile (61, 71) has a front (68, 78), respectively back (68', 78') opening which widens from the front, respectively back surface towards the middle of the door panel segments.
8. A door assembly according to claim 7, **characterized in that** the oblong grip profile (61, 71) comprises an upper profile (62, 72), a lower profile (63, 73) and a ventilation grid provided substantially in the middle of the door panel segments.
9. A door assembly according to claim 8, **characterized in that** the ventilation grid comprises two perforated plates (70, 70'), at least one of which is movably mounted to the upper (62) and lower (63) profiles so as to be laterally displaceable with respect to the other plate.
10. A door assembly according to claim 7 or 8, **characterized in that** the oblong grip profile (71) comprises inwards pivotable plates (79, 79') at the front (78) and back (78') openings for closing off these openings, the inwards pivotable plates (79, 79') being mounted such that a permanent minimal ventilation gap (80) is present between the oblong profile (71) and the inwards pivotable plates (79, 79').
11. A door assembly (92, 93) according to any one of the previous claims, the door assembly (92, 93) comprising two opposite members, i.e. either the rotatable door and the door frame or two rotatable doors, and a closing profile (1) provided for mounting on one of the two opposite members, the closing profile (1) comprising a mounting member (2) by means of which the closing profile (1) is mounted to a reveal part of the one member of the door assembly (92) and a flexible member (3) connected to the mounting member (2), the flexible member (3) being shaped for engaging a complementary edge part (13, 94) on the other member of the door assembly (93) and for releasably maintaining the door in a closed position, the closing profile (1) comprising a hollow space (6, 6') between the flexible member (3) and the mounting member (2) to enable the flexible member (3) to deform resiliently towards the mounting member (2) upon opening the door, **characterized in that** the flexible member (3) is longitudinally divided into two wings (4, 4'), each being provided for engaging the complementary edge part (13, 94) and maintaining the closed position in one direction of opening the door, the wings (4, 4') being bendable independently from each other towards the mounting member (2).
12. A door assembly according to claim 11, **characterized in that** a gap is provided between the wings (4, 4'), a flexible lip (7) being provided on the mounting member (2) in this gap and having a length for con-

tacting the complementary edge part (13, 94).

13. A door assembly according to claim 12, **characterized in that** the flexible lip (7) comprises a plurality of tearable strips (8) connected to each other by weak portions. 5
14. A door assembly according to any one of the claims 11-13, **characterized in that** the hollow space (6, 6') between at least one of the wings (4, 4') and the mounting member (2) is provided for receiving a blocking part (95) for blocking deformation of the wing (4, 4') towards the mounting member (2). 10
15. A door assembly according to any one of the claims 11-13, **characterized in that** the same hollow space (6, 6') is provided behind each of the wings (4, 4'). 15
16. A door assembly according to any one of the claims 11-15, **characterized in that** the closing profile (1) is a symmetric profile. 20
17. A door assembly according to any one of the claims 11-16, **characterized in that** the wings (4, 4') of the flexible member (3) comprise sloping end parts (5, 5') which are provided to contact the complementary edge part (13, 94). 25
18. A door assembly according to anyone of the claims 11-17, **characterized in that** each of the wings (4, 4') are bendable about an axis of rotation provided on opposite side parts of the closing profile. 30
19. A door assembly according to any one of the claims 11-18, **characterized in that** the mounting member (2) comprises recesses (9, 9') on opposite ends enabling it to be snap-fitted into a corresponding profile (21) on the member of the door assembly to which it is mounted. 35
20. A door assembly according to any one of the claims 11-19, further comprising an edge profile (11) comprising the complementary edge part (13) which the closing profile (1) is provided to engage, the complementary edge part (13) comprising a trapezoidal protrusion on the edge profile (11). 40 45

Patentansprüche

1. Eine Türanordnung, welche eine drehbare Tür und einen in einer Wandöffnung montierbaren Türrahmen sowie eine Anzahl umlaufender Profile (11, 31, 51) umfasst, die an der Tür und/oder am Türrahmen befestigt werden können, um Spalte zwischen der Tür und der Wandöffnung optisch zu verschließen, wobei zumindest ein erstes der umlaufenden Profile (11, 31, 51) ein Montageelement (12, 32, 52) um-

fasst, mittels dessen das umlaufende Profil (11, 31, 51) an einen Leibungsteil der Tür oder des Türrahmens montiert wird, und ein Dichtelement (13, 37, 57), um die Spalte zwischen der Tür und der Wandöffnung optisch zu verschließen, **dadurch gekennzeichnet, dass** das erwähnte erste umlaufende Profil (11, 31, 51) ein integriertes Lüftungssystem (20, 60) umfasst, welches Lochungen im Montageelement (12, 32, 52) an beiden Seiten des Dichtelements (13, 37, 57) umfasst, sodass die Luft von einem Zimmer durch die Lochungen auf einer Seite des Dichtelements über einen Raum hinter dem Dichtelement und durch die Lochungen auf der anderen Seite des Dichtelements in das andere Zimmer strömen kann, wobei die erwähnten Lochungen angeordnet sind, um parallel zum Leibungsteil der Tür oder des Türrahmens zu sein, an dem das erwähnte erste umlaufende Profil (11, 31, 51) befestigt ist, sodass das integrierte Lüftungssystem im Profil (11, 31, 51) verborgen ist und Durchtritt von Licht hier durch vermieden wird.

2. Eine Türanordnung nach Anspruch 1, **dadurch gekennzeichnet, dass** das Dichtelement zumindest eine flexible Lippe (37, 57) mit anpassbarer Länge umfasst.
3. Eine Türanordnung nach Anspruch 2, **dadurch gekennzeichnet, dass** die flexible Lippe eine Vielzahl zerreißbarer Streifen (38, 58) umfasst, die durch schwache Abschnitte miteinander verbunden sind.
4. Eine Türanordnung nach irgendeinem der Ansprüche 2 bis 3, **dadurch gekennzeichnet, dass** das integrierte Lüftungssystem (90) ferner in der zumindest einen flexiblen Lippe mittels Lochungen in der Nähe des Montageelements bereitgestellt ist.
5. Eine Türanordnung nach irgendeinem der Ansprüche 1 bis 4, **dadurch gekennzeichnet, dass** die Tür ein längliches Griffprofil (61, 71) umfasst, welches die Tür in getrennte Türblattsegmente teilt, die sich an gegenüberliegenden Seiten des Griffprofils (61, 71) ausdehnen.
6. Eine Türanordnung nach Anspruch 5, **dadurch gekennzeichnet, dass** das integrierte Lüftungssystem (70, 70', 80, 80') ferner im länglichen Griffprofil (61, 71) bereitgestellt ist.
7. Eine Türanordnung nach Anspruch 6, **dadurch gekennzeichnet, dass** das längliche Griffprofil (61, 71) eine vordere (68, 78) respektive hintere (68', 78') Öffnung aufweist, die von der vorderen respektive hinteren Oberfläche zur Mitte der Türblattsegmente hin breiter wird.
8. Eine Türanordnung nach Anspruch 7, **dadurch ge-**

kennzeichnet, dass das längliche Griffprofil (61, 71) ein oberes Profil (62, 72), ein unteres Profil (63, 73) und ein Lüftungsgitter umfasst, bereitgestellt im Wesentlichen in der Mitte der Türblattsegmente.

9. Eine Türanordnung nach Anspruch 8, **dadurch gekennzeichnet, dass** das Lüftungsgitter zwei Lochplatten (70, 70') umfasst, von denen zumindest eine so beweglich an das obere (62) und das untere (63) Profil montiert ist, dass sie in Bezug auf die andere Platte seitlich verschiebbar ist.

10. Eine Türanordnung nach Anspruch 7 oder 8, **dadurch gekennzeichnet, dass** das längliche Griffprofil (71) einwärts schwenkbare Platten (79, 79') an der vorderen (78) und der hinteren (78') Öffnung zum Verschließen dieser Öffnungen umfasst, wobei die einwärts schwenkbaren Platten (79, 79') so montiert sind, dass ein permanenter minimaler Lüftungsspalt (80) zwischen dem länglichen Profil (71) und den einwärts schwenkbaren Platten (79, 79') vorhanden ist.

11. Eine Türanordnung (92, 93) nach irgendeinem der vorigen Ansprüche, wobei die Türanordnung (92, 93) zwei gegenüberliegende Elemente umfasst, d. h. entweder die drehbare Tür und den Türrahmen oder zwei drehbare Türen, und ein Schließprofil (1) bereitgestellt zur Montage auf einem der zwei gegenüberliegenden Elemente, wobei das Schließprofil (1) ein Montageelement (2) umfasst, mittels dessen das Schließprofil (1) an einen Leibungsteil des einen Elements der Türanordnung (92) montiert ist, und ein flexibles Element (3) verbunden mit dem Montageelement (2), wobei das flexible Element (3) geformt ist, um in ein komplementäres Randteil (13, 94) auf dem anderen Element der Türanordnung (93) einzugreifen und um die Tür freigebbar in einer geschlossenen Position zu halten, wobei das Schließprofil (1) einen Hohlraum (6, 6') zwischen dem flexiblen Element (3) und dem Montageelement (2) umfasst, um das flexible Element (3) dazu zu befähigen, sich beim Öffnen der Tür elastisch zum Montageelement (2) hin zu verformen, **dadurch gekennzeichnet, dass** das flexible Element (3) der Länge nach in zwei Flügel (4, 4') geteilt ist, die beide bereitgestellt sind, um in das komplementäre Randteil (13, 94) einzugreifen und die geschlossene Position in einer Richtung des Öffnens der Tür zu halten, wobei die Flügel (4, 4') unabhängig voneinander zum Montageelement (2) hin biegsam sind.

12. Eine Türanordnung nach Anspruch 11, **dadurch gekennzeichnet, dass** ein Spalt zwischen den Flügeln (4, 4') vorgesehen ist, wobei eine flexible Lippe (7) auf dem Montageelement (2) in diesem Spalt vorgesehen ist und eine Länge hat, um Kontakt mit dem komplementären Randteil (13, 94) zu haben.

13. Eine Türanordnung nach Anspruch 12, **dadurch gekennzeichnet, dass** die flexible Lippe (7) eine Vielzahl zerreißbarer Streifen (8) umfasst, die durch schwache Abschnitte miteinander verbunden sind.

