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(54) **A sliding door or window**

Schiebetür oder -fenster

Porte ou fenêtre coulissante

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Description

[0001] This invention relates to a sliding door or window. In the technical field of doors and windows, doors and windows are known which comprise at least one sliding sash that can be translated sideways in order to open or close the door or window, for example: relative to another sash which is fixed, or relative to another sash which is also movable. Doors and windows of this kind include a particular type of door or window - known in the jargon of the trade as "lift and slide" (or lift 'n slide) - which are opened and closed in two distinct steps of: translation at right angles to (vertical) and translation parallel to (horizontal) the line along which the sash moves when the door/window is opened or closed.

[0002] The purpose of vertical translation at right angles to the line of sliding movement is: in one direction (lifting), to disengage the sealing strip of the sash to free it so that the door/window can be opened; in the other direction (lowering) to re-engage the sealing strip and lock the door/window in place in the closed position.

[0003] To be able to accomplish the movements described above, the movable sashes of doors/windows are equipped with operating means which the user can actuate as required using suitable control handles. The handles normally used are - in most cases - shaped in such a way as to always protrude transversally to the plane of the sash and usually with a relatively long handgrip. As a result, the handle may create an obstacle to the complete and independent movement of one sash relative to the other.

[0004] In other terms, when the door/window is open, even to an extent such as to provide a minimum passage through the wall of the building in which it is installed, the obstacle created by the handle means that the sashes always overlap to some extent and never completely superpose or surmount each other (especially in cases where there are at least two movable sashes).

[0005] That in turn means that certain functions are prevented, such as completely cleaning the overlapped portions of the door/window by working through the passage afforded by the door/window itself.

[0006] Also known in the general technical field of doors and windows are handles known as recessed handles where the handle body has the shape of a shell which is set totally inside the frame structure of the sliding sash and which has a concave part accessible to the user.

[0007] Such a handle is known from e.g. FR 2 712 337 A1.

[0008] On the bottom of the concave part there is a button for actuating a catch for opening/closing the sash and which the user can actuate with a finger by exerting enough pressure on the button to lock/unlock the catch and hence the movable part of the door/window frame relative to the fixed part. These handles, although very convenient in that a very limited effort is required to actuate the catch with a finger and to move the catch by just a small amount in order for it to operate, are totally unsuitable for "lift and slide" doors/windows since they do not have any lifting mechanisms.

[0009] The main aim of this invention, therefore, is to provide a door/window structured in such a way as to provide an operating zone having limited transversal dimensions, such as to allow the door/window with two sashes movable relative to each other to be both lifted and freely slid for the full width, without limitations.

[0010] Another aim of the invention is to allow the manufacture of a door/window having a handle with versatile, multipurpose features such that a single design can be used for a wide range of different applications in order to reduce the number of designs and model ranges to be manufactured, with obvious advantages in terms of savings in costs of production, warehousing, transport and management.

[0011] These aims are fully achieved by the sliding door/window according to this invention, and the handle applied to it, as characterized in the appended claims.

[0012] According to the invention, the door/window is equipped with an operating handle comprising a slider that can move forward and backward alternately in a guide in the handle body and connected to the control element, which is the form of a rod, for actuating the controlling element itself, and a lever interpivoted to the handle body; the lever has a first end to be gripped by the user and a second operating end which can be conjugated with the slider that is operatively configured in such a way as to allow the lever to rotate between two stable limit conditions: a first condition in which the operating end applies with a first zone of it an opposing action on a first control profile of the slider, in such a way as to prevent translation of the slider when the lever is housed inside the handle body; and a second condition in which the operating end applies with a second zone of it a pushing action on a second control profile of the slider, opposite the first profile, in order to enable translation of the sash when the lever protrudes from the handle body. Thanks to this configuration, the operating rod of the door/window is very easy for the user to operate in a small internal working space and with a minimal effort.

[0013] Further, in the case of lift and slide doors and windows, it is possible to obtain a configuration in which two movable sashes surmount each other exactly thanks to the possibility of moving a first sash and then placing the lever in a closed, recessed position and then performing the same operation with the second sash without the interference from the handle, no longer in its previous condition.

[0014] The presence of the protruding lever during opening creates a double gripping zone comprising both the protruding lever and the inside part of the handle body that is almost completely free.

[0015] The different position of the lever, in a protruding or recessed position, provides the user with an immediate indication as to the configuration of the sash (open or closed). According to another aspect of the invention,

this lever structure, that is, interpivoted, forms a first-class lever of advantageous type which reduces stress during rotation and which, thanks to the special conjugated profiles between the lever and the slider, makes it possible to avoid using additional fastening elements that wear over time. According to the above aims, the technical features of the invention are clearly described in the claims below and its advantages are more apparent from the detailed description which follows, with reference to the accompanying drawings which illustrate a preferred non-limiting example embodiment of it, and in which:

- Figure 1 is a schematic elevation view of a sliding door/window according to this invention;
- Figure 2 is a perspective, partly exploded view of a handle according to the invention illustrated in its entirety;
- Figure 3 is a side view of the handle of Figure 1;
- Figure 4 is a longitudinal cross section of the handle according to the invention, illustrated in a first characteristic operating configuration of it;
- Figure 5 is a front view of the handle of Figure 3;
- Figure 6 is a longitudinal cross section of the handle according to the invention, illustrated in a second characteristic operating configuration of it;
- Figure 7 is a front view of the handle shown in Figure 5;
- Figure 8 is a front view showing only the handle according to the invention;
- Figure 9 is a side view of the handle of Figure 8.

[0016] With reference to the accompanying drawings, the numeral 4 in Figure 1 denotes in its entirety a door/window comprising a fixed frame 7 mounting a fixed (or movable) sash 52 and an openable sash 53. The openable sash 53 is supported on sliding units 54 (carriages) which, by interacting between the openable sash 53 and a bottom horizontal member 55 of the fixed frame 7, allow the sash 53 to slide along a horizontal line 56 in both directions 57 and 58 of opening and closing the door/window 4, respectively.

[0017] The door/window 4 illustrated may be, for example, but without limiting the invention, of the "lift and slide" type and is equipped with a handle 1 that can be switched by the user between two distinct states.

[0018] In the first of these states, the openable sash 53 is lifted vertically off the horizontal member 55 (arrow F53) in such a way as to disengage it from the sealing strips (of conventional type and therefore not illustrated), allowing it to slide freely along the horizontal line 56 of opening and closing the door/window 4. In the second state of the handle 1, the sash 53 can be re-lowered to the position of engagement with the sealing strips (see arrow F53a) upon the return of the sash 53 itself to a closed configuration when it comes into contact with the vertical member of the frame 7 or in an intermediate, stabilized open position. Lifting and lowering the sash 53 is effected by transmission systems located between the sash itself and the carriages 54, these systems being of known type not illustrated (for example, rods and corner drives mounted along the perimeter of the sash or sashes) and not within the scope of this invention.

