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(54) **Security device for a window.**

(57) The invention relates to a security device for a window, wherein the window is rotatable with respect to a window frame about a turning axis and a tilting axis, wherein the turning axis extends transverse to the tilting axis, wherein the security device comprises a base member, an attachment member and an arm for engaging the attachment member, wherein security device is provided with a coupling that couples the arm to the base member, wherein the coupling is arranged for rotating the arm with respect to the base member about a first rotation axis that extends parallel to the turning axis of the window and a second rotation axis that extends parallel to the tilting axis of the window.

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Security device for a window

BACKGROUND

The invention relates to a security device for restricting the opening of a window with respect to a window frame.

A typical window is rotatable with respect to a window frame about a vertical turning axis. Known security devices comprise a base member that is mounted to the window frame, an attachment member that is mounted to the window and an arm that is rotatably mounted to the base member about a rotational axis parallel to the vertical turning axis of the window. The arm is rotatable towards the attachment member and engages said attachment member. When the attachment member is engaged, the window can only be opened within a restricted range that is defined by the length of the arm between the base member and the attachment member, e.g. for ventilation purposes, while securing the window against breaking and entering.

A special type of window is the so-called 'turn-tilt window', which is not only rotatable about the vertical turning axis, but also about a horizontal tilting axis. The known security devices are incompatible with this special type of window. Hence, there is no secure way of restricting the opening of a turn-tilt window.

It is an object of the present invention to provide a security device for a window, wherein turning as well as tilting of the window can be restricted.

SUMMARY OF THE INVENTION

The invention provides a security device for a window, wherein the window is mounted in a window frame and is rotatable with respect to said window frame about a turning axis extending parallel to and at a first side of the window frame and a tilting axis extending parallel to and at a second side of the window frame, wherein the turning axis extends transverse to the tilting axis, wherein the security device comprises a base member that is arranged to be mounted to a third side of the window frame at an opposite side of the window with respect to the first side of the window frame, an attachment member that is arranged to be mounted to the window near the base member and an arm that is arranged to be rotated with respect to the base member towards the attachment member for engaging the attachment member, wherein security device is provided with a coupling that couples the arm to the base member, wherein the coupling is arranged for rotating the arm with respect to the base member about a first rotation axis that extends parallel to the turning axis of the window and a second rotation axis that extends parallel to the tilting axis of the window.

The coupling can provide the arm with the rotational degrees of freedom that are required to facilitate both turning and tilting of the window. The security device according to the invention can thus provide a means for restricted opening of a so-called turn-tilt window in both a turned and tilted open position, e.g. for the purpose of ventilation.

In an embodiment the coupling comprises a ball joint. Alternatively the coupling comprises a multi-directional bearing or hinge. In a further alternative embodiment, the coupling comprises a flexible element. All these couplings can provide at least two rotational degrees of freedom to the arm, including the rotations about the first rotation axis and the second rotation axis.

In an embodiment the turning axis extends orthogonal to the tilting axis. Preferably, the turning axis extends vertical or substantially vertical and wherein the tilting axis extends horizontal or substantially horizontal. This is typically the case for rectangular or quadrangular turn-tilt windows and corresponding window frames.

In an embodiment the arm is provided with a slot extending in the longitudinal direction of the arm for engaging the attachment member, wherein the attachment member comprises a protrusion with a protrusion body that is arranged to extend into the slot and a protrusion head at the distal end of the protrusion body that is arranged to hook into the slot to prevent retraction of the protrusion body out of the slot in a retraction direction. The arm can thus securely engage the arm at the slot to prevent or resist breaking and entering.

In an embodiment thereof the security device further comprises a fixing member for fixing the position of the protrusion head within the slot along the longitudinal direction of the arm. The fixation can prevent that a window unintentionally gets closed, for example due to a draft. Furthermore, the protrusion head can be fixed at an intermediate position along the longitudinal direction of the arm, thereby controlling the amount by which the window is opened.

In an embodiment the fixing member comprises a biasing element that is arranged for biasing the protrusion head to clampingly abut the inside of the slot for fixing the position of the protrusion head within the slot along the longitudinal direction of the arm. The protrusion head can thus be automatically moved into clamping abutment with the inside of the slot. The clamping abutment can provide enough friction and/or resistance between the protrusion head and the inside of the slot to prevent or resist displacement of the protrusion head with respect to the arm in the longitudinal direction of the arm. The protrusion head can be clamped to the inside of the slot along any

position within the slot in the longitudinal direction of the arm. The position of the window can thus be steplessly or continuously adjusted. Furthermore, the clamping abutment may reduce rattling noises when the window moves under the influence of wind.

In an embodiment the biasing element is arranged for biasing the protrusion head in the retraction direction. The protrusion head can thus be pulled towards the attachment member rather than having to push. Furthermore, attempts to open the window further can result in an even tighter clamping and thus a more secure fixation of the position of the protrusion head within the slot.

In a preferred embodiment the fixing member is provided with an operating element that is operationally connected to the protrusion and that is arranged to counteract the bias of the biasing element when operated to terminate the clamping abutment of the protrusion head on the inside of the slot. When the operating element is operated, the protrusion head can be freely moved through the slot in the longitudinal direction of the arm, thereby temporarily allowing the opening, closing or intermediate positioning of the window.

In a practical embodiment the operating element, preferably a button, a slider or a knob, is arranged to be manually operated. Manual operation can be convenient, as it does not require tools such as a key.

In an alternative embodiment the fixing member comprises a key operated mechanism, in particular a lock cylinder, that is operationally connected to the protrusion for fixing the position of the protrusion head within the slot along the longitudinal direction of the arm. The fixing member comprising the key operated mechanism can be more secure than the manually operated fixing member because it requires a key to be operated. The key can be stored in a secure location away from the window.

In an embodiment the key operated mechanism is operationally connected to the protrusion head to move the

protrusion head into abutment or clamping abutment with the inside of the slot. The key operated mechanism can be used to fix the position of the protrusion head in a similar manner and with the same advantageous effects as the manually operated fixing member of the aforementioned embodiments.