14. Eine Türanordnung nach irgendeinem der Ansprüche 11 bis 13, **dadurch gekennzeichnet, dass** der Hohlraum (6, 6') zwischen zumindest einem der Flügel (4, 4') und dem Montageelement (2) bereitgestellt ist, um ein Blockierteil (95) aufzunehmen, um die Verformung des Flügels (4, 4') zum Montageelement (2) hin zu blockieren.

15. Eine Türanordnung nach irgendeinem der Ansprüche 11 bis 13, **dadurch gekennzeichnet, dass** der gleiche Hohlraum (6, 6') hinter jedem der Flügel (4, 4') bereitgestellt ist.

16. Eine Türanordnung nach irgendeinem der Ansprüche 11 bis 15, **dadurch gekennzeichnet, dass** das Schließprofil (1) ein symmetrisches Profil ist.

17. Eine Türanordnung nach irgendeinem der Ansprüche 11 bis 16, **dadurch gekennzeichnet, dass** die Flügel (4, 4') des flexiblen Elements (3) abfallende Endteile (5, 5') umfassen, die bereitgestellt sind, um Kontakt mit dem komplementären Randteil (13, 94) zu haben.

18. Eine Türanordnung nach irgendeinem der Ansprüche 11 bis 17, **dadurch gekennzeichnet, dass** jeder der Flügel (4, 4') um eine Drehachse biegsam ist, welche an gegenüberliegenden Seitenteilen des Schließprofils bereitgestellt ist.

19. Eine Türanordnung nach irgendeinem der Ansprüche 11 bis 18, **dadurch gekennzeichnet, dass** das Montageelement (2) Vertiefungen (9, 9') an gegenüberliegenden Enden umfasst, wodurch es in ein entsprechendes Profil (21) auf dem Element der Türanordnung, an dem es montiert ist, eingerastet werden kann.

20. Eine Türanordnung nach irgendeinem der Ansprüche 11 bis 19, die ferner ein Randprofil (11) umfasst, welches das komplementäre Randteil (13) umfasst, in das das Schließprofil (1) einzurasten bereitgestellt ist, wobei das komplementäre Randteil (13) einen trapezoidalen Überstand auf dem Randprofil (11) umfasst.

Revendications

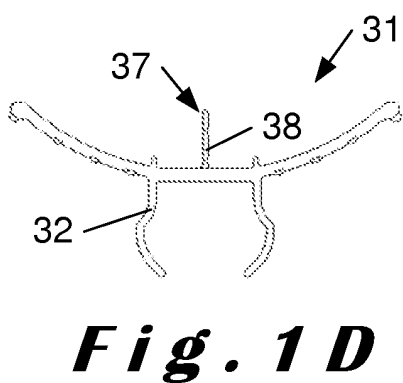
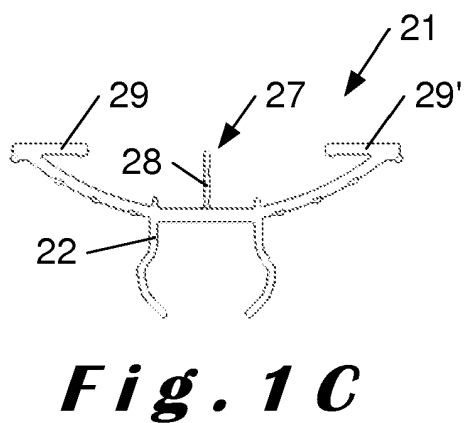
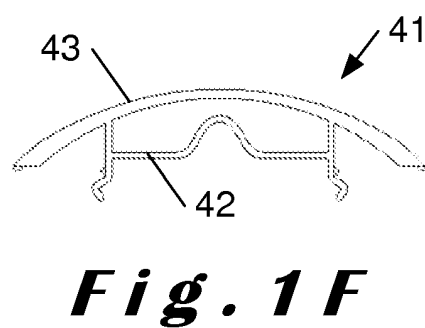
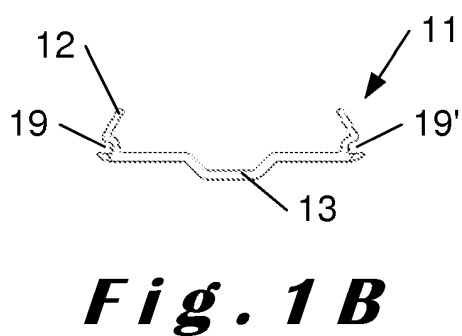
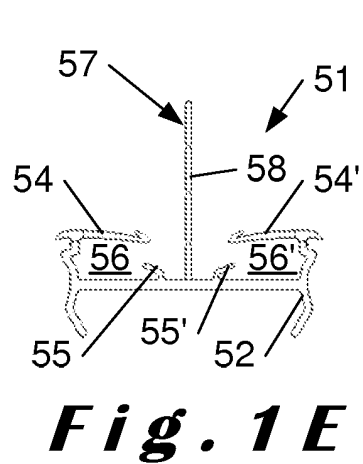
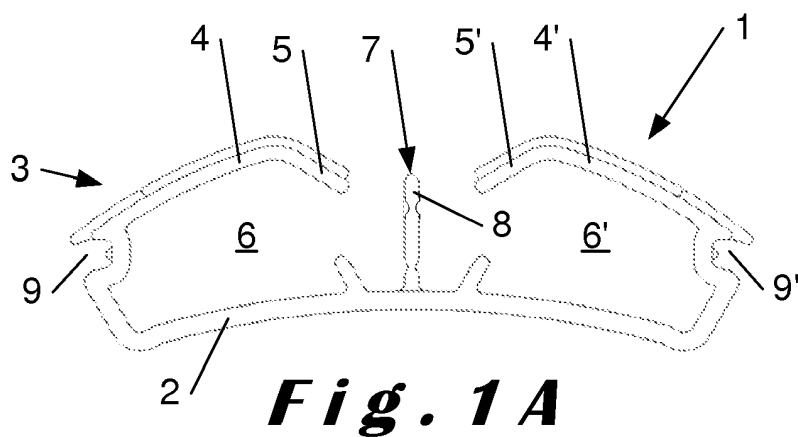
1. Ensemble de porte comprenant une porte rotative et un cadre de porte pouvant être montés dans une ouverture de mur et un certain nombre de profils circconférentiels (11, 31, 51) pouvant être fixés à la porte

- et/ou au cadre de porte pour fermer optiquement des espaces entre la porte et l'ouverture de mur, au moins un premier des profils circonférentiels (11, 31, 51) comprenant un élément de montage (12, 32, 52) à l'aide duquel le profil circonférentiel (11, 31, 51) est monté sur une partie tableau de la porte ou du cadre de porte et un élément scellant (13, 37, 57) pour fermer optiquement les espaces entre la porte et l'ouverture de mur, **caractérisé en ce que** ledit premier profil circonférentiel (11, 31, 51) comprend un système de ventilation intégré (20, 60) qui comprend des perforations dans l'élément de montage (12, 32, 52) sur les deux côtés de l'élément scellant (13, 37, 57) d'une manière selon laquelle l'air peut s'écouler depuis une première pièce par les perforations sur un premier côté de l'élément scellant via un espace situé derrière l'élément scellant et par les perforations sur l'autre côté de l'élément scellant dans l'autre pièce, lesdites perforations étant agencées pour être parallèles à la partie tableau de la porte ou du cadre de porte sur laquelle ledit premier profil circonférentiel (11, 31, 51) est fixé, de telle sorte que le système de ventilation intégré est caché dans le profil (11, 31, 51) et la pénétration de la lumière à travers celui-ci est évitée.
2. Ensemble de porte selon la revendication 1, **caractérisé en ce que** l'élément scellant comprend au moins un rebord flexible (37, 57) d'une longueur ajustable.
 3. Ensemble de porte selon la revendication 2, **caractérisé en ce que** le rebord flexible comprend une pluralité de bandes déchirables (38, 58) reliées les unes aux autres par des parties fragiles.
 4. Ensemble de porte selon l'une quelconque des revendications 2-3, **caractérisé en ce que** le système de ventilation intégré (90) est en outre disposé dans l'au moins un rebord flexible au moyen de perforations à proximité de l'élément de montage.
 5. Ensemble de porte selon l'une quelconque des revendications 1-4, **caractérisé en ce que** la porte comprend un profil de prise oblong (61, 71) qui divise la porte en des segments de panneau de porte séparés s'étendant sur des côtés opposés du profil de prise (61, 71).
 6. Ensemble de porte selon la revendication 5, **caractérisé en ce que** le système de ventilation intégré (70, 71', 80, 80') est en outre disposé dans le profil de prise oblong (61, 71).
 7. Ensemble de porte selon la revendication 6, **caractérisé en ce que** le profil de prise oblong (61, 71) comporte une ouverture avant (68, 78), respectivement une ouverture arrière (68', 78'), qui s'élargit depuis la surface avant, respectivement la surface arrière, vers le milieu des segments de panneau de porte.
 8. Ensemble de porte selon la revendication 7, **caractérisé en ce que** le profil de prise oblong (61, 71) comprend un profil supérieur (62, 72), un profil inférieur (63, 73) et une grille de ventilation située sensiblement au milieu des segments de panneau de porte.
 9. Ensemble de porte selon la revendication 8, **caractérisé en ce que** la grille de ventilation comprend deux plaques perforées (70, 70'), dont au moins l'une est montée mobile sur les profils supérieur (62) et inférieur (63) de manière à pouvoir être latéralement déplacée par rapport à l'autre plaque.
 10. Ensemble de porte selon la revendication 7 ou 8, **caractérisé en ce que** le profil de prise oblong (71) comprend des plaques pivotantes vers l'intérieur (79, 79') au niveau des ouvertures avant (78) et arrière (78') pour refermer ces ouvertures, les plaques pivotantes vers l'intérieur (79, 79') étant montées de telle sorte qu'un espace de ventilation minimal permanent (80) est présent entre le profil oblong (71) et les plaques pivotantes vers l'intérieur (79, 79').
 11. Ensemble de porte (92, 93) selon l'une quelconque des revendications précédentes, l'ensemble de porte (92, 93) comprenant deux éléments opposés, c'est-à-dire la porte rotative et le cadre de porte ou deux portes rotatives, et un profil de fermeture (1) prévu pour être monté sur un premier des deux éléments opposés, le profil de fermeture (1) comprenant un élément de montage (2) à l'aide duquel le profil de fermeture (1) est monté sur une partie tableau du premier élément de l'ensemble de porte (92) et un élément flexible (3) relié à l'élément de montage (2), l'élément flexible (3) étant façonné pour s'engager avec une partie bord complémentaire (13, 94) sur l'autre élément de l'ensemble de porte (93) et pour maintenir de manière libérable la porte dans une position fermée, le profil de fermeture (1) comprenant un espace creux (6, 6') entre l'élément flexible (3) et l'élément de montage (2) afin de permettre à l'élément flexible (3) de se déformer élastiquement vers l'élément de montage (2) lors de l'ouverture de la porte, **caractérisé en ce que** l'élément flexible (3) est longitudinalement divisé en deux ailes (4, 4'), chacune étant prévue pour s'engager avec la partie bord complémentaire (13, 94) et maintenir la position fermée dans une première direction d'ouverture de la porte, les ailes (4, 4') pouvant être pliées indépendamment l'une de l'autre vers l'élément de montage (2).
 12. Ensemble de porte selon la revendication 11, **carac-**

térisé en ce qu'un espace est prévu entre les ailes (4, 4'), un rebord flexible (7) étant prévu sur l'élément de montage (2) dans cet espace et ayant une longueur pour établir contact avec la partie bord complémentaire (13, 94).