[0019] As shown in Figure 2, the handle 1 basically comprises a handle body 2 and a slider 3 associated with the handle body 2 and connected to operating means for lifting / lowering the openable sash 53 and for moving the closing - striker means between the sash and the frame.

[0020] These means are partially visible in Figure 3 and embodied by a rod 14 or control element associated with the sash 53, that is, slidable in a groove made in the profile of the sash 53 itself.

[0021] The handle body 2 has a substantially shell-shaped structure (Figures 6 and 7) and is provided with a convex part 10 and a concave part labelled 11: in other terms, this forms a sort of "recess".

[0022] The convex part 10 can be set in a tubular cavity 5 of a structural member 6 (more specifically, a vertical member) of the sliding sash 53 through a slot 8 formed on a perimetric wall 9 of the member 6.

[0023] The open concave part 11 is oriented towards the outside of the door/window 4.

[0024] The slider 3 (see Figure 3) is mounted in a guide 12 on the handle body 2 in such a way as to slide backwards and forwards alternately relative to it (see arrows F13a and F13b, Figures 4 and 6).

[0025] The slider 3 is also connected by a pivot joint 13 to the rod 14 of the operating means which control lifting / lowering, and thus opening and closing, of the sash 53.

[0026] The handle 1 also comprises (Figure 4) a lever 15 which is interpivoted at 18 to the handle body 2 and which has a first end 16 to be gripped with the hand and a second operating end 17 located inside the handle body 2 and designed to be conjugated with the slider 3.

[0027] The lever 15 can be gripped from the outside of the handle body 2.

[0028] In other terms, therefore, the lever 15 constitutes a first-class lever where the effort arm Bp (first end 16) is longer than the resistance arm Br (second end 17) relative to the fulcrum 18, making operation extremely advantageous (see Figure 4). The lever 15 can be operated by the user of the handle 1 and, thanks also to the special geometrical configuration of the slider 3 and to their coupling, adopts two characteristic stable limit positions shown in Figures 4 and 6 (arrow F15).

[0029] Basically, in the first stable limit condition, the operating end 17 applies with a first zone of it 23 an opposing action on a first control profile 20b of the slider 3: this prevents translation of the slider 3 when the lever 15 is housed inside the handle body 2.

[0030] In the second stable limit condition, the operating end 17 applies with a second zone of it 22 a pushing action on a second control profile 20a of the slider 3, opposite the first profile 20b, in order to enable translation of the sash 53 when the lever 15 protrudes from the han-

dle body 2.

[0031] These conditions are therefore achieved with a very small movement inside the handle body 2, and with minimal effort required of the user to impart to the rod 14 sufficient movement to drive the sash 53 (in order to lift or lower it).

[0032] More specifically, in the first of these stable limit conditions (again see Figure 4), the operating end 17 interacts with the slider 3 in such a way as to push it along the guide 12 inside the concave part 11 of the handle body 2 while at the same time pushing the rod 14 downwards (arrow F13a) to a condition where the sash 53 is in the closed configuration, that is to say, where the sash 53 is lowered onto the horizontal member 55 in and prevented from sliding horizontally, thereby locking the door/window in the closed configuration through the above mentioned closing / striker means.

[0033] In the second limit condition (Figure 6), on the other hand, the operating end 17 moves relative to the slider 3 in such a way as to push it upwards (arrow F13b) to a position where the sash 53, by simultaneous disengagement of the closing / striker means, is unlocked and lifted off the horizontal member 55 in such a way that it can slide freely along the horizontal line 56 of opening and closing the door/window 4.

[0034] More in detail, as clearly shown in Figures 4 and 6, the slider 3 and the operating end 17 of the lever 15 have respective geometrical profiles 20b, 20a and 19, conjugated with and simultaneously rolling on each other during operation of the lever 15.

[0035] The conjugation between the profiles makes it possible to mechanically correlate the rotation of the lever 15 about its fulcrum 18 to lock the slider 3 in a stable condition with the translation movement of the slider 3 along the respective guide 12.

[0036] The control profiles 20b and 20a of the slider 3 - more specifically - surround a protuberance 21 or tooth with a substantially cylindrical shape formed inside the slider 3, on one side of a hollow space 24 formed in the slider 3 itself.

[0037] The profile 19 of the operating end 17 of the lever 15 is divided into branches, comprising two distinct sections 22 and 23 constituting the above mentioned first and second zones 23 and 22.

[0038] The section 22, with convex profile, can be associated with a similarly convex section 20b of the slider 3 facing the hollow space 24.

[0039] The other section 23 of the profile 19, on the other hand, is essentially concave and shaped to match the section 20a of the slider 3 profile which, instead, faces the protuberance 21 on the side opposite that of the above mentioned hollow space 24 of the slider 3.

[0040] Comparing Figures 2, 4 and 5 shows that the concave part 11 of the handle body 2 is shaped in such a way as to accommodate the whole of the lever 15 within the body 2 of the handle 1 in the configuration where the openable sash 53 of the door/window 4 is free to slide horizontally.

[0041] For keeping the lever 15 securely in this configuration, retaining means are provided which, in an embodiment that is preferable for its simplicity, effectiveness and reliability, comprise a ferromagnetic element 25 contained in the material structure of the gripping end 16 of the lever 15 and a permanent magnet 26 located in a housing 27 in the handle body 2 and facing the ferromagnetic element 25 when the openable sash 53 of the door/window 4 is in the closed condition.

[0042] The handle 1 also comprises means for easier switching of the lever 15 position from the condition where it is accommodated in the shell to the condition in which the gripping end 16 of the lever 15 is directed outwards.

[0043] More specifically, these easy switching means comprise at least one corrugation 28 formed in relief on the back 29 of the operating end 17 of the lever 15 and which may, if necessary, advantageously be integrated by enlarged indentations or impressions 30 formed on an edge 31 of the concave part 11 of the handle body 2 immediately contiguous with the boundary surface of the lever 15.

[0044] The invention fully achieves the aim of allowing the sash 53 to slide relative to the sash 52 without obstacles of any kind.

[0045] Furthermore, if the door/window 4 is made in such a way that both sashes 53 and 52 can slide (for example with a handle 1' on the sash 52) it is obvious that their sliding relative to each other without interference from the handle 1 makes it possible to slide both the sashes by desired amounts in suitable combinations in such a way that the entire outside surface of the door/window 4 can be cleaned.