In a further embodiment the arm is provided with a plurality of position elements spaced apart along the longitudinal direction of the arm, wherein the plurality of position elements define a plurality of fixed positions for fixing the protrusion head, wherein the plurality of position elements are arranged for receiving the protrusion head in one of the fixed positions and for blocking movement of the protrusion head in the longitudinal direction of the arm with respect to said one fixed position. Providing a number of predetermined, fixed positions for the protrusion head reduces the adjustability. However, by providing the position elements, the protrusion head can be more securely received in the respective fixed positions. In particular, the protrusion head can no longer be simply displaced in the longitudinal direction of the arm by merely overcoming the friction of a clamping abutment.

Preferably the slot comprises an unrestricted portion in which the protrusion head is freely movable through the slot in the longitudinal direction of the arm and a restricted portion, wherein the plurality of position elements form a plurality of recesses in the restricted portion of the slot, wherein each recess is arranged for receiving the protrusion head in one of the fixed positions from the unrestricted portion of the slot and for locking in the protrusion head in the respective recess with respect to the longitudinal direction of the arm. Thus, by moving the protrusion head between the unrestricted portion and the restricted portion, the position of the protrusion head can be adjusted or fixed, respectively.

It is particularly advantageous when the restricted portion is adjacent to the unrestricted portion

of the slot in the retraction direction. In such an embodiment, attempts to open the window further can result in an even more secure fixation of the position of the protrusion head within the slot.

In a practical embodiment the arm is provided with a release opening that is arranged in communication with the slot at the proximal end of the slot with respect to the coupling, wherein the release opening allows for the release of the protrusion head from the slot. The arm can thus be disengaged from the attachment member only when the window is fully closed and the arm has moved over the attachment member until the protrusion head is at the release opening.

In a more secure embodiment the attachment comprises an attachment body, wherein the attachment body is at a distance from the arm when the arm is in engagement with the protrusion, wherein the protrusion is provided with a restricting body extending from the attachment body into the gap between the attachment body and the arm. The restricting body can prevent the insertion of tools, such as screw drivers, prying bars or the like, into the gap between the attachment body and the arm, to prevent manipulation of the arm with respect to the attachment body.

In a highly versatile embodiment the attachment member is alternatively mountable to the third side of the window frame, wherein the base member is alternatively mountable to the window near the alternatively mounted attachment member. This alternative mounting is particularly useful when the security device is mounted to a turn-tilt window that opens to the outside of a building. In that case the arm extends from the base member at the window towards the attachment member at the window frame and swivels away from the window, rather than towards it. It that way, it can be prevented that the arm interferes with the window frame or the window during opening and closing.

The various aspects and features described and shown in the specification can be applied, individually, wherever possible. These individual aspects, in particular

the aspects and features described in the attached dependent claims, can be made subject of divisional patent applications.

BRIEF DESCRIPTION OF THE DRAWINGS

The invention will be elucidated on the basis of an exemplary embodiment shown in the attached schematic drawings, in which:

figure 1 shows an isometric view of a security device according to the invention mounted to and restricting a tilting movement of a turn-tilt window;

figure 2 shows an isometric view of the security device according to figure 1 restricting a turning movement of the turn-tilt window of figure 1;

figure 3 shows an isometric view of the security device of figures 1 and 2 in more detail;

figure 4 shows a front view of the security device of figure 3;

figures 5A and 5B show side views of the security device of figure 3 in an initial position and an ultimate position, respectively;

figures 6A and 6B show top views of the security device of figure 3 in an initial position and an ultimate position, respectively;

figure 7 shows a cross section of the security device according to the line VII – VII in figure 3;

figure 8 shows an isometric view of an alternative security device according to a second embodiment of the invention;

figure 9 shows an isometric view of a further alternative security device according to a third embodiment of the invention;

figure 10 shows an isometric view of an alternative security device with improved security according to a fourth embodiment of the invention;

figure 11 shows an isometric view of the security device according to figures 1-7 mounted on an alternative turn-tilt window that opens in an opposite direction to the turn-tilt window as shown in figures 1 and 2; and

figures 12A and 12B show a front view of two further alternative security devices according to a fifth embodiment and a sixth embodiment of the invention, respectively.

DETAILED DESCRIPTION OF THE INVENTION

Figures 1 and 2 show a turn-tilt window 1 mounted in a window frame 2 and provided with a security device 3, in particular a window guard, according to a first embodiment of the invention. Figures 3-7 shows the security device 3 in more detail.

The turn-tilt window 1 according to figures 1 and 2 is known per se and is shown only schematically. The security device 3 according to the invention can be mounted to various types of turn-tilt windows. The turn-tilt window 1 in figures 1 and 2 is merely exemplary for the present invention. The turn-tilt window 1 is hingably connected to the window frame 2 so as to be movable or rotatable with respect to the window frame 2 about a turning axis R as well as a tilting axis T. Typically, the turn-tilt window 1 is mounted in a window frame 2 extending in a vertical or substantially vertical plane, wherein the turning axis R extends vertical or substantially vertical and the tilting axis T extends horizontal or substantially horizontal. When rotating the turn-tilt window 1 about the turning axis R, the turn-tilt window 1 can be turned open or closed like a traditional window. When rotating the turn-tilt window 1 about the tilting axis T, the turn-tilt window 1 is tilted open or closed, e.g. for ventilation purposes. In this exemplary embodiment, the turn-tilt window 1 opens towards the inside of a building to which it is fitted.

In this exemplary embodiment, the turn-tilt window 1 and the window frame 2 are rectangular or quadrangular, each having four distinct sides. More in particular, the turn-tilt window 1 comprises two vertically extending stiles 11, 12, a top rail 13 extending between the stiles 11, 12 at the top of the turn-tilt window 1 and a bottom rail 14 extending between the stiles 11, 12 at the bottom of the turn-tilt window 1. Together, the stiles 11, 12 and rails 13, 14 form a window sash 15 for holding the glass 16. The window frame 2 is provided with two vertically extending jambs 21, 22, a head 23 extending between the jambs 21, 22 at the top of the window frame 2 and a sill 24 extending between the jambs 21, 22 at the bottom of the window frame 2. The window frame 2 is dimensioned so that the window sash 15 of the turn-tilt window 1 fits inside the window frame 2. When the turn-tilt window 1 is closed, the stiles 11, 12 of the turn-tilt window 1 extend adjacent to, parallel to and face the respective jambs 21, 22 of the window frame 2. Furthermore, the top rail 13 extends adjacent to, parallel to and faces the head 23 and the bottom rail 14 extends adjacent to, parallel to and faces the sill 24.