5

13. Ensemble de porte selon la revendication 12, **caractérisé en ce que** le rebord flexible (7) comprend une pluralité de bandes déchirables (8) reliées les unes aux autres par des parties fragiles. 10
14. Ensemble de porte selon l'une quelconque des revendications 11-13, **caractérisé en ce que** l'espace creux (6, 6') entre au moins une des ailes (4, 4') et l'élément de montage (2) est prévu pour recevoir une partie de blocage (95) pour bloquer la déformation de l'aile (4, 4') vers l'élément de montage (2). 15
15. Ensemble de porte selon l'une quelconque des revendications 11-13, **caractérisé en ce que** ce même espace creux (6, 6') est situé derrière chacune des ailes (4, 4'). 20
16. Ensemble de porte selon l'une quelconque des revendications 11-15, **caractérisé en ce que** le profil de fermeture (1) est un profil symétrique. 25
17. Ensemble de porte selon l'une quelconque des revendications 11-16, **caractérisé en ce que** les ailes (4, 4') de l'élément flexible (3) comprend des parties d'extrémité inclinées (5, 5') qui sont prévues pour être en contact avec la partie bord complémentaire (13, 94). 30
18. Ensemble de porte selon l'une quelconque des revendications 11-17, **caractérisé en ce que** chacune des ailes (4, 4') peut être pliée autour d'un axe de rotation situé sur des parties latérales opposées du profil de fermeture. 35
40
19. Ensemble de porte selon l'une quelconque des revendications 11-18, **caractérisé en ce que** l'élément de montage (2) comprend des évidements (9, 9') sur des extrémités opposées lui permettant d'être encliqueté dans un profil correspondant (21) sur l'élément de l'ensemble de porte sur lequel il est monté. 45
20. Ensemble de porte selon l'une quelconque des revendications 11-19, comprenant en outre un profil de bord (11) comprenant la partie bord complémentaire (13) avec laquelle il est prévu que le profil de fermeture (1) s'engage, la partie bord complémentaire (13) comprenant une saillie trapézoïdale sur le profil de bord (11). 50
55



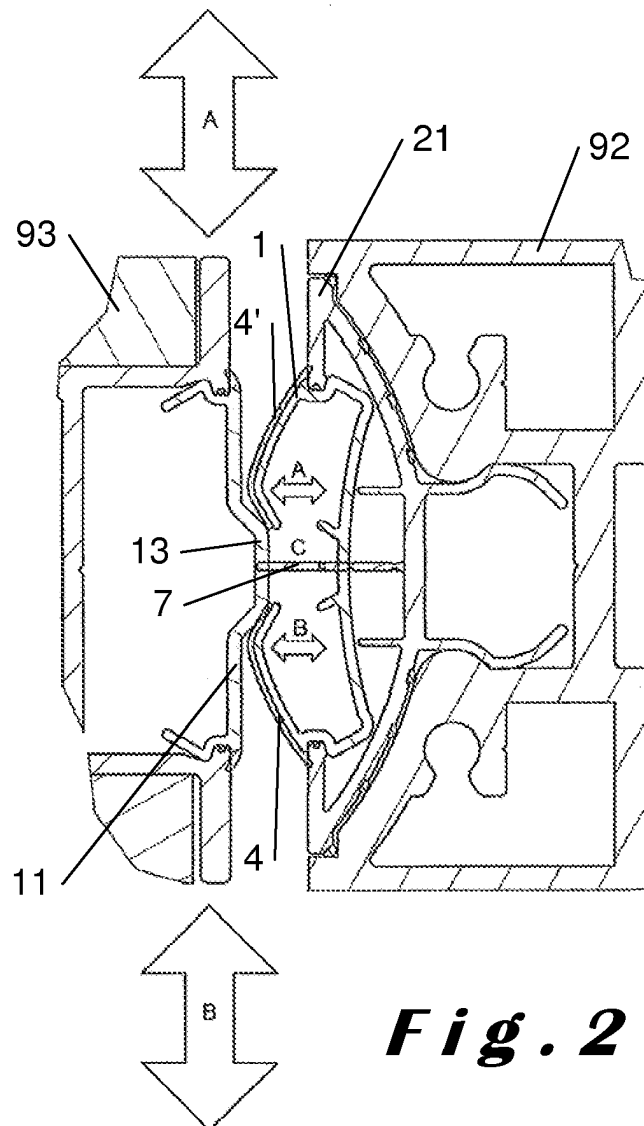
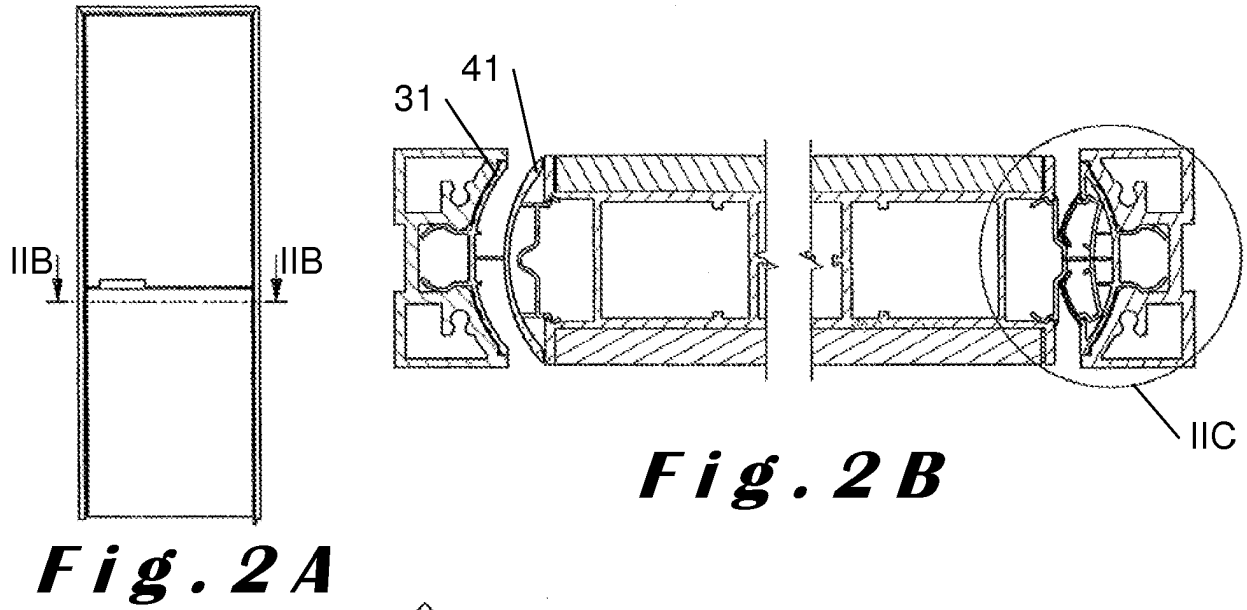