[0046] In other words, two movable sashes with handles 1 of this kind can be moved even simultaneously to a central position half way along the door/window. One of the two sashes can then be stopped by returning the lever 15 to its housing inside the concave part 11, that is, by moving the lever 15 back into its recessed position within the handle body 2 and then placing one sash in the locked position while the other sash can be moved towards it from the opposite side in such a way that both sashes are exactly superposed and the parts of the glazing otherwise inaccessible are exposed, for example for cleaning.

[0047] In a preferred embodiment, as shown in Figures 4 and 6, one end 32 of the slider 3 (opposite the end 33 that is connected to the rod 14) may be tapered, converging in the plane of the rod 14 away from the rod 14.

[0048] The tapered shape of the end 32, and the fact that the slider 3 is coupled to the guide 12 by a cylindrical pin 34 allow the slider 3 to oscillate angularly about the pin 34 so that it can adapt to the shape and actual positions of the tubular cavity 5 in the structural member 6 of the door/window frame 7 the handle 1 is mounted on. This oscillation or pendular motion of the slider 3 is clearly visible also in Figure 9 (arrow F33) which also shows another embodiment of the end 33 which, in this case, is in the shape of a hook. This characteristic pendular

motion is particularly advantageous because it confers on the handle 1 a very high level of adaptability which allows it to be mounted on doors/windows of different kinds with structural members whose tubular cavities 5 differ in shape, position and size, in particular in the position of the groove for housing the operating rod 14.

[0049] Moreover, it should be noted that this adaptability, in the form of a self-adjustment capability of the slider 3, is facilitated by the special shape of the lever 15 which - as already mentioned - is advantageously such that the profile 19 of its operating end 17 can always be exactly and perfectly conjugated in a correct mechanical ratio with the corresponding profile 20 of the slider 3.

[0050] During assembly, therefore, this pendular motion makes it possible to couple the end 33 of the lever 15 to a joining element 14a (for example, a protruding boss, see Figure 9) provided on the rod 14 quickly and easily independently of the position of the rod 14 and of the respective groove inside the tubular cavity 5.

[0051] This feature enhances the adaptability of the handle to the many different types of structural members available on the market for use in the manufacture of sliding doors and windows.

[0052] The invention described above is susceptible of industrial application and may be modified and adapted in several ways without thereby departing from the scope of the invention as defined by the appended claims.

Claims

1. A sliding door or window (4) of the type comprising:

- at least one fixed frame (7);
- at least one openable sash (53);
- at least one sliding unit (54) interacting between the fixed frame (7) and the openable sash (53) in such a way as to enable the latter to slide in both directions (58, 59) along a horizontal line (56);
- a control element (14) associated with the sash (53) and connected to operating means designed to set the sash (53) from a condition in which it can slide to a condition in which the door/window (4) can be locked, and vice versa;
- an operating member or handle (1) comprising a handle body (2) that can be recessed, through a slot (8), in a cavity (5) in the sash (53), the operating member (1) further comprising:
- a slider (3) that can move forward and backward alternately in a guide (12) in the handle body (2) and connected to the controlling element (14) in order to actuate the controlling element (14) itself; and
- a lever (15) interpivoted to the handle body (2), **characterized in that** the lever (15) is interpivoted to the handle body (2) at fulcrum (18), in such a way as to form a first-class lever; the lever (15) having a first end (16) for gripping and a second operating end (17) which can be conjugated with the slider (3) that is operatively configured in such a way as to allow the lever (15) to rotate between two stable limit conditions:

  a first condition in which the operating end (17) applies with a first zone of it (23) an opposing action on a first control profile (20b) of the slider (3), in such a way as to prevent translation of the slider (3) when the lever (15) is housed inside the handle body (2); and
  a second condition in which the operating end (17) applies with a second zone of it (22) a pushing action on a second control profile (20a) of the slider (3), opposite the first profile (20b), in order to enable translation of the sash (53) when the lever (15) protrudes from the handle body (2).

2. The door or window according to claim 1, **characterized in that** the slider (3) and the operating end (17) have specific conjugate geometric profiles (20b, 20a, 19) designed to suitably correlate the rotation of the lever (15) with the simultaneous prevention of translation movement or translation movement of the slider (3).

3. The door or window according to claim 2, **characterized in that** the slider (3) is provided with a protuberance (21) surrounded by the control profiles (20a, 20b).

4. The door or window according to claim 2, **characterized in that** the operating end (17) is provided with the convex profile (19), which can be mechanically coupled to the equally convex profiles (20b, 20a) presented by a protuberance (21) of the slider (3).

5. The door or window according to claim 2, **characterized in that** the slider (3) has a hollow space (24) located on one side of the protuberance (21) and into which the operating end (17) of the lever (15) can move.

6. The door or window according to claim 4, **characterized in that** the profile (19) of the operating end (17) is divided into said first and second zones (23, 22) or two distinct sections (22, 23), the first of which (23) applies an opposing action on the protuberance (21) such as to prevent the mobility or sliding of the slider (3), while the other section (23), opposite the previous one, is designed to apply a pushing action on the slider (3).

7. The door or window according to claim 1, **characterized in that** the lever (15) can be recessed in the handle body (2) at least when the sash (53) is in the closed condition.

8. The door or window according to claim 1, **characterized in that** it comprises retaining means (25, 26) for keeping the lever (15) securely in at least one of the limit conditions.

9. The door or window according to claim 8, **characterized in that** the retaining means (25, 26) comprise a ferromagnetic element (25) and a permanent magnet (26), either of which, without distinction, can be associated with the lever (15) and the other to the handle body (2).

10. The door or window according to claim 7, **characterized in that** it comprises means (26, 30) for easier switching between lever (15) positions.

11. The door or window according to claim 10, **characterized in that** the easy switching means (28, 29) include at least one corrugation (28) on the back (29) of the lever (15).

12. The door or window according to claim 10 or 11, **characterized in that** the easy switching means (26, 30) include at least one indentation (30) made around the boundary of the lever (15).