For the purpose of explaining the invention, the side of the window frame 2 where the turn-tilt window 1 hinges about the turning axis R (in this case one of the two jambs 21, 22) is generally referred to as the first side A of the window frame 2, whereas the side of the window frame 2 where the turn-tilt window 1 hinges about the tilting axis T (in this case the sill 24) is generally referred to as the second side B of the window frame 2. Finally, the side of the window frame 2 where the turn-tilt window 1 closes when hinging about the turning axis R (in this case the other of the two jambs 21, 22) is generally referred to as the third side C of the window frame 2. The third side C is at the opposite side of the turn-tilt window 1 with respect to the first side A.

Before describing how the security device 3 is mounted to the turn-tilt window 1 and the window frame 2,

first the security device 3 itself is described in more detail below with reference to figures 3-7.

As shown in figure 3, the security device 3 comprises a base member 4, an attachment member 5 and an arm 6 that is coupled to the base member 4 via a coupling 7. The arm 6 is rotatable with respect to the base member 4 within the freedom of movement as defined by the coupling 7, towards and away from the attachment member 5. The arm 6 is arranged for engaging the attachment member 5 when the turn-tilt window 1 is closed, such that the opening of the turn-tilt window 1 can be restricted when the turn-tilt window 1 is opened.

As best seen in figures 3 and 5A, the base member 4 comprises a base body 40, a set of mounting holes 41 extending through the base body 40. The set of mounting holes 41 is used to mount the base member 4 to the window frame 2 The base member 4 is connected to or supports one end of the coupling 7.

As best seen in figures 3 and 4, the attachment member 5 comprises an attachment body 50 and a third set of mounting holes 51 extending through the attachment body 50 for mounting the attachment member 5 to the turn-tilt window 1 in a manner which will be described in more detail hereafter. The attachment member 5 comprises a protrusion 52 that extends from the attachment body 50 towards the arm 6 and which in use is engaged by the arm 6. The protrusion 52 is provided with a protrusion body 53 and a protrusion head 54 at the distal end of the protrusion body 53. In this exemplary embodiment, the protrusion body 53 is a stem that is slidable received in the attachment body 50 so as to be movable with respect to the attachment body 50 in a retraction direction E. The protrusion head 54 is shaped as a circular disc with a diameter that is considerably greater than the diameter of the stem.

As best seen in figures 3 and 5A, the arm 6 comprises an elongate, bar-like arm body 60 extending in a longitudinal direction L. The arm body 60 is connected to

and extends longitudinally from the coupling 7 at the base member 4 towards the attachment member 5 for engaging said attachment member 5. The arm body 60 is provided with a slot 61 for receiving the protrusion 52, and more in particular the protrusion head 54, of the attachment member 5. The arm body 60, in cross section, has an U-shaped profile enclosing the slot 61 and forming two opposite flanges 62, 63 that form a slit 64 along and in communication with the slot 61. The arm 6 is further provided with a release opening 65 that is arranged in communication with the slot 61 at the proximal end of the slot 61 with respect to the coupling 7. The release opening 65 has a dimension that is sufficient to allow for the insertion and release of the protrusion head 54 into and from the slot 61. The protrusion head 54, once inserted and/or received into the slot 61, is arranged to be retained within the slot 61. In particular, the protrusion head 54 hooks into the slot 61, as its diameter is greater than the slit 64 defined by the two opposing flanges 62, 63. In other words, the protrusion head 54 is retained in the slot 61 behind the flanges 62, 63. The protrusion body 53 fits at least partially through the slit 64 and extends into the slot 61, connecting the protrusion head 54 to the attachment body 50.

As shown in cross section in figure 7, the arm 6 is provided with a plurality of position elements 66 extending within the slot 61 and spaced apart along the longitudinal direction L of the arm 6. The plurality of position elements 66 define a plurality of fixed positions P within the slot 61 for fixing the position of the protrusion head 54 within the slot 61 along the longitudinal direction L of the arm 6. The plurality of position elements 66 are suitably shaped to form or define circular or cylindrical recesses 67 in the slot 61 that substantially match the shape of the protrusion head 54. Alternatively, the plurality of position elements 66 may be formed as teeth or cams interacting with the protrusion head 54 within the slot 61. The plurality of position elements 66 extend only at the

side of the slot 61 in the retraction direction E, in particular at or near the opposing flanges 62, 63. Thus, the slot 61 is divided into a restricted portion 68 at the side of the slot 61 in the retraction direction E and an unrestricted portion 69 at the side of the slot 61 opposite to the retraction direction E. The protrusion head 54 is freely movable through the unrestricted portion 69 of the slot 6 in the longitudinal direction L of the arm 6. However, when the protrusion 52 is retracted in the retraction direction E at one of the fixed positions P, the protrusion head 54 is received and retained in the respective recess 67 at said one fixed position P to obstruct movement of the protrusion head 54 through the slot 61 in the longitudinal direction L of the arm 6.

As shown in figures 3-7, the coupling 7 is formed by a ball joint 70. The ball joint 70 comprises a spherical element 71 at one end and a seat or socket 72 at the other end. The spherical element 71 and the socket 72 are movable with respect to each other about the spherical surface of the spherical element 71. The socket 72 is shaped to allow for rotation about at least two rotational degrees of freedom, including rotation about a first rotation axis X and rotation about a second rotation axis Y perpendicular or orthogonal to the first rotation axis X. In this exemplary embodiment, the spherical element 71 is connected to, supported on and/or integral with the base member 5. The socket 72 is formed in or at the proximal end of the arm 6. The first rotation axis X extends parallel to the turning axis R and the second rotation axis Y extends parallel to the tilting axis T.

In figures 8 and 9, alternative security devices 103, 203 are shown according to a second embodiment and a third embodiment, respectively. The alternative security devices 103, 203 differ from the security device 3 as shown in figures 1-7 in that their couplings 107, 207 are or comprise a multi-directional bearing or hinge 170 or a flexible element 270, respectively. These alternatively

couplings 107, 207 are equally suitable for providing the arm 6 with the required two degrees of rotational freedoms about the first rotation axis X and the second rotation axis Y.