Fig. 2C

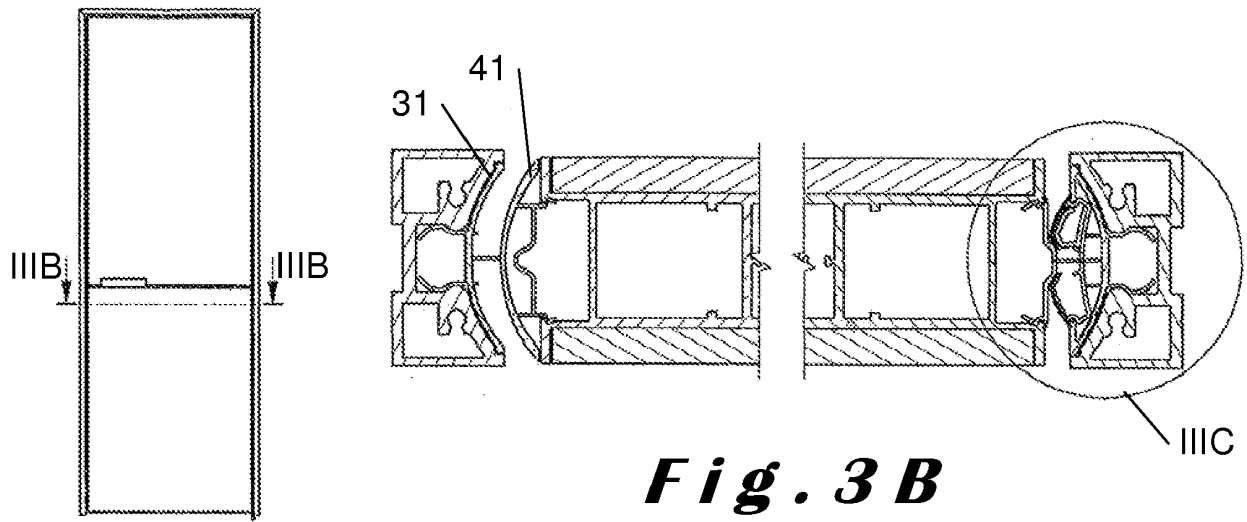


Fig. 3 A

Fig. 3 B

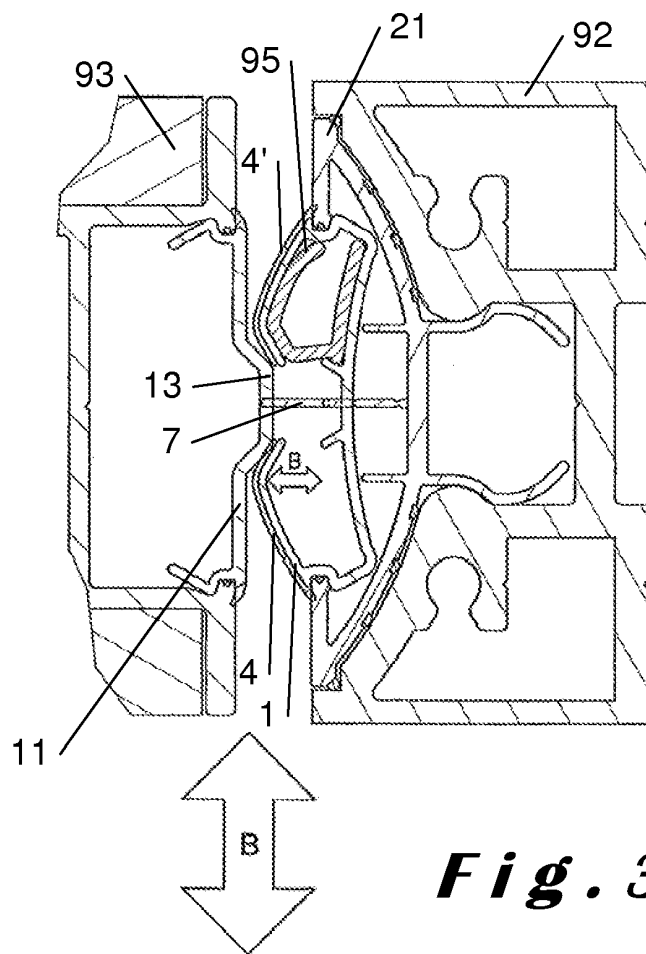


Fig. 3 C

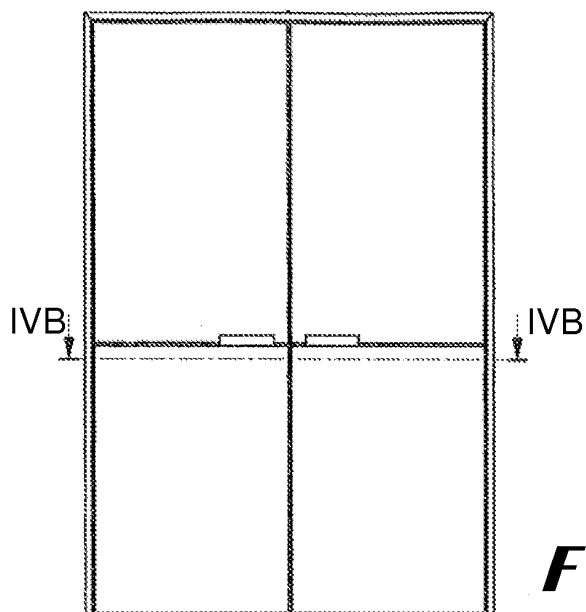


Fig. 4 A

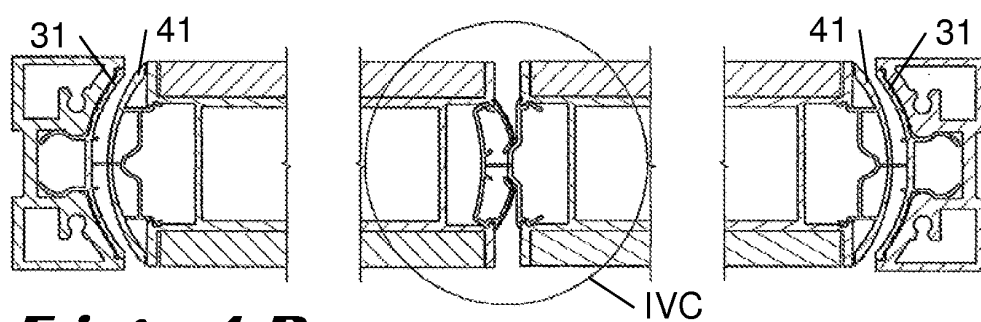


Fig. 4 B

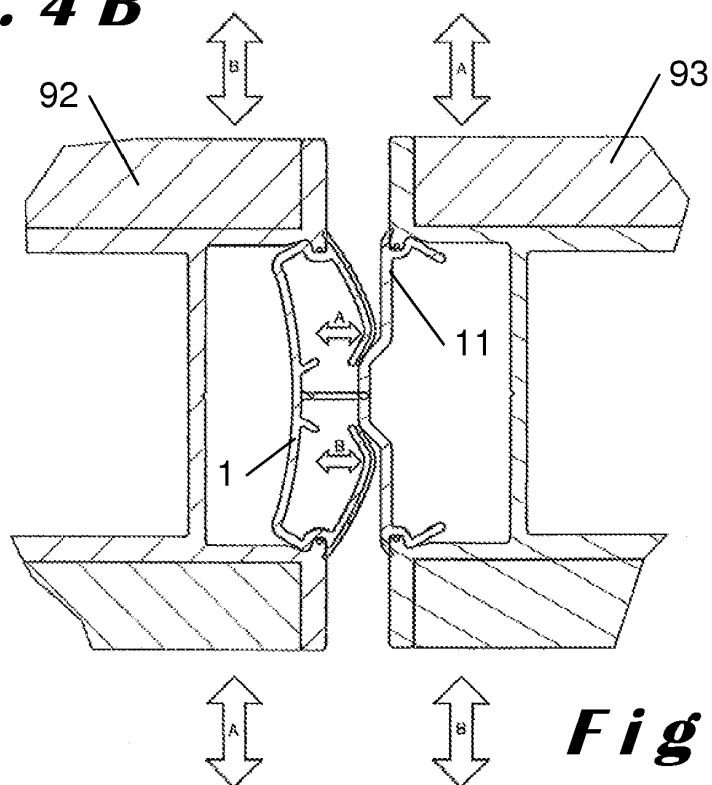
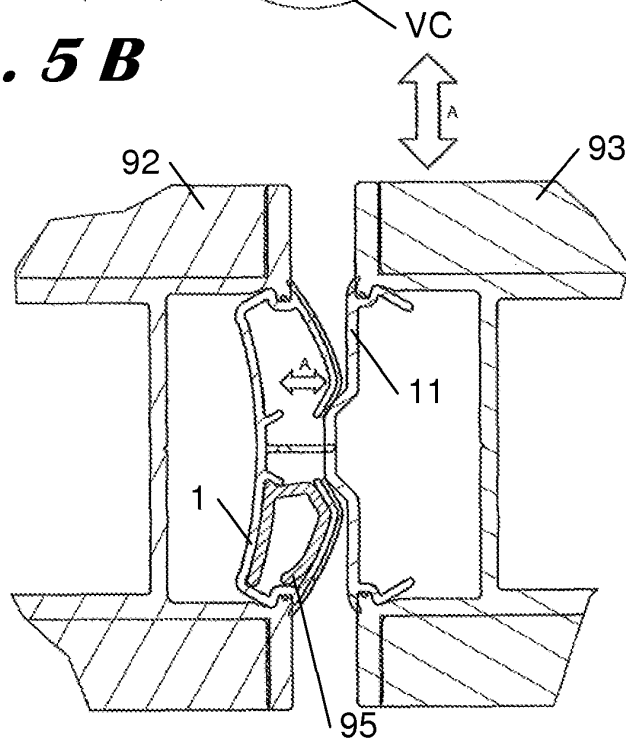
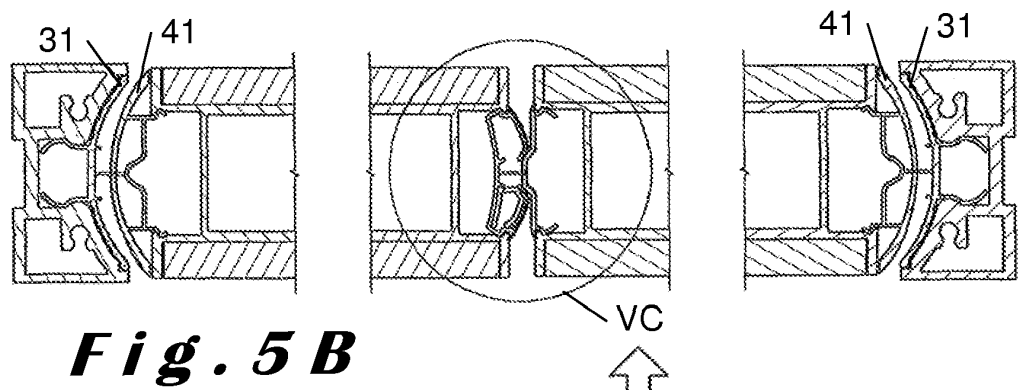
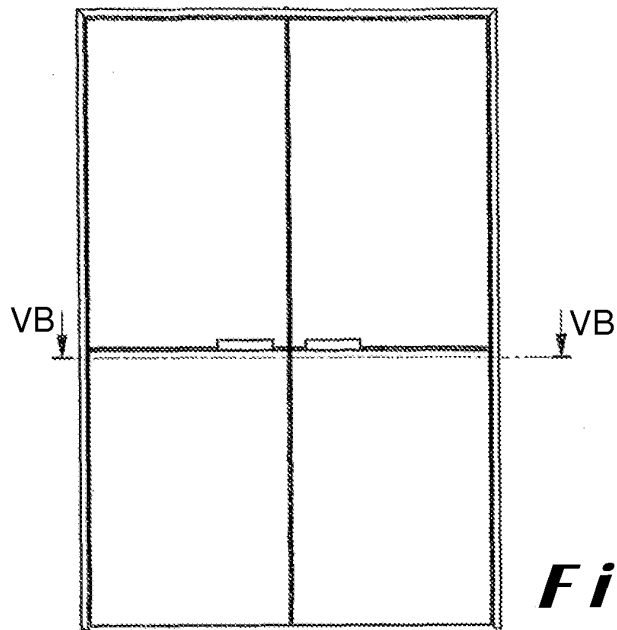