Patentansprüche

1. Schiebetür oder -fenster (4) vom Typ, der Folgendes umfasst:

    - mindestens einen fixierten Rahmen (7);
    - mindestens einen öffnungsfähigen Flügel (53);
    - mindestens eine Schiebeeinheit (54), die so zwischen dem fixierten Rahmen (7) und dem öffnungsfähigen Flügel (53) interagiert, dass ein Schieben des Letzteren in beide Richtungen (58, 59) entlang einer horizontalen Linie (56) ermöglicht wird;
    - ein Steuerelement (14), das an den Flügel (53) angeschlossen und mit Betätigungsmitteln verbunden ist, die dazu konzipiert sind, den Flügel (53) von einem Zustand, in dem er verschiebungsfähig ist, zu einem Zustand, in dem die Tür/das Fenster (4) verriegelbar ist, und umgekehrt, einzustellen;
    - ein Betätigungsglied bzw. einen Griff (1), umfassend einen Griffkörper (2), der durch einen Schlitz (8) hindurch in einen Hohlraum (5) im Flügel (53) einlassbar ist,

    wobei das Betätigungsglied (1) ferner Folgendes umfasst:

    - einen Schieber (3), der alternierend in einer Führung (12) im Griffkörper (2) vor und zurück bewegbar und mit dem Steuerelement (14) verbunden ist, um das Steuerelement (14) auszulösen; und
    - einen Hebel (15), der mit dem Griffkörper (2) schwenkbar verbunden ist, **dadurch gekennzeichnet, dass** der Hebel (15) mit dem Griffkörper (2) so am Angelpunkt (18) schwenkbar verbunden ist, dass ein erstklassiger Hebel gebildet wird; wobei der Hebel (15) ein erstes Ende (16) zum Greifen und ein zweites Ende (17) zum Betätigen aufweist, welches mit dem Schieber (3) korrespondierbar ist, der wirkungsmäßig so konfiguriert ist, dass eine Drehung des Hebels (15) zwischen den zwei folgenden stabilen Grenzzuständen gestattet wird:

        einem ersten Zustand, in dem das Betätigungsende (17) mit einer ersten Zone davon (23) eine Gegenwirkung auf ein erstes Steuerprofil (20b) des Schiebers (3) ausübt, sodass eine Translation des Schiebers (3) verhindert wird, wenn der Hebel (15) im Griffkörper (2) untergebracht ist; und
        einem zweiten Zustand, in dem das Betätigungsende (17) mit einer zweiten Zone davon (22) eine Schubwirkung auf ein zweites Steuerprofil (20a) des Schiebers (3) gegenüber dem ersten Profil (20b) ausübt, um eine Translation des Flügels (53) zu verhindern, wenn der Hebel (15) aus dem Griffkörper (2) hervorkragt.

2. Tür oder Fenster nach Anspruch 1, **dadurch gekennzeichnet, dass** der Schieber (3) und das Betätigungsende (17) spezifische, korrespondierende geometrische Profile (20b, 20a, 19) aufweisen, die dazu konzipiert sind, die Drehung des Hebels (15) mit der gleichzeitigen Verhinderung der Translationsbewegung oder mit der Translationsbewegung des Schiebers (3) geeigneterweise zu korrelieren.

3. Tür oder Fenster nach Anspruch 2, **dadurch gekennzeichnet, dass** der Schieber (3) mit einer Auskragung (21) bereitgestellt ist, die von den Steuerprofilen (20a, 20b) umgeben ist.

4. Tür oder Fenster nach Anspruch 2, **dadurch gekennzeichnet, dass** das Betätigungsende (17) mit dem konvexen Profil (19) bereitgestellt ist, das mechanisch mit den gleichermaßen konvexen Profilen (20b, 20a) verkuppelbar ist, die von einer Auskragung (21) des Schiebers (3) gebildet werden.

5. Tür oder Fenster nach Anspruch 2, **dadurch ge-**

kennzeichnet, dass der Schieber (3) einen Hohlraum (24) aufweist, der an einer Seite der Auskragung (21) liegt und in den das Betätigungsende (17) des Hebels (15) hinein bewegbar ist.

6. Tür oder Fenster nach Anspruch 4, **dadurch gekennzeichnet, dass** das Profil (19) des Betätigungsendes (17) in die erste und zweite Zone (23, 22) beziehungsweise zwei getrennte Abschnitte (22, 23) unterteilt ist, von denen der erste (23) eine Gegenwirkung auf die Auskragung (21) ausübt, sodass die Beweglichkeit beziehungsweise das Schieben des Schiebers (3) verhindert wird, während der andere Abschnitt (23) gegenüber dem Letzteren dazu konzipiert ist, eine Schubwirkung auf den Schieber (3) auszuüben.

7. Tür oder Fenster nach Anspruch 1, **dadurch gekennzeichnet, dass** der Hebel (15) zumindest dann im Griffkörper (2) einlassbar ist, wenn sich der Flügel (53) im geschlossenen Zustand befindet.

8. Tür oder Fenster nach Anspruch 1, **dadurch gekennzeichnet, dass** sie beziehungsweise es Festhaltemittel (25, 26) zum sicheren Halten des Hebels (15) in mindestens einem der Grenzzustände umfasst.

9. Tür oder Fenster nach Anspruch 8, **dadurch gekennzeichnet, dass** die Festhaltemittel (25, 26) ein ferromagnetisches Element (25) und einen Permanentmagneten (26) umfassen, von denen ein beliebiges an den Hebel (15) und das andere an den Griffkörper (2) anschließbar ist.

10. Tür oder Fenster nach Anspruch 7, **dadurch gekennzeichnet, dass** sie beziehungsweise es Mittel (26, 30) zum leichteren Wechseln zwischen Positionen des Hebels (15) umfasst.

11. Tür oder Fenster nach Anspruch 10, **dadurch gekennzeichnet, dass** die Mittel (28, 29) zum leichten Wechseln mindestens eine Riffelung (28) auf der Rückseite (29) des Hebels (15) umfassen.

12. Tür oder Fenster nach Anspruch 10 oder 11, **dadurch gekennzeichnet, dass** die Mittel (26, 30) zum leichten Wechseln mindestens eine Vertiefung (30) beinhalten, die um den Rand des Hebels (15) herum ausgebildet ist.

Revendications

1. Porte ou fenêtre coulissante (4) du type comprenant :

- au moins un cadre fixe (7) ;
- au moins un châssis ouvrable (53) ;
- au moins une unité coulissante (54) interagissant entre le cadre fixe (7) et le châssis ouvrable (53) de sorte à permettre à ce dernier de coulisser dans deux directions (58, 59) le long d'une ligne horizontale (56) ;
- un élément de commande (14) associé au châssis (53) et relié à des moyens d'actionnement conçus pour régler le châssis (53) d'une condition dans laquelle il peut coulisser à une condition dans laquelle la porte/la fenêtre (4) peut être verrouillée, et vice versa ;
- un organe fonctionnel ou poignée (1) comprenant un corps de poignée (2) pouvant être encastrée, à travers une fente (8), dans une cavité (5) dans le châssis (53),

l'organe fonctionnel (1) comprenant de plus :