The security device 1 as shown in figures 3-7 further comprises a fixing member 8 for fixing the position of the protrusion head 54 within the slot 61 in one of the fixed positions P along the longitudinal direction L of the arm 6. This makes it possible to restrict the movement of the turn-tilt window 1 in a predetermined number of fixed, intermediate positions P along the longitudinal direction L of the arm 6. As shown in figures 3 and 5A, the fixing member 8 is provided with a key operated mechanism 80, in particular a lock cylinder, that is placed inside the attachment body 50 and that can be externally operated by turning a key. The key operated mechanism 80 is operationally coupled within the attachment body 50 to the protrusion 52 to retract the protrusion body 53 and its associated protrusion head 54 in the retraction direction E from the unrestricted portion 69 into the restricted portion 68 of the slot 61. When the protrusion head 54 is aligned in the retraction direction E in the unrestricted portion 69 of the slot 61 with one of the fixed positions P, the protrusion head 52 can be moved by operation of the key operated mechanism 80 in the retraction direction E into said one fixed position P in the restricted portion 68 of the slot 61. More specifically, the protrusion head 54 is arranged to be received in between two adjacent position elements 66 in one of the recesses 67 formed by said two adjacent positioning element 66. When the protrusion 52 is displaced relative to the slot 61 in the longitudinal direction L of the arm 6, the protrusion head 54 abuts the position elements 66 at the inside of the slot 61, by which further displacement of the protrusion 52 with respect to the slot 61 is prevented.

Optionally, the key operated mechanism 80 may be operated to not only bring the protrusion head 54 from the

unrestricted portion 69 into the restricted portion 68 of the slot 61, but to also bring the protrusion head 54 into forceful or clamping abutment with the inside of the slot 61 at the respective recess 67. The clamping abutment between the protrusion head 54 and the inside of the slot 61 may reduce rattling noises when the turn-tilt window 1 randomly moves under the influence of the wind.

In an alternative fourth embodiment of the security device 303, as shown in figure 10, the security device 303 is provided with an alternative arm 306 that does not have a restricted portion and an unrestricted portion, as in figures 3-7. Instead, the protrusion head 54 is arranged to be brought into forceful or clamping abutment with the inside of the slot 61 at the opposing flanges 62, 63 on both sides of the slit 64. The forceful or clamping abutment may be obtained by using the key operated mechanism 80 as shown in figures 3-7.

However, in this alternative fourth embodiment of the invention, the security device 303 is provided with an alternative fixing member 308 that can be manually operated without the use of a key. The alternative fixing member 308 comprises a biasing element 380, e.g. a spring, that is arranged for urging or biasing the protrusion 52 in the retraction direction E. In particular, the biasing element 380 is arranged within the attachment body 50 and engages the protrusion body 53 to bias the protrusion body 53, and the associated protrusion head 54, in the retraction direction E. Thus, the protrusion head 54 inside the slot 61 is automatically biased to move in the retraction direction E into forceful or clamping abutment with the inside of the slot 61, at the flanges 62, 63 surrounding the slit 64. The friction and/or resistance generated by the automatic clamping abutment hinders or prevents displacement of the protrusion head 54 within the slot 61 along the longitudinal direction L of the arm 6.

The alternative fixing member 308 is further provided with an operating element 381, preferably a button,

a slider or a knob, on an external face of the attachment body 380. The operating element 381 is operationally connected to the biasing element 380 and/or the protrusion 52 and is arranged to be operated manually, e.g. by pushing it with a finger. The operating element 381, when operated, is arranged to counteract the bias of the biasing element 380 to temporarily terminate the clamping abutment of the protrusion head 54 on the inside of the slot 61. Thus, when the operating element 381 is operated, the protrusion head 54 can be freely moved within the slot 61 in the longitudinal direction L of the arm 6 for temporarily opening, closing or intermediate positioning of the turn-tilt window 1. As soon as the operating element 381 is released, the biasing element 380 takes over and automatically brings the protrusion head into clamping abutment with inside of the slot 61 again.

Although fixation of protrusion head 54 within the slot 61 in the security device 303 according to this fourth embodiment is less secure compared to the predetermined fixed position of the previous embodiments, the fourth embodiment however has the advantage that it is not limited to said predetermined fixed positions. Instead, the protrusion head 54 is continuously or steplessly adjustable and/or can be clampingly fixed in any position (except for the position at the release opening 65) along the slot 6 along the longitudinal direction L of the arm 6.

Figures 12A and 12B show two further alternative security devices 403, 503 according to a fifth embodiment and a sixth embodiment of the invention, respectively, in which only the respective attachment members 405, 505 have been adapted to be more secure against manipulation. In particular, the respective protrusions 452, 552 have been provided with a restricting body 454, 554 at the stem 453, 553 of the protrusions 452, 552. The restricting bodies 454, 554 extend into the gap between the attachment body 50 and the arm 6. The restricting bodies 454, 554 have a dimension or diameter that is greater than the slit 61 in the arm 6.

The restricting bodies 454, 554 can prevent that tools, such as screw drivers, prying bars or the like, are inserted in between attachment body 50 and the arm body 6, or even into the slit 64. Also, the restricting bodies 454, 554 may prevent forcibly removing the protrusion head 54 from the slot 61.

It will be apparent from the foregoing description that the previously mentioned embodiments can be applied in various configurations and variations onto the turn-tilt window 1 and the window frame 2. The mounting of the security devices 3, 103, 203, 303, 403, 503 to the turn-tilt window 1 and the window frame 2 will be described hereafter with reference to the security device 3 of the first embodiment only.

Figures 1 and 2 show a so-called 'outside mounting' configuration in which the base member 4 of the security device 3 is mounted on the outside of the window frame 2. In this context, 'outside' should not be interpreted as the external side of a building. In fact, the security device 3 is mounted at the inside of the building to which the turn-tilt window 1 is fitted. 'Outside' merely means that the base member 4 is mounted on the outside of the opening that is formed by the window frame 2 to receive the turn-tilt window 1. Hence, the turn-tilt window 1 can freely move through the opening of the window frame 2 without being hindered by the base member 4. This 'outside mounting' configuration is particularly useful when using the security device 3 on an inward moving turn-tilt window 1 in which the security device 3 is mounted on the inside of the building and the turn-tilt window 1 also opens to the inside of the building 1. In the 'outside mounting configuration' the base member 4 is mounted to and stands out from an outwardly facing face of the third side C (one of the jambs 21, 22) that is parallel to the plane spanned by the window frame 2. The set of mounting holes 41 are aligned with the third side C and are used for mounting the base member 4 to the window frame 2 at said third side C.