Fig. 4 C



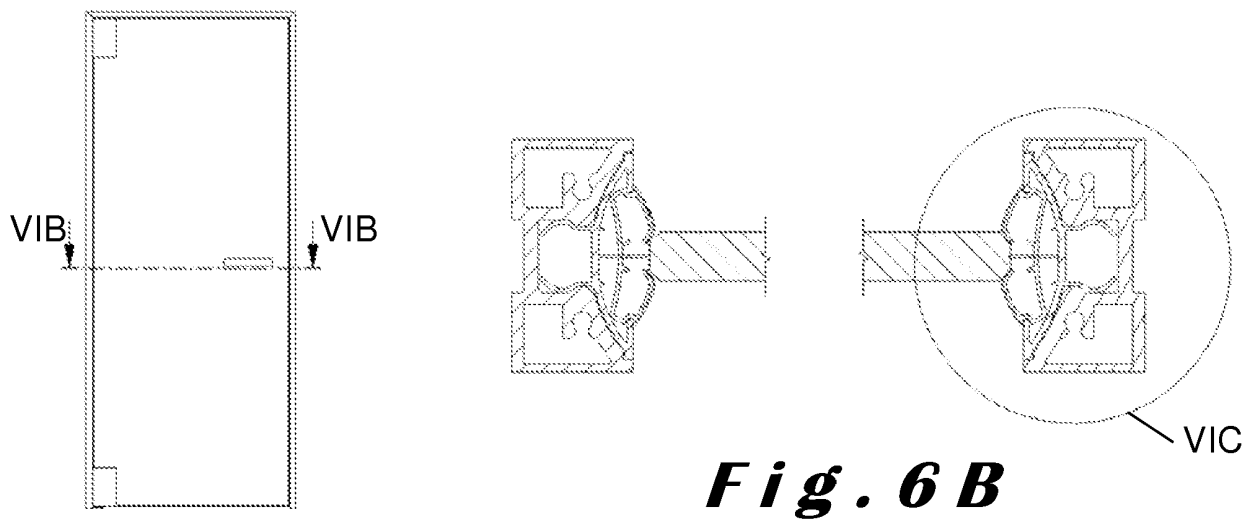


Fig. 6 A

Fig. 6 B

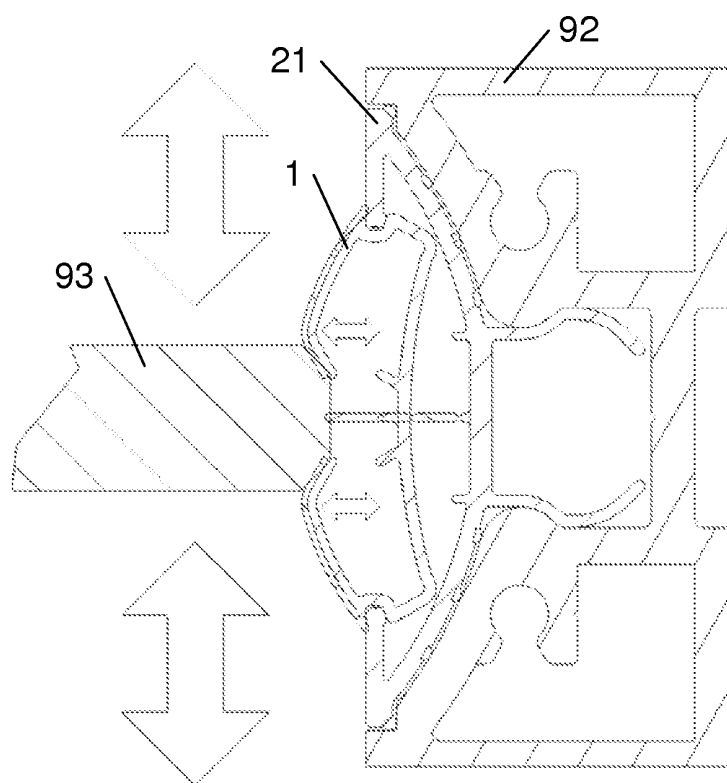


Fig. 6 C

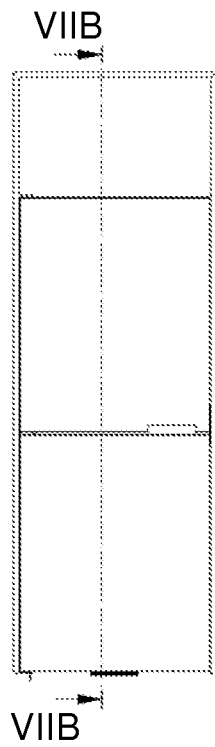


Fig. 7 A

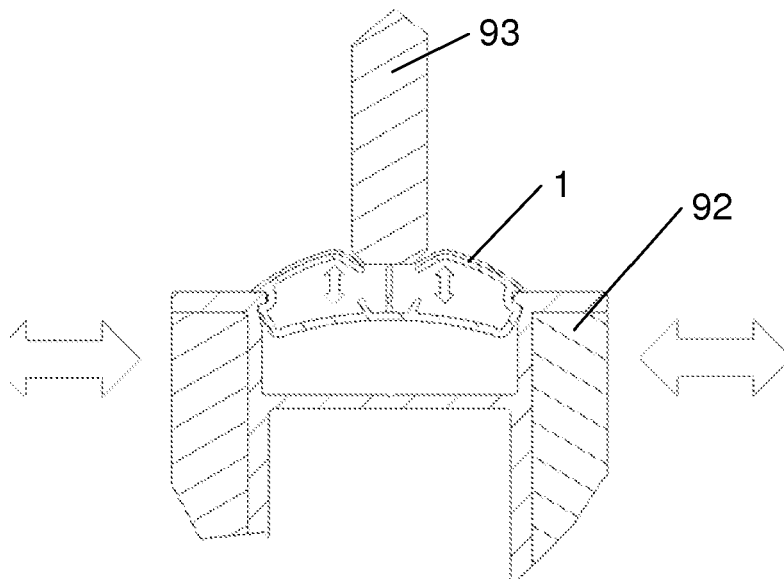
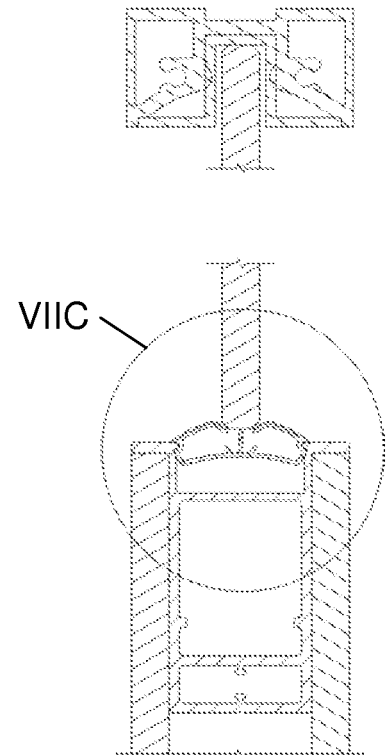