- un coulisseau (3) pouvant se déplacer vers l'avant et l'arrière de façon alternative dans un guide (12) dans le corps de poignée (2) et relié à l'élément de commande (14) afin d'actionner l'élément de commande (14) lui-même ; et
- un levier (15) pivotant par rapport au corps de poignée (2), **caractérisée en ce que** le levier (15) pivote par rapport au corps de poignée (2) au niveau du point d'appui (18), de manière à former un levier de premier type ; le levier (15) ayant une première extrémité (16) de préhension et une seconde extrémité fonctionnelle (17) pouvant être conjuguée au coulisseau (3) étant fonctionnellement configuré de manière à permettre au levier (15) de tourner entre deux conditions limites stables :

  une première condition dans laquelle l'extrémité fonctionnelle (17) exerce sur sa première propre zone (23), une action antagoniste sur un premier profil de commande (20b) du coulisseau (3), de manière à empêcher la translation du coulisseau (3) lorsque le levier (15) est logé à l'intérieur du corps de poignée (2) ; et
  une seconde condition dans laquelle l'extrémité fonctionnelle (17) exerce sur sa seconde propre zone (22), une action de poussée sur un second profil de commande (20a) du coulisseau (3), opposé au premier profil (20b), afin de permettre la translation du châssis (53) lorsque le levier (15) dépasse du corps de poignée (2).

2. Porte ou fenêtre selon la revendication 1, **caractérisée en ce que** le coulisseau (3) et l'extrémité fonctionnelle (17) possèdent des profils géométriques conjugués spécifiques (20b, 20a, 19) conçus pour corréler de façon appropriée la rotation du levier (15)

avec le blocage simultané du mouvement de translation ou le mouvement de translation du coulisseau (3).

3. Porte ou fenêtre selon la revendication 2, **caractérisée en ce que** le coulisseau (3) est pourvu d'une saillie (21) entourée par les profils de commande (20a, 20b).

4. Porte ou fenêtre selon la revendication 2, **caractérisée en ce que** l'unité fonctionnelle (17) est pourvue d'un profil convexe (19) pouvant être mécaniquement accouplé aux profils convexes équivalents (20b, 20a) présentés par une saillie (21) du coulisseau (3).

5. Porte ou fenêtre selon la revendication 2, **caractérisée en ce que** le coulisseau (3) possède un espace creux (24) logé sur un côté de la saillie (21) et dans lequel l'extrémité fonctionnelle (17) du levier (15) peut se déplacer.

6. Porte ou fenêtre selon la revendication 4, **caractérisée en ce que** le profil (19) de l'extrémité fonctionnelle (17) est divisée en lesdites première et seconde zones (23, 22) ou en deux sections distinctes (22, 23), la première d'entre elles (23) exerçant une action antagoniste sur la saillie (21) de manière à prévenir la mobilité ou le coulissement du coulisseau (3), tandis que l'autre section (23), opposée à la précédente, est conçue pour exercer une action de poussée sur le coulisseau (3).

7. Porte ou fenêtre selon la revendication 1, **caractérisée en ce que** le levier (15) peut être encastré dans le corps de poignée (2) au moins lorsque le châssis (53) se trouve dans la condition de fermeture.

8. Porte ou fenêtre selon la revendication 1, **caractérisée en ce qu'**elle comprend des moyens de retenue (25, 26) pour maintenir le levier (15) fermement dans au moins une des conditions limites.

9. Porte ou fenêtre selon la revendication 8, **caractérisée en ce que** les moyens de retenue (25, 26) comprennent un élément ferromagnétique (25) et un aimant permanent (26) associés, indifféremment, l'un au levier (15) et l'autre au corps de poignée (2).

10. Porte ou fenêtre selon la revendication 7, **caractérisée en ce qu'**elle comprend des moyens (26, 30) permettant de modifier facilement les positions du levier (15).

11. Porte ou fenêtre selon la revendication 10, **caractérisée en ce que** les moyens facilitant la modification des positions (28, 29) incluent au moins une cannelure (28) sur l'arrière (29) du levier (15).

12. Porte ou fenêtre selon les revendications 10 ou 11, **caractérisée en ce que** les moyens facilitant la modification des positions (26, 30) incluent au moins une indentation (30) réalisée autour du pourtour du levier (15).