The attachment member 5 is mounted to the turn-tilt window 1 near or directly opposite to the base member 4, within the range of the arm 6.

Figure 1 shows the operation of the security device 3 during rotation of the turn-tilt window 1 about the tilting axis T. The arm 6 of the security device 1 is rotated about the second rotation axis Y parallel to the tilting axis T to facilitate the opening of the turn-tilt window 1 in a tilting motion. The security device 3 ultimately restricts the turn-tilt window 1 from tilting further about the tilting axis T, leaving the turn-tilt window 1 in a partially opened, yet secure tilted position.

The side view of figure 5A shows the initial position and the ultimate position of the security device 3 during the tilting of the turn-tilt window 1. The arm 6 is initially rotated downwards about the second rotation axis Y when the turn-tilt window 1 is closed. The attachment member 5 is opposite to the release opening 65 in the slot and the protrusion head 54 may be retracted from the slot 61 to detach the arm 6 from the attachment member 5. Starting from the situation in which the attachment member 5 is engaged by the arm 6, once the turn-tilt window 1 starts to tilt about the tilting axis T, the attachment member 5 tilts forwards together with the turn-tilt window 1 and forces the arm 6 to be rotated about the second rotation axis Y at the coupling 7 relatively quickly (see arrow F) into or towards a more horizontal position, as shown in figure 5B. After the initial upward swinging of the arm 6, the arm 6 gradually rotates down again about the second rotation axis Y (see arrow G), following the relative position of the attachment member 5 as a result of the tilting of the turn-tilt window 1 about the tilting axis T, until it finally reaches its ultimate position, as shown in figure 5B. During the tilting of the turn-tilt window 1 about the tilting axis T, the arm 6 is solely rotated about the second rotation axis Y with respect to the base member 4.

Figure 2 shows the shows the operation of the

security device 3 during rotation of the turn-tilt window 1 about the turning axis R. During turning of the turn-tilt window 1, the arm 6 of the security device 1 is rotated about both the first rotation axis X parallel to the turning axis R and the second rotation axis Y parallel to the tilting axis T to facilitate the opening of the turn-tilt window 1 in a turning motion. The security device 3 ultimately restricts the turn-tilt window 1 from turning further about the rotation axis R, leaving the turn-tilt window 1 in a partially opened, yet secure turned position.

The front view of figures 4 and 6A shows the initial position and the ultimate position of the security device 3 during the turning of the turn-tilt window 1. As shown in solid lines, the arm 6 is initially rotated downwards about the second rotation axis Y when the turn-tilt window 1 is closed. Once the turn-tilt window 1 starts to turn about the turning axis R, the attachment member 5 moves forwards together with the turn-tilt window 1 and forces the arm 6 to be rotated about the second rotation axis Y at the coupling 7 relatively quickly (see arrow F) into or towards a more horizontal position, similar to the position shown in figure 5B. After or together with the initial upward swinging of the arm 6, the arm 6 now starts to move sideways in a rotation about the first rotation axis X (see arrow H), to follow the relative sideward movement of the attachment member 5 as a result of the turning of the turn-tilt window 1 about the turning axis R. Ultimately, the arm 6 of the security device 3 reaches its ultimately position, as shown in dashed lines in figure 6B.

As follows from the alternative embodiments, the security device 3 may be adapted to allow for intermediate fixation of the attachment member 5 with respect to the arm 6 in both of the aforementioned operations and/or configurations.

Figure 11 shows an alternative turn-tilt window 101, mounted in an alternative window frame 102 to open outward with respect to the building. Figure 11 further

shows the application of the security device 3 according to figure 1 and 2 to the alternative turn-tilt window 101 and the alternative window frame 102. In contrast to the situation as shown in figures 1 and 2, the base member 4 of the security device 3 is mounted to the alternative turn-tilt window 101 instead of the window frame 102, while the attachment member 5 is mounted to the alternative window frame 101 instead of the turn-tilt window 1. Thus the configuration of the security device 3 is reversed with respect to the situation as shown in figures 1 and 2, to accommodate for the change in the direction in which the alternative turn-tilt window 101 opens. As will be apparent from figure 11, the security device 3 can essentially function in the same manner, rotating about the first rotation axis X and the second rotation axis Y parallel to the turning axis R and the tilting axis T, respectively, to limit the opening of the alternative turn-tilt window 101 with respect to the alternative window frame 102.

It is to be understood that the above description is included to illustrate the operation of the preferred embodiments and is not meant to limit the scope of the invention. From the above discussion, many variations will be apparent to one skilled in the art that would yet be encompassed by the scope of the present invention.

For example, the aforementioned security device 3, 103, 203, 303, 403, 503 according to the invention may be mounted to a normal or conventional turn window, in which case only the rotation about the first rotation axis X is utilized. Alternatively, the aforementioned security device 3, 103, 203, 303, 403, 503 may be mounted to a normal or conventional tilt window, in which case only the rotation about the second rotation axis Y is utilized.

In summary, the invention relates to a security device 3, 103, 203, 303, 403, 503 for a window 1, 101, wherein the window 1, 101 is rotatable with respect to a window frame 2, 102 about a turning axis R and a tilting axis T, wherein the turning axis R extends transverse to the

tilting axis T, wherein the security device 3, 103, 203, 303 comprises a base member 4, an attachment member 5 and an arm 6, 306 for engaging the attachment member 5, wherein security device 3, 103, 203, 303, 403, 503 is provided with a coupling 7, 107, 207 that couples the arm 6, 306 to the base member 4, wherein the coupling 7, 107, 207 is arranged for rotating the arm 6, 306 with respect to the base member 4 about a first rotation axis X that extends parallel to the turning axis R of the window 1, 101 and a second rotation axis Y that extends parallel to the tilting axis T of the window 1, 101.