Fig. 7 C

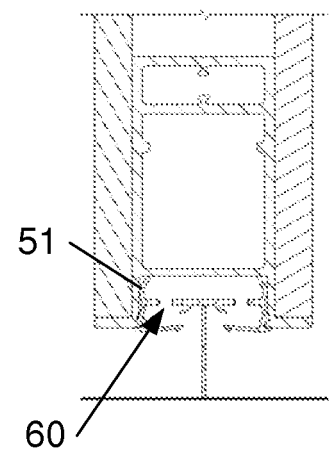


Fig. 7 B

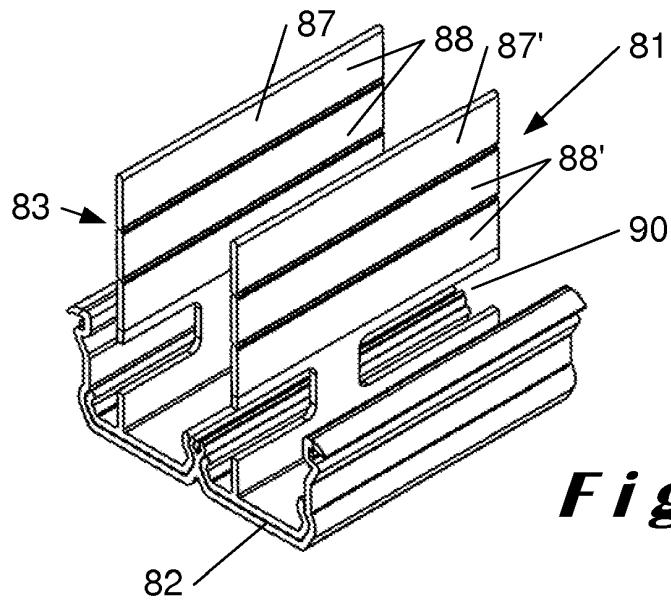


Fig. 8 A

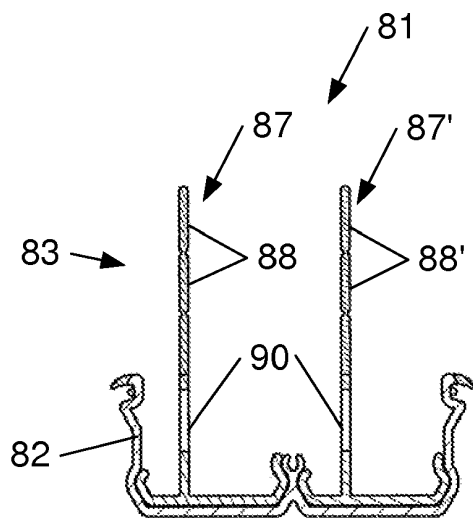


Fig. 8 B

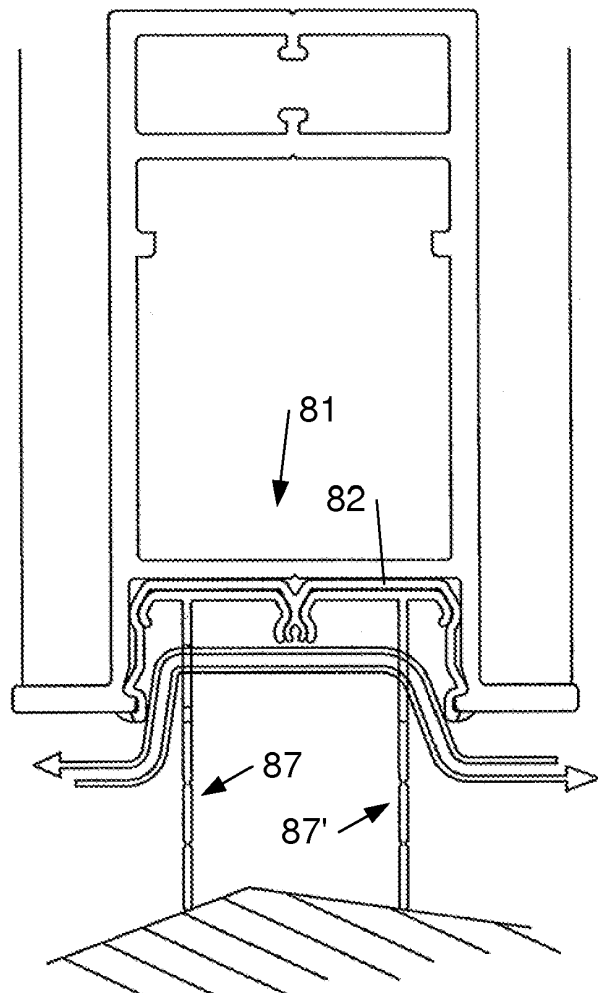


Fig. 8 C

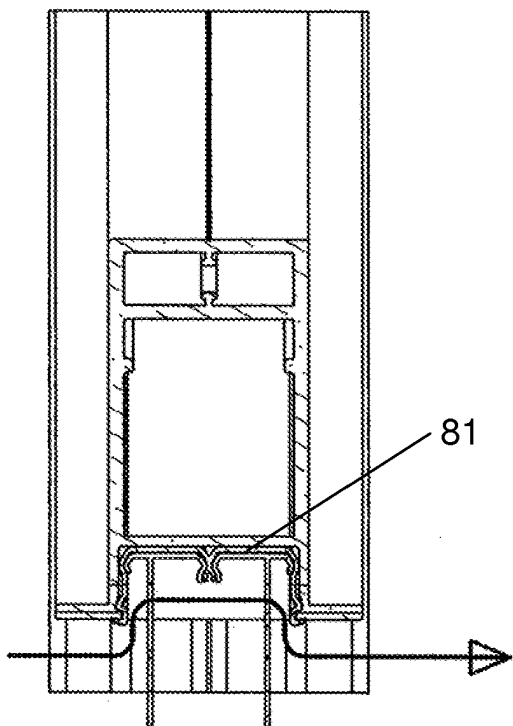
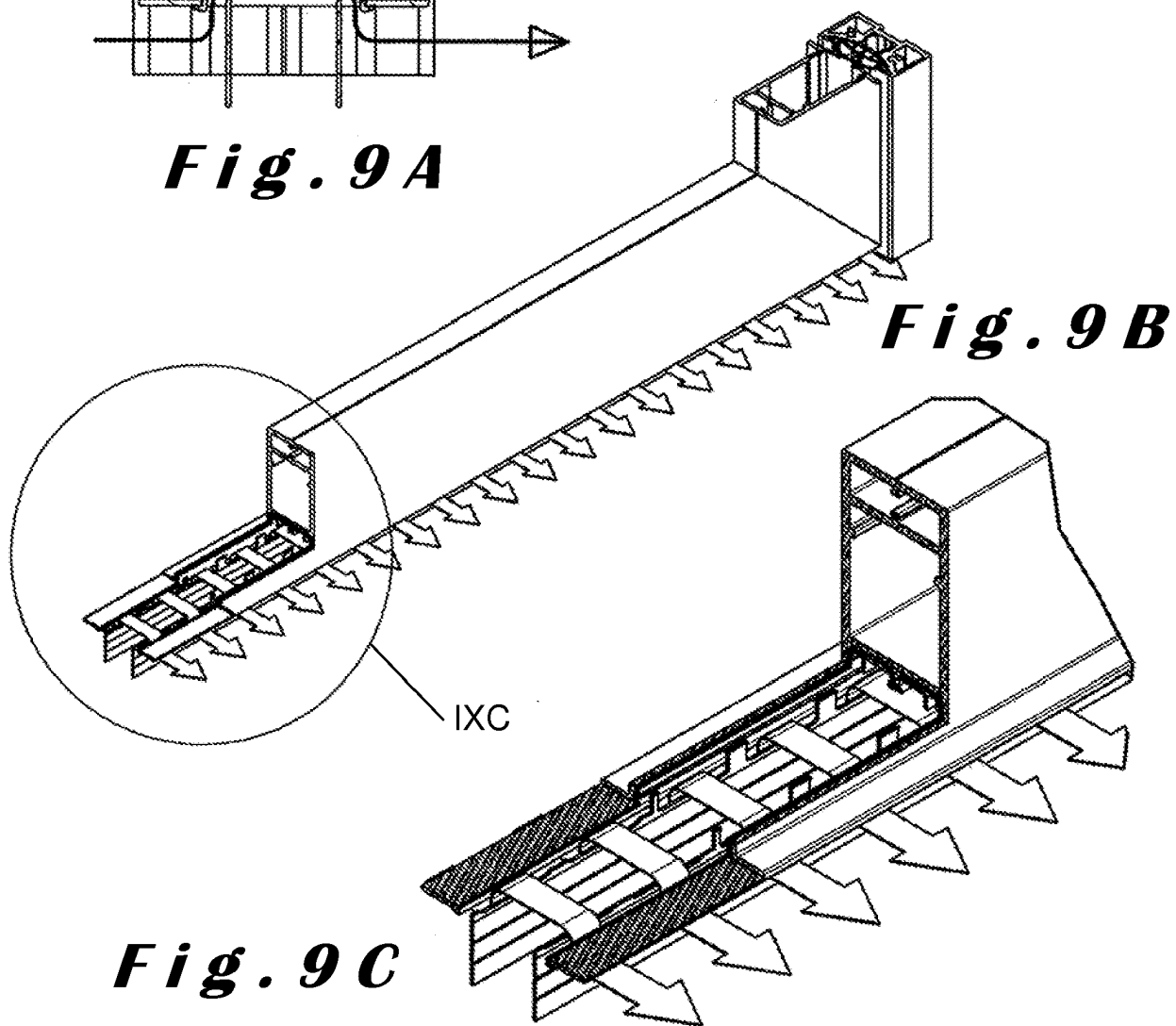