FIG.1

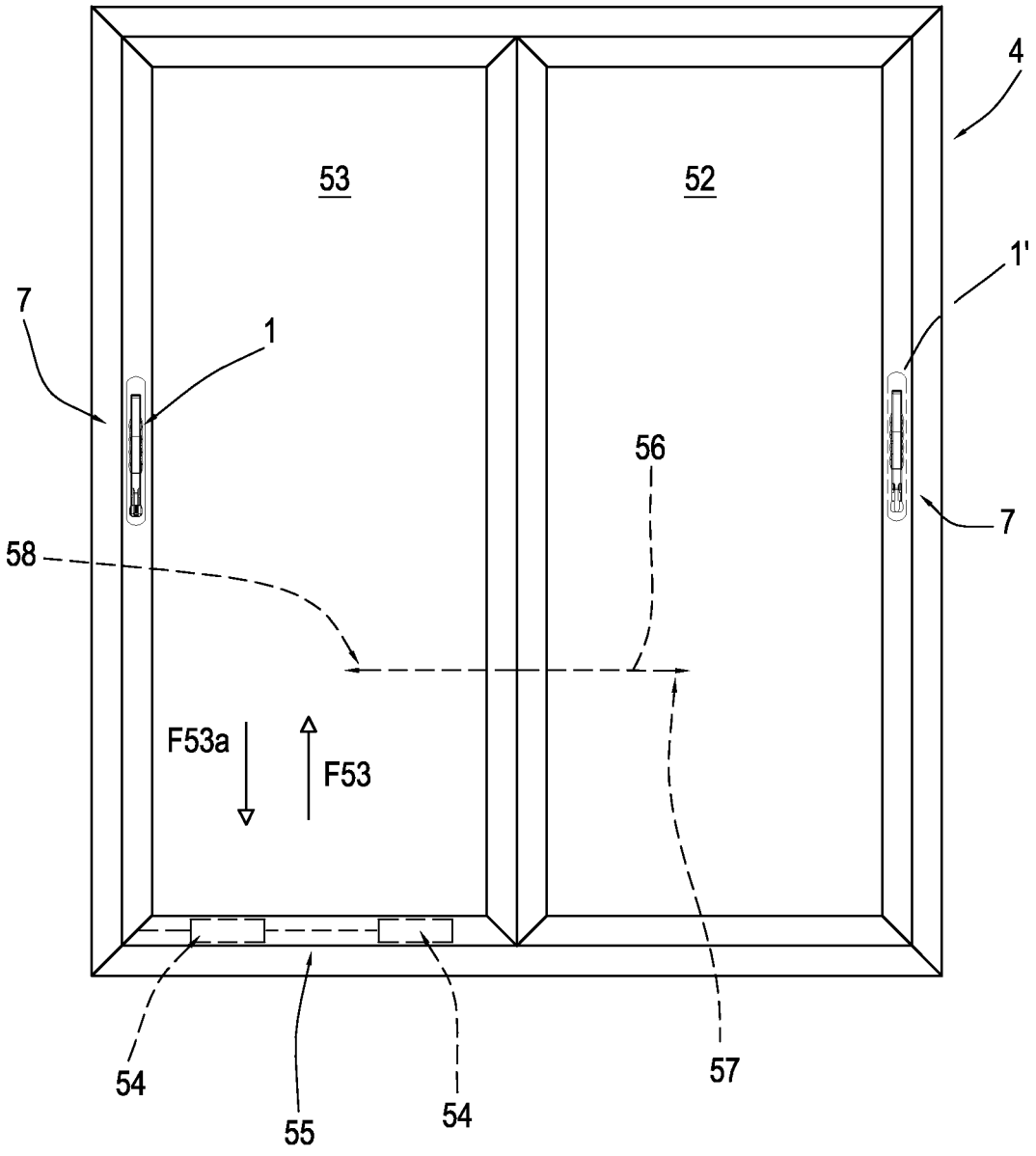


FIG.2

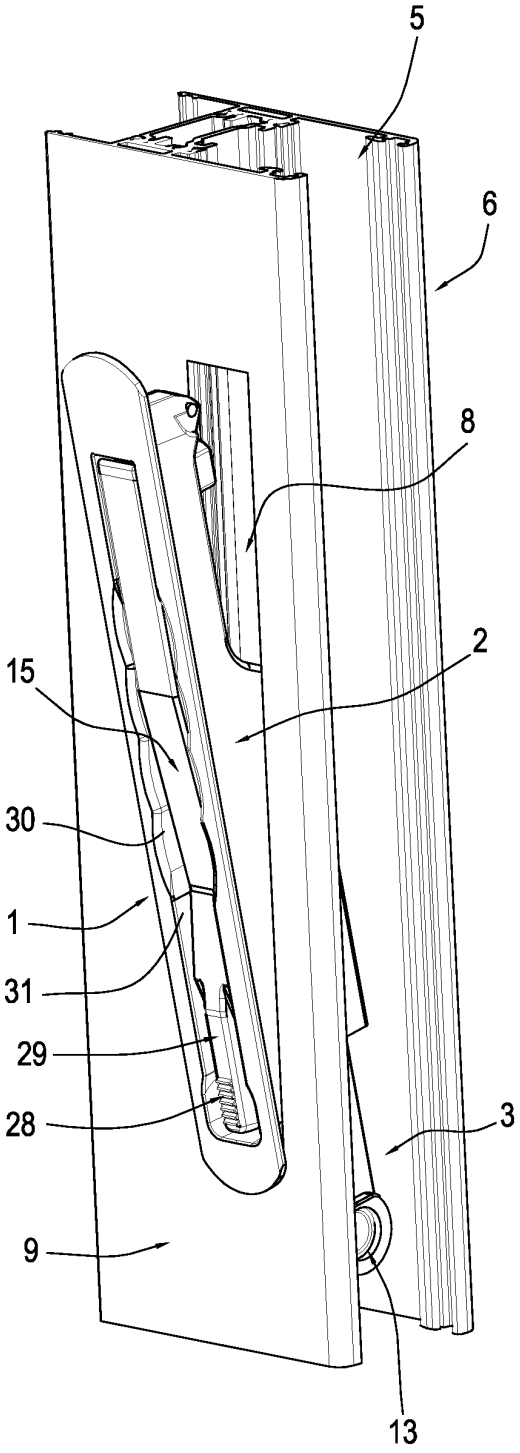


FIG.3

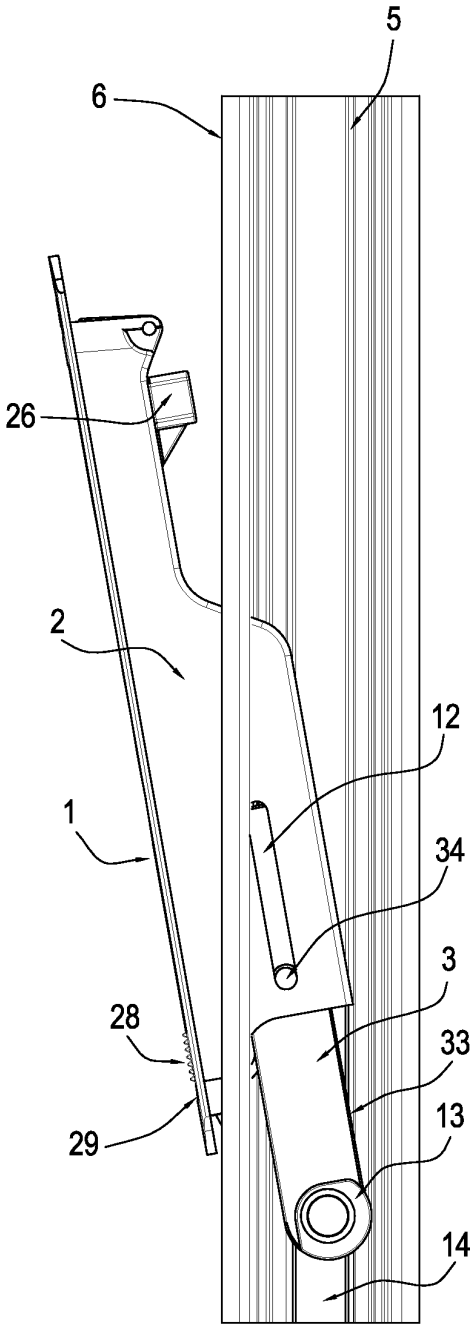


FIG.4

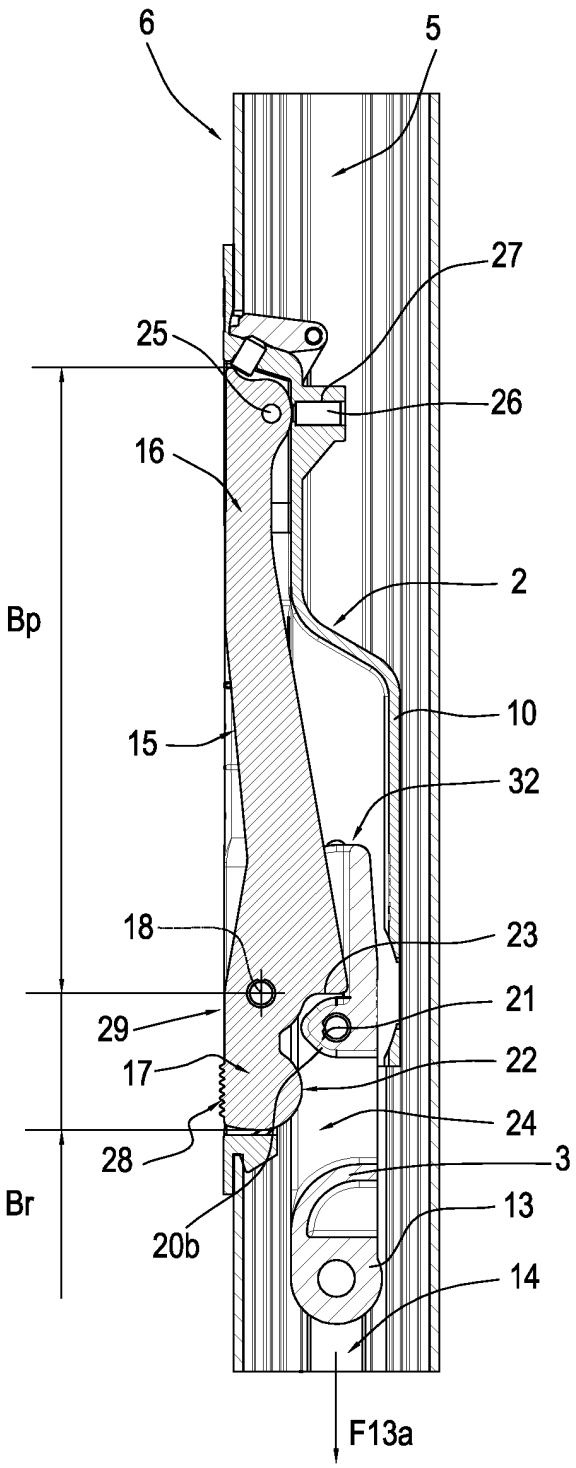

6
5
27
25
26
16
2
Bp
10
15
32
18
23
21
29
17