C O N C L U S I E S

1. Veiligheidsinrichting voor een raam, waarbij het raam gemonteerd is in een raamkozijn en roteerbaar is ten opzichte van het raamkozijn rond een draaihartlijn die zich evenwijdig aan en bij een eerste zijde van het raamkozijn uitstrekt en een kantelhartlijn die zich evenwijdig aan en bij een tweede zijde van het raamkozijn uitstrekt, waarbij de draaihartlijn zich dwars ten opzichte van de kantelhartlijn uitstrekt, waarbij de veiligheidsinrichting een basisdeel omvat dat is ingericht teneinde gemonteerd te worden aan een derde zijde van het raamkozijn aan een tegenovergelegen zijde van het raam ten opzichte van de eerste zijde van het raamkozijn, een bevestigingsdeel dat is ingericht teneinde gemonteerd te worden aan het raam nabij het basisdeel en een arm die is ingericht teneinde geroteerd te worden ten opzichte van het basisdeel in de richting van het bevestigingsdeel voor het aangrijpen het bevestigingsdeel, waarbij de veiligheidsinrichting is voorzien van een koppeling die de arm koppelt met het basisdeel, waarbij de koppeling is ingericht voor het roteren van de arm ten opzichte van het basisdeel rond een eerste rotatiehartlijn die zich evenwijdig aan de draaihartlijn van het raam uitstrekt en een tweede rotatiehartlijn die zich evenwijdig aan de kantelhartlijn van het raam uitstrekt.

2. Veiligheidsinrichting volgens conclusie 1, waarbij de koppeling een balverbinding omvat.

3. Veiligheidsinrichting volgens conclusie 1, waarbij de koppeling een oplegging of scharnier omvat met een meervoudige richting.

4. Veiligheidsinrichting volgens conclusie 1, waarbij de koppeling een flexibel element omvat.

5. Veiligheidsinrichting volgens één der

voorgaande conclusies, waarbij de draaihartlijn zich orthogonaal ten opzichte van de kantelhartlijn uitstrekt.

6. Veiligheidsinrichting volgens conclusie 5, waarbij de draaihartlijn zich verticaal of in hoofdzaak verticaal uitstrekt en waarbij de kantelhartlijn zich horizontaal of in hoofdzaak horizontaal uitstrekt.

7. Veiligheidsinrichting volgens één der voorgaande conclusies, waarbij de arm is voorzien van een sleuf die zich uitstrekt in de langsrichting van de arm voor het aangrijpen van het bevestigingsdeel, waarbij het bevestigingsdeel een uitsteeksel omvat met een uitsteeksellichaam dat is ingericht teneinde zich tot in de sleuf uit te strekken en een uitsteekselkop aan het distale uiteinde van het uitsteeksellichaam dat is ingericht om in de sleuf te haken teneinde het terugtrekken van het uitsteeksellichaam uit de sleuf in een terugtrekrichting tegen te gaan.

8. Veiligheidsinrichting volgens conclusie 7, waarbij de veiligheidsinrichting verder een fixeerdeel omvat voor het fixeren van de positie van de uitsteekselkop binnen de sleuf langs de langsrichting van de arm.

9. Veiligheidsinrichting volgens conclusie 8, waarbij het fixeerdeel een voorbelastelement omvat dat is ingericht voor het voorbelasten van de uitsteekselkop teneinde klemmend aan te liggen tegen de binnenzijde van de sleuf voor het fixeren van de positie van de uitsteekselkop binnen de sleuf langs de langsrichting van de arm.

10. Veiligheidsinrichting volgens conclusie 9, waarbij het voorbelastelement is ingericht voor het voorbelasten van de uisteekselkop in de terugtrekrichting.

11. Veiligheidsinrichting volgens conclusie 9 of 10, waarbij het fixeerdeel is voorzien van een bedieningselement dat operationeel verbonden is met het uitsteeksel en dat is ingericht teneinde de voorbelasting van het voorbelastelement tegen te werken wanneer deze bediend wordt teneinde de klemmende aanligging van de uitsteekselkop aan de binnenzijde van de sleuf op te

heffen.

12. Veiligheidsinrichting volgens conclusie 11, waarbij het bedieningselement, bij voorkeur een drukknop, een schuif of een knop, is ingericht teneinde handmatig bediend te worden.

13. Veiligheidsinrichting volgens conclusie 8, waarbij het fixeerdeel een door een sleutel bediend mechanisme omvat, in het bijzonder een slotcilinder, dat operationeel verbonden is met het uitsteeksel voor het fixeren van de positie van de uitsteekselkop binnen de sleuf langs de langsrichting van de arm.

14. Veiligheidsinrichting volgens conclusie 13, waarbij het door een sleutel bediend mechanisme operationeel verbonden is met de uitsteekselkop teneinde de uitsteekselkop tot in aanligging of klemmende aanligging met de binnenzijde van de sleuf te bewegen.

15. Veiligheidsinrichting volgens één der conclusies 8-14, waarbij de arm is voorzien van een meervoud van positioneerelementen die op afstand van elkaar gelegen zijn langs de langsrichting van de arm, waarbij het meervoud van positioneerelementen een meervoud van gefixeerde posities bepaald voor het fixeren van de uitsteekselkop, waarbij het meervoud van positioneerelementen is ingericht voor het ontvangen van de uitsteekselkop in één van de gefixeerde posities en voor het blokkeren van beweging van de uitsteekselkop in de langsrichting van de arm ten opzichte van die ene gefixeerde positie.

16. Veiligheidsinrichting volgens conclusie 15, waarbij de sleuf een onbeperkt gedeelte omvat waarin de uitsteekselkop vrij beweegbaar is door de sleuf in de langsrichting van de arm en een beperkt gedeelte, waarbij het meervoud van positioneerelementen een meervoud van uitsparingen vormt in het beperkte gedeelte van de sleuf, waarbij elke uitsparing is ingericht voor het ontvangen van de uitsteekselkop in één van de gefixeerde posities vanuit het onbeperkte gedeelte van de sleuf en voor het opsluiten

van de uitsteekselkop in de respectievelijke uitsparing ten opzichte van de langsrichting van de arm.

17. Veiligheidsinrichting volgens conclusie 16, waarbij het beperkte gedeelte naastgelegen is aan het onbeperkte gedeelte van de sleuf in de terugtrekrichting.

18. Veiligheidsinrichting volgens één der conclusies 7-17, waarbij de arm is voorzien van een vrijgeefopening die in communicatie is aangebracht met de sleuf aan het proximale einde van de sleuf ten opzichte van de koppeling, waarbij de vrijgeefopening het vrijgeven van de uitsteekselkop vanuit de sleuf toelaat.