Fig. 9 A



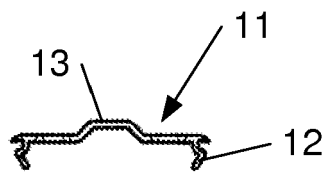


Fig. 10 A

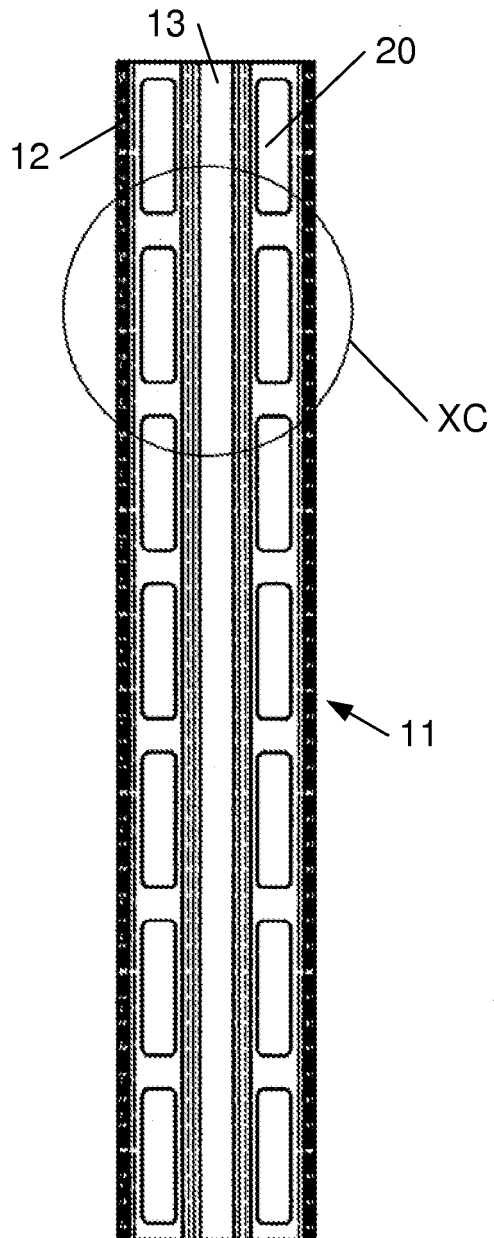


Fig. 10 B

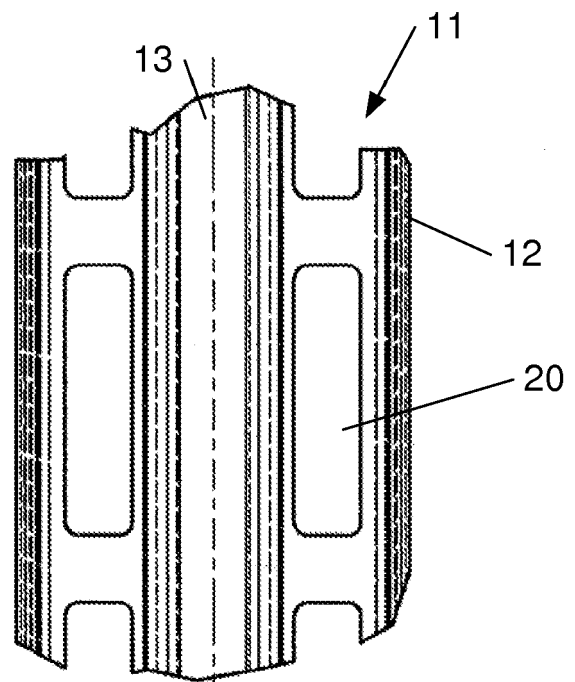


Fig. 10 C

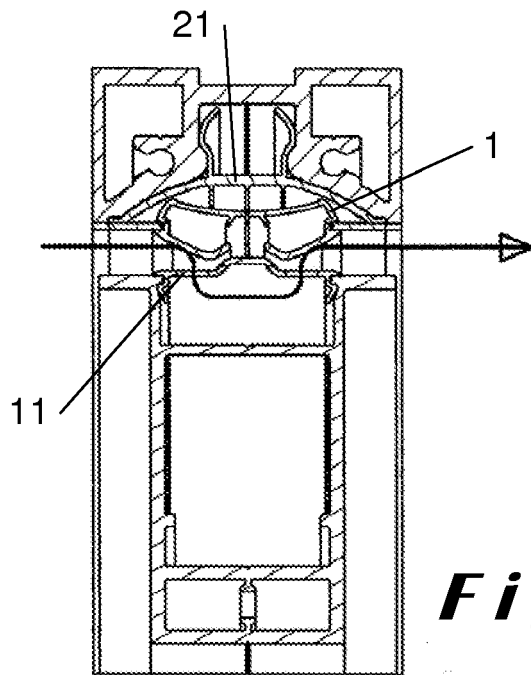


Fig. 11 A

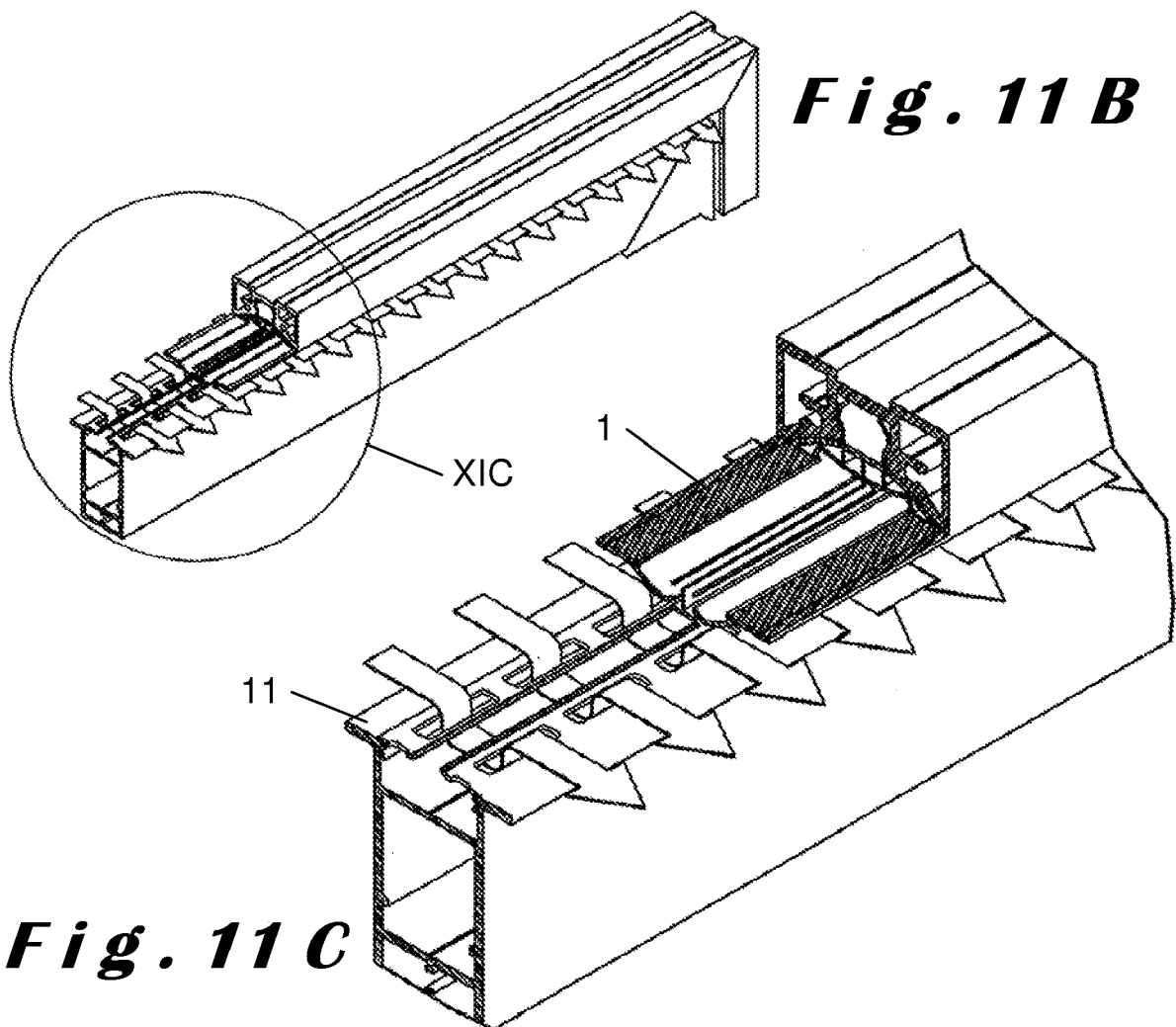


Fig. 11 C

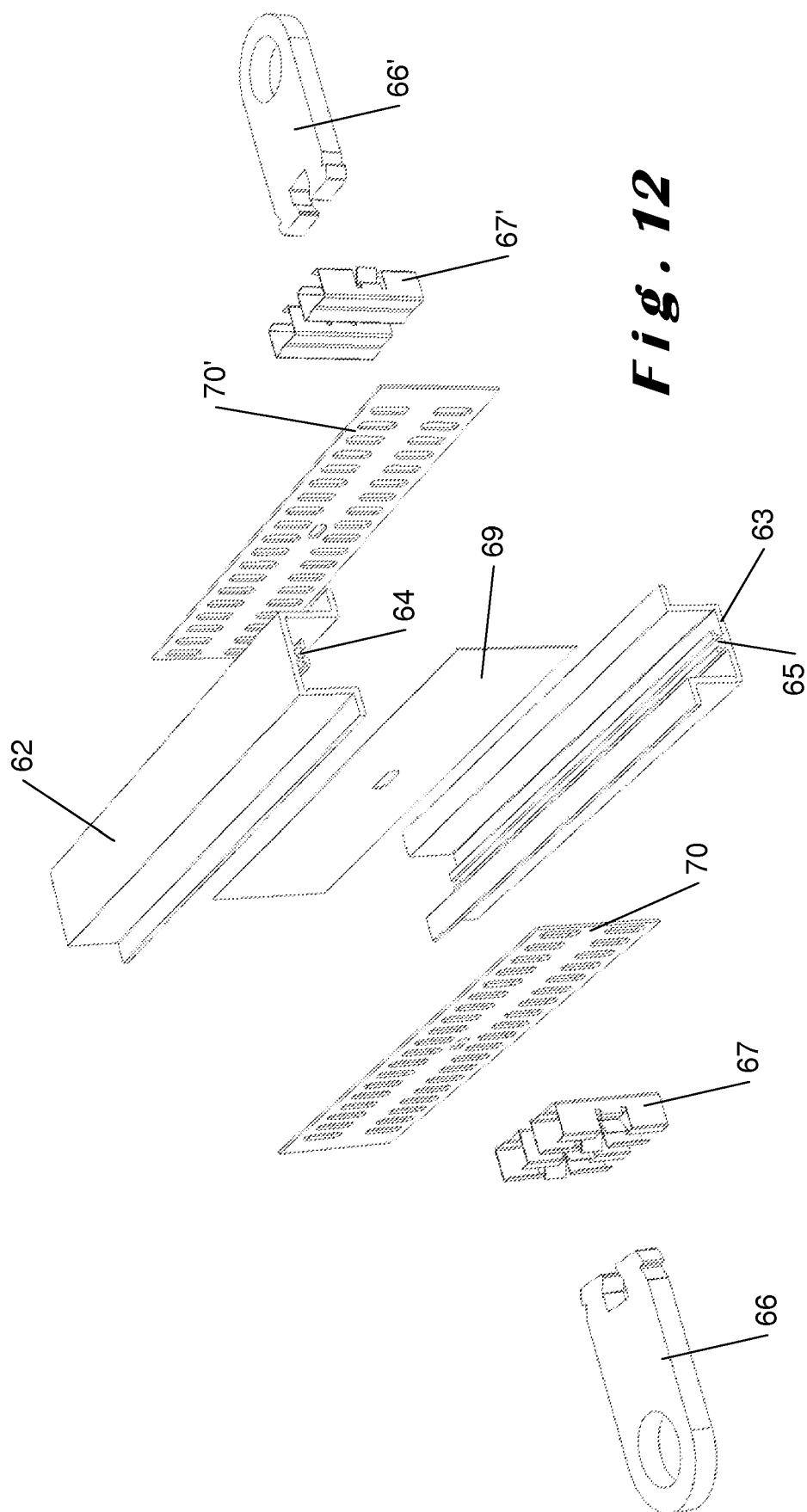


Fig. 12

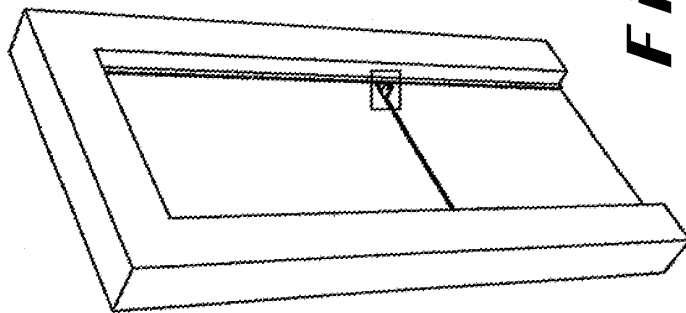


Fig. 13 A

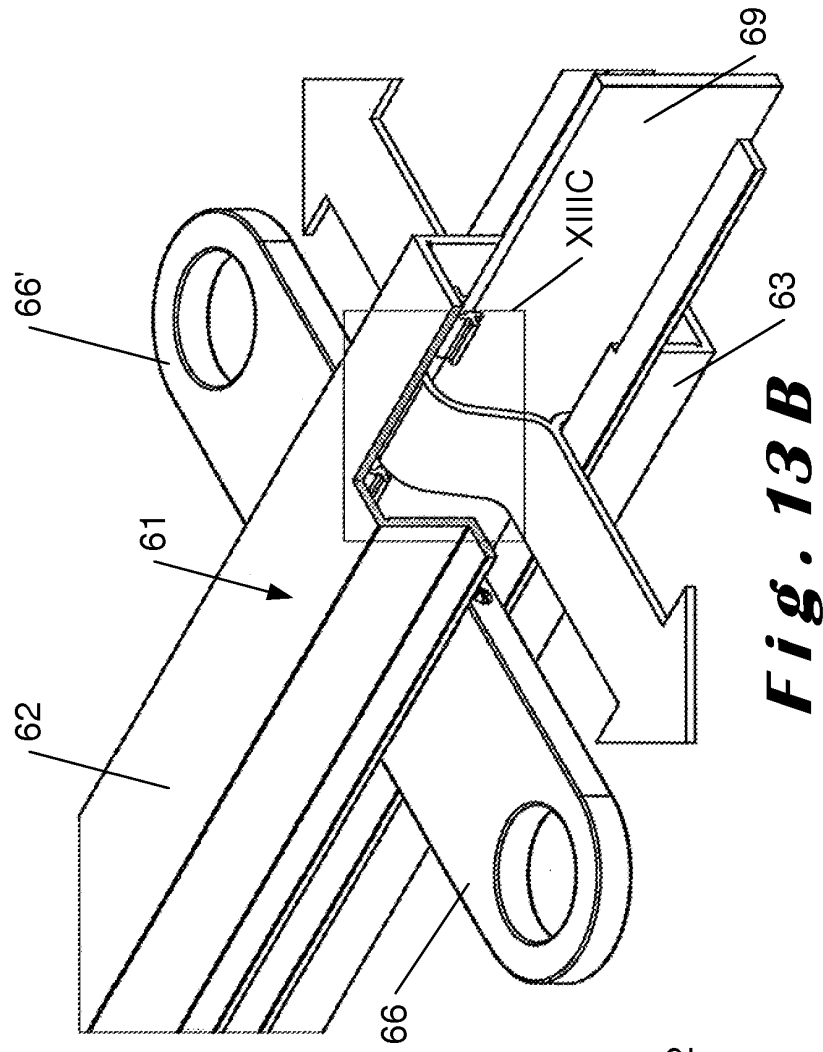


Fig. 13 B

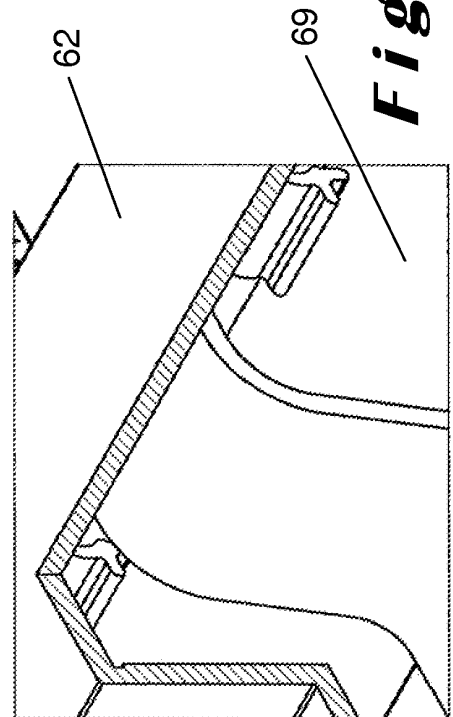


Fig. 13 C