22
24
28
3
Br
13
20b
14
F13a

FIG.5

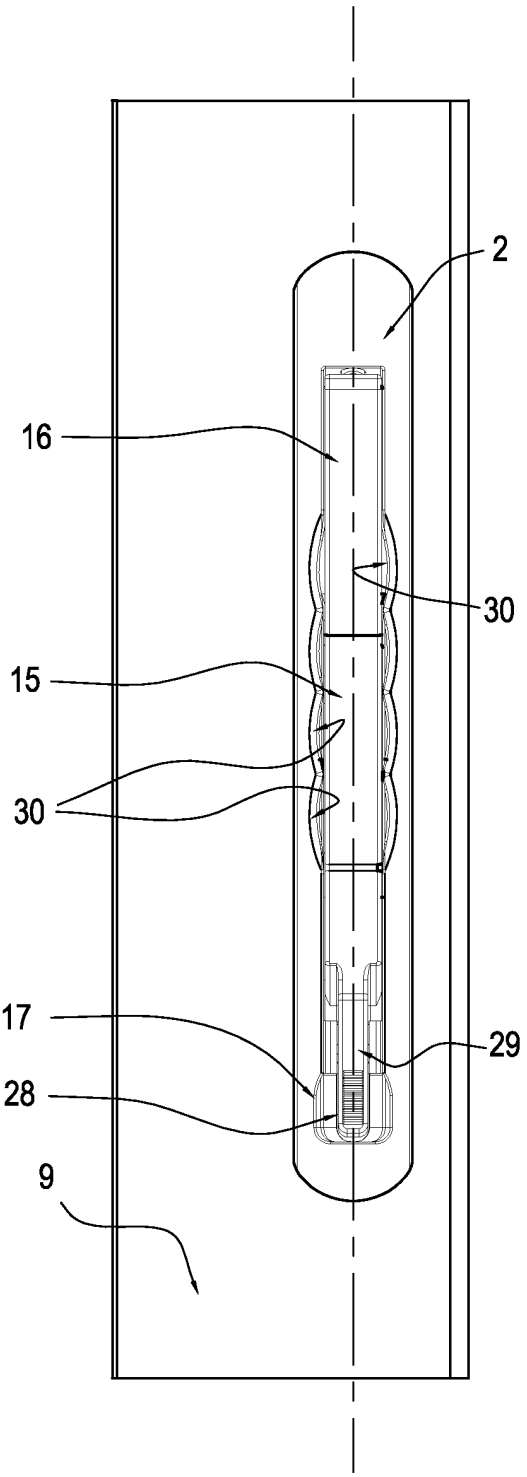

2
16
30
15
30
17
29
28
9

FIG.6

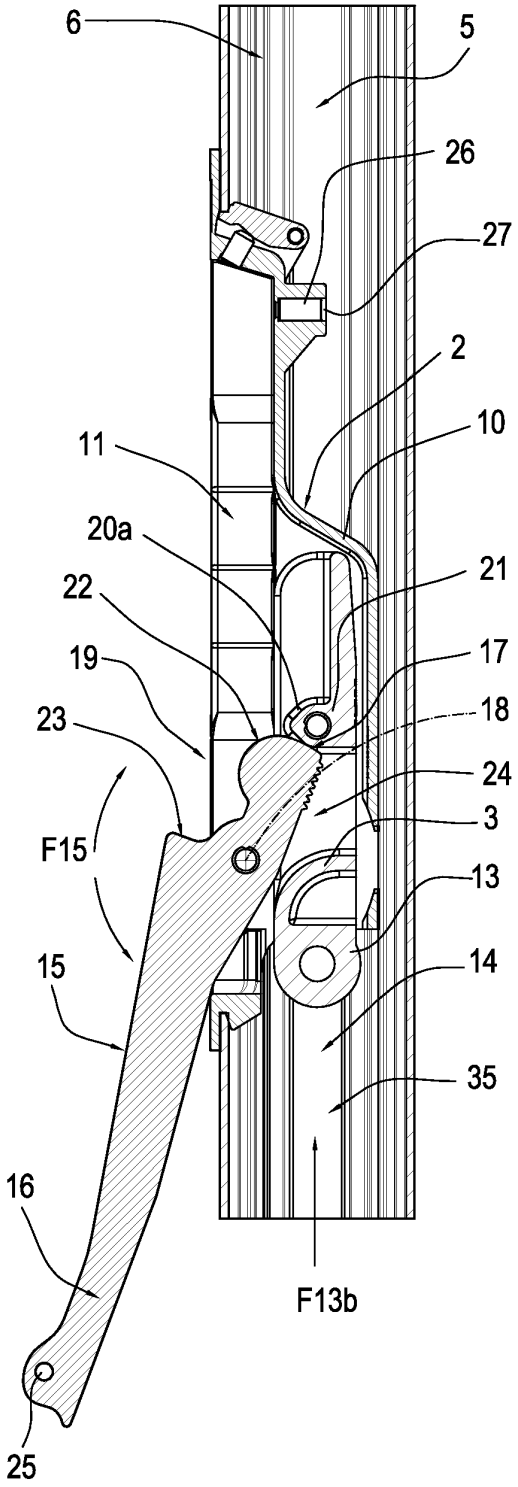

6
5
26
27
2
10
11
20a
21
22
19
17
18
23
24
3
F15
13
15
14
35
16
F13b
25

FIG.7