19. Veiligheidsinrichting volgens één der conclusies 7-18, waarbij de bevestiging een bevestigingslichaam omvat, waarbij het bevestigingslichaam op een afstand van de arm gelegen is wanneer de arm in aangrijping is met het uitsteeksel, waarbij het uitsteeksel is voorzien van een beperkend lichaam dat zich uitstrekt vanaf het bevestigingslichaam tot in het gat tussen het bevestigingslichaam en de arm.

20. Veiligheidsinrichting volgens één der voorgaande conclusies, waarbij het bevestigingsdeel alternatief monteerbaar is op de derde zijde van het raamkozijn, waarbij het basisdeel alternatief monteerbaar is op het raam nabij het alternatief gemonteerde bevestigingsdeel.

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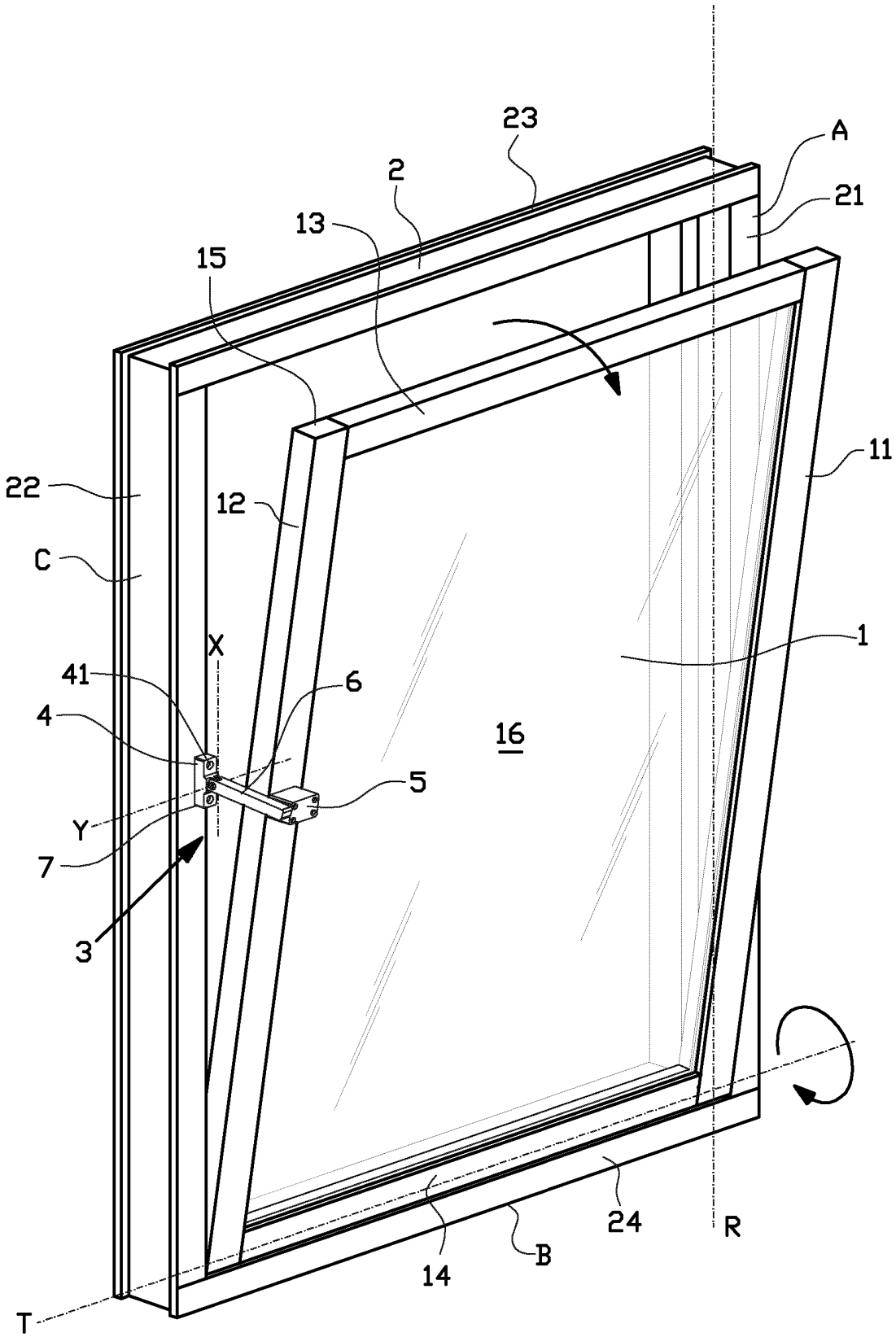