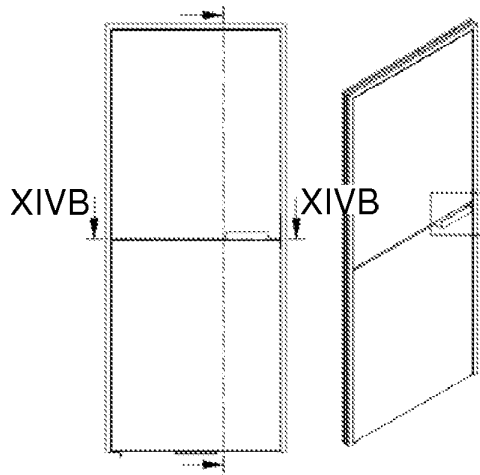


Fig. 14 A

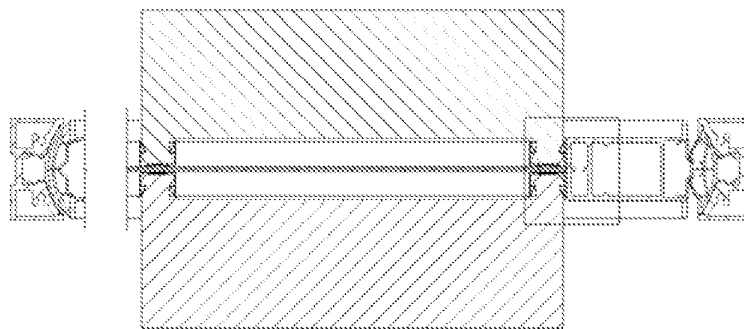


Fig. 14 B

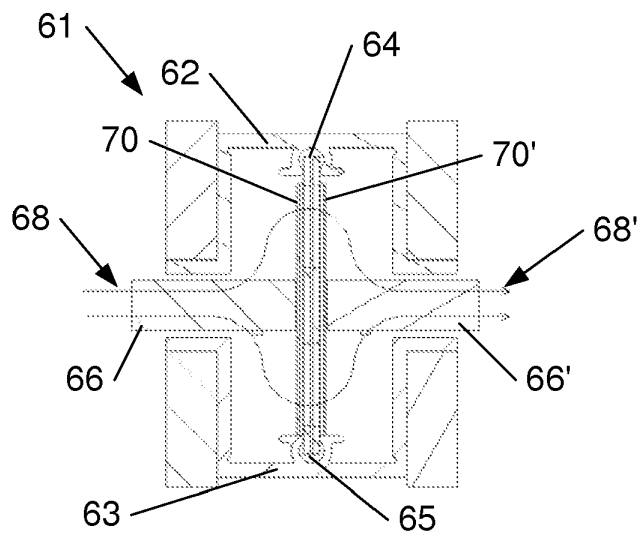


Fig. 14 C

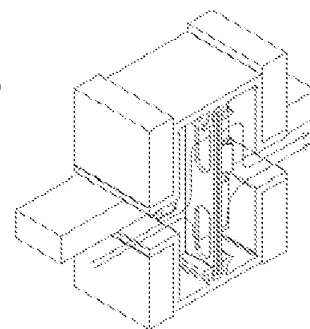


Fig. 14 D

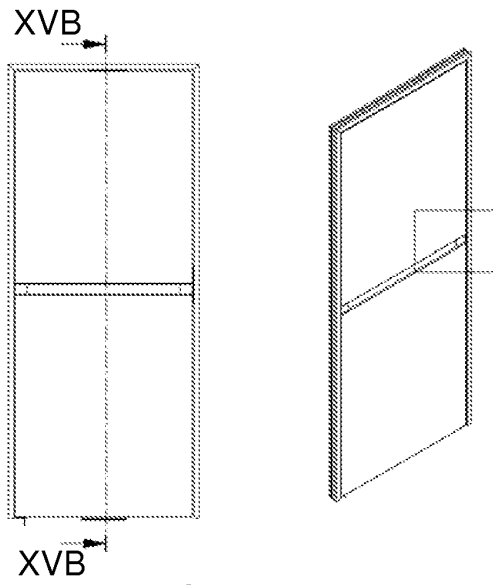


Fig. 15 A

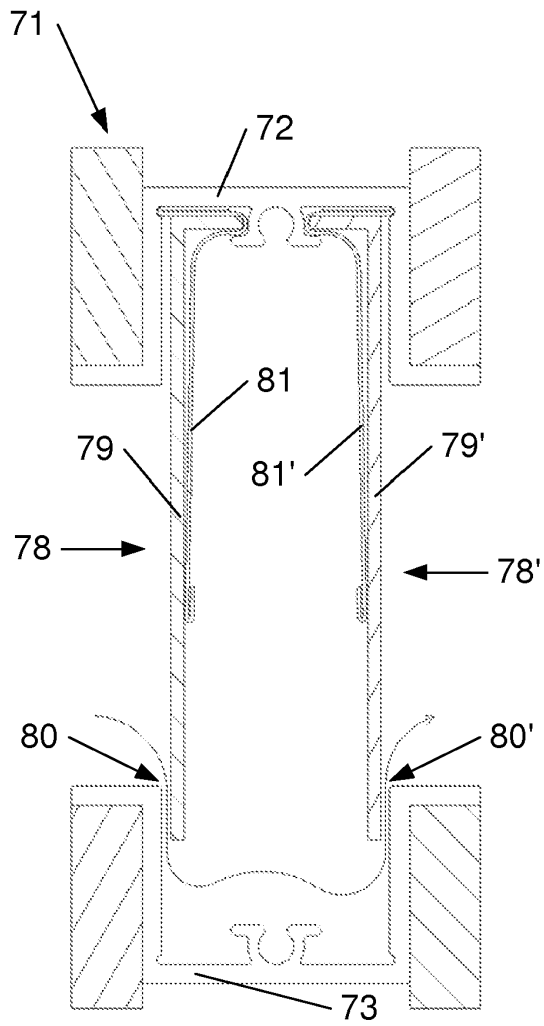


Fig. 15 B

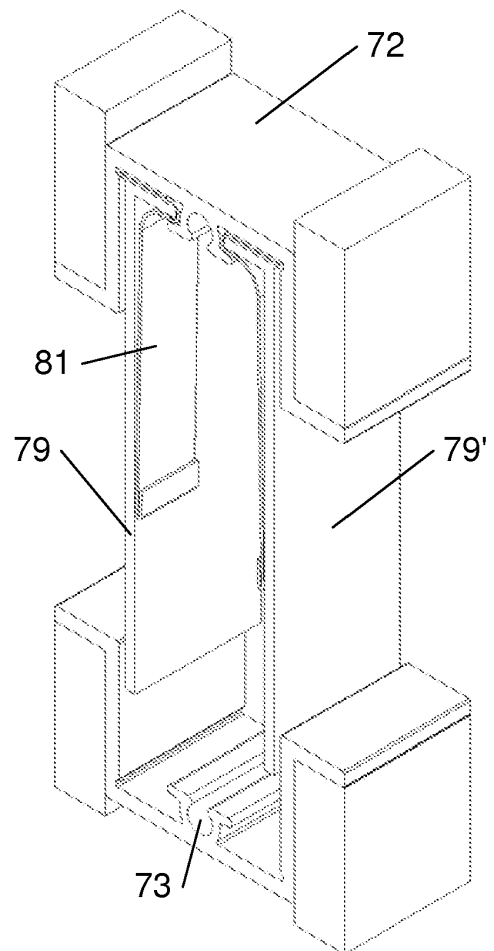


Fig. 15 C

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- EP 0645517 B [0002] [0003]
- EP 0497134 A [0004]
- EP 1696090 A [0008]