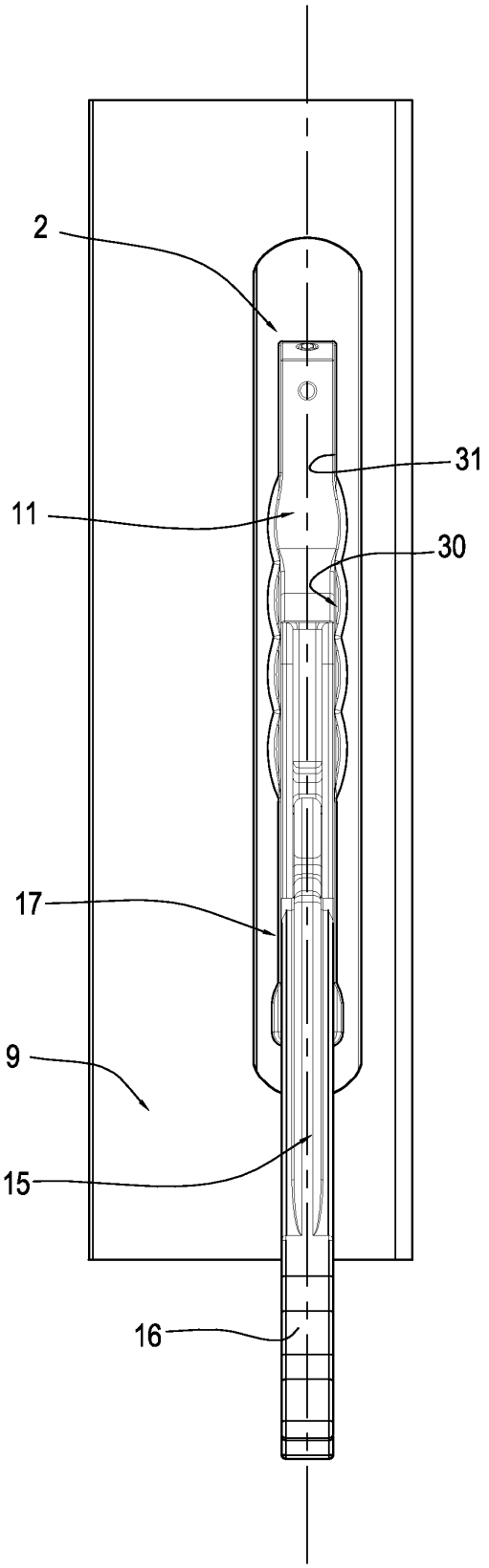

2
31
11
30
17
9
15
16

FIG.8

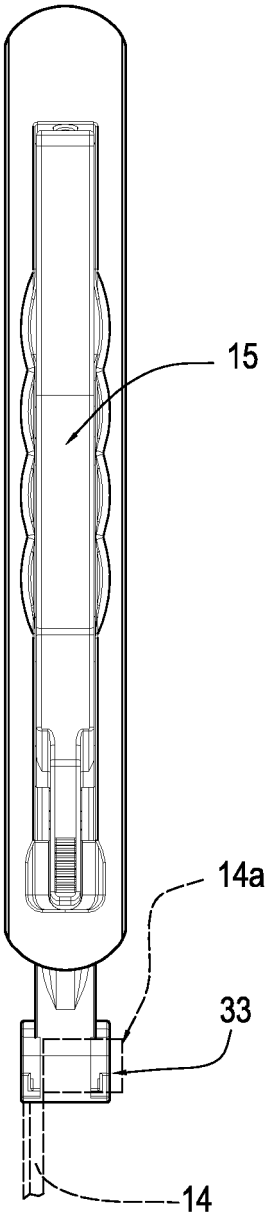
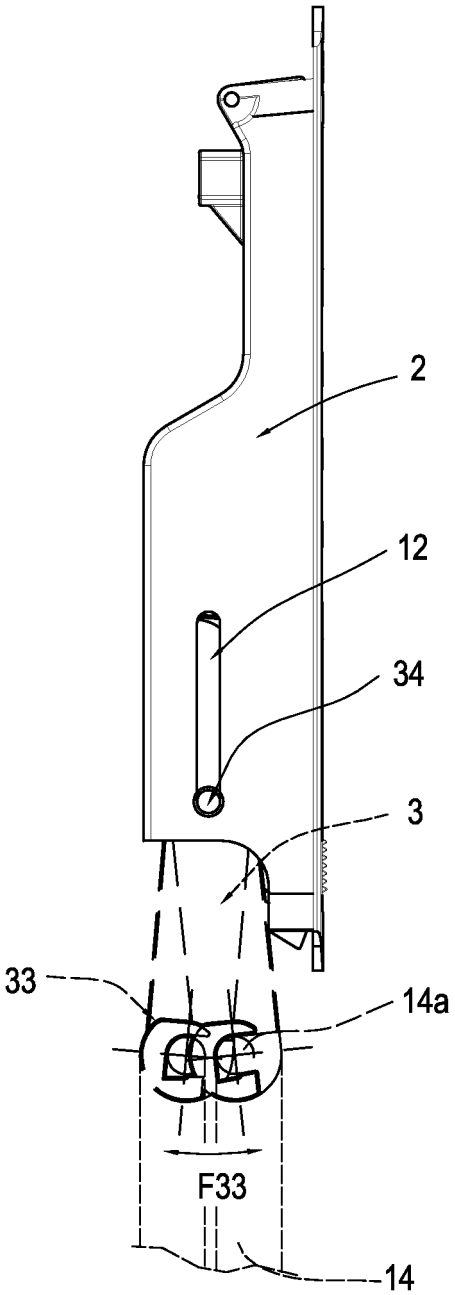


FIG.9



REFERENCES CITED IN THE DESCRIPTION

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