FIG. 1

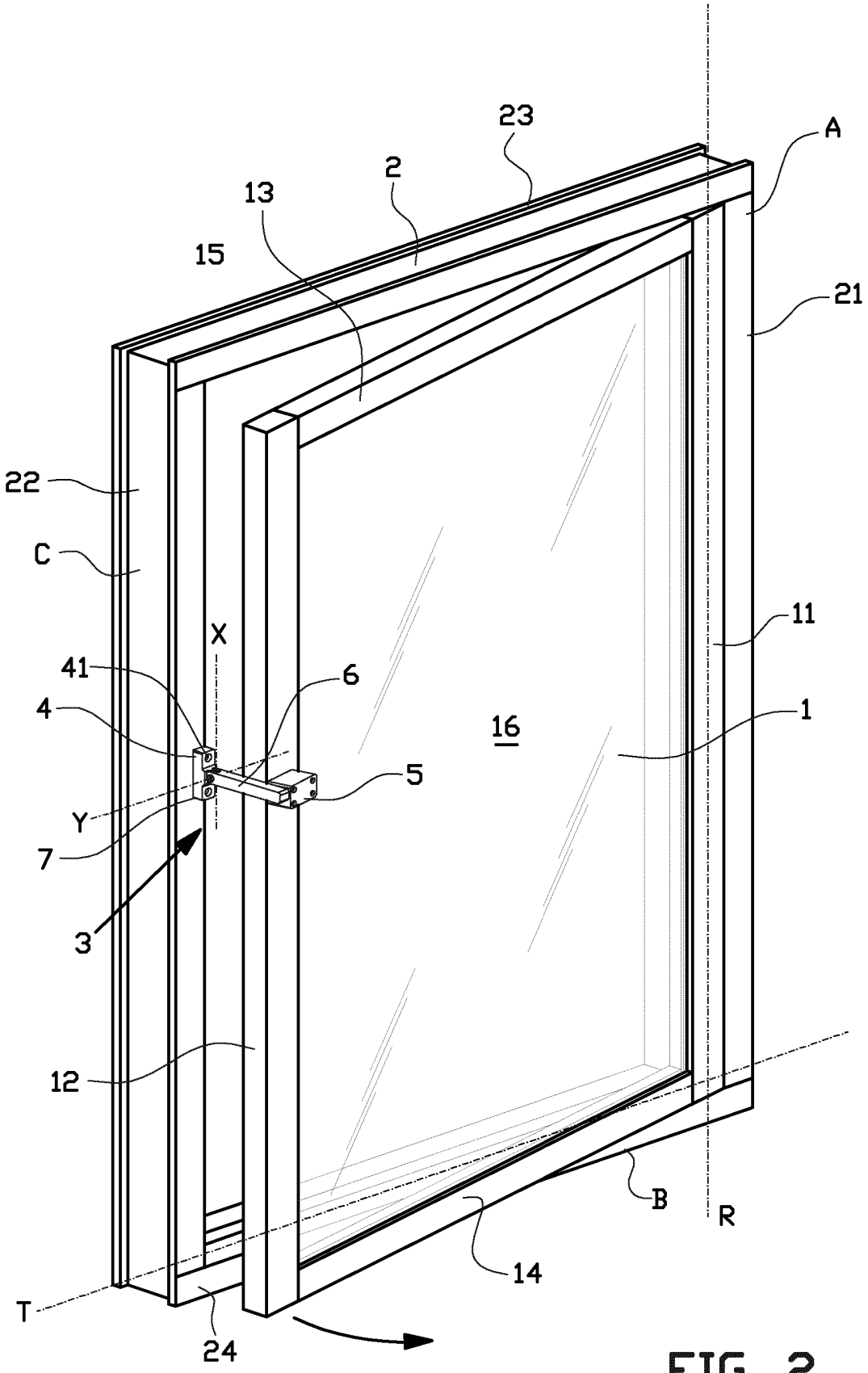

FIG. 2

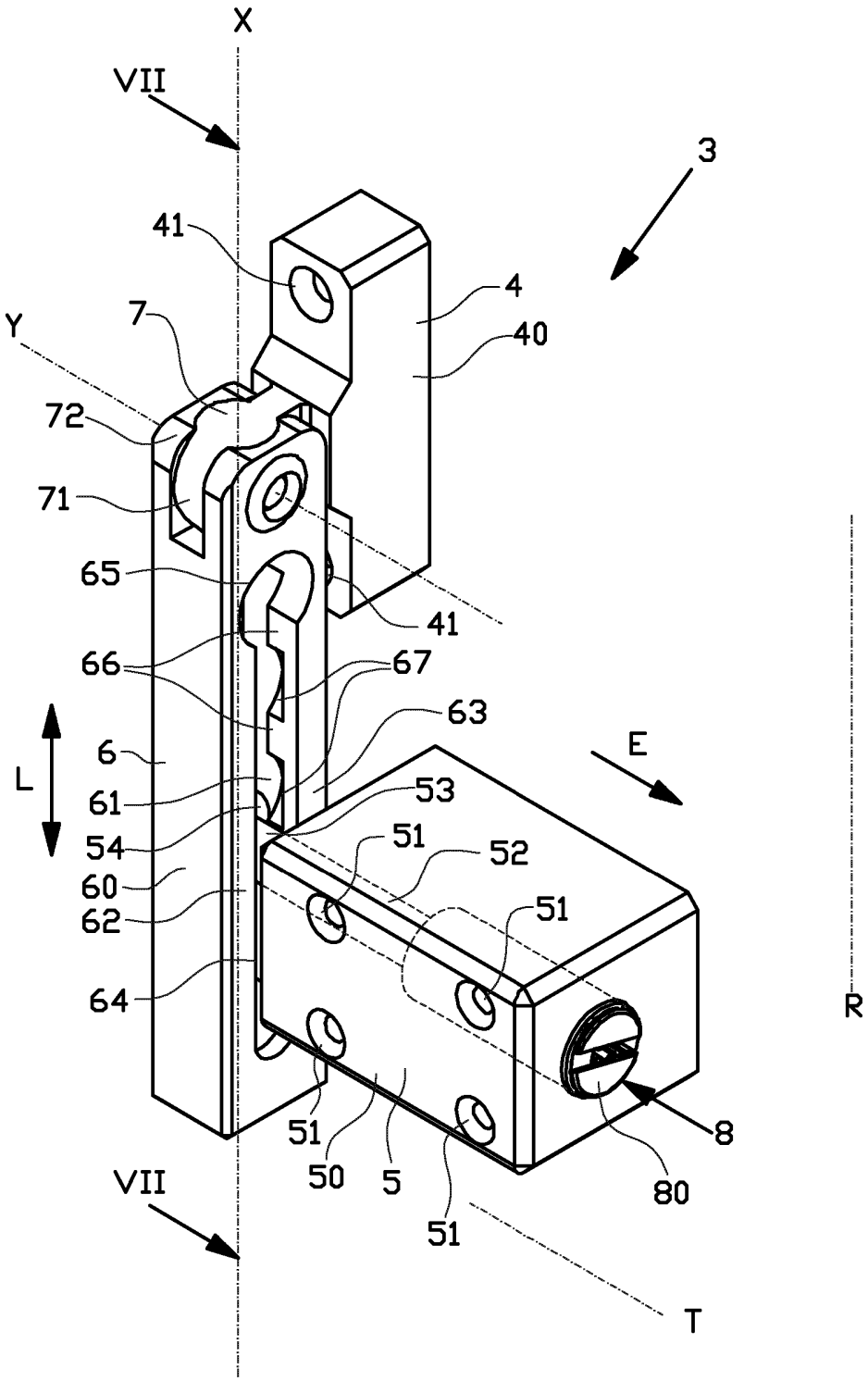
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FIG. 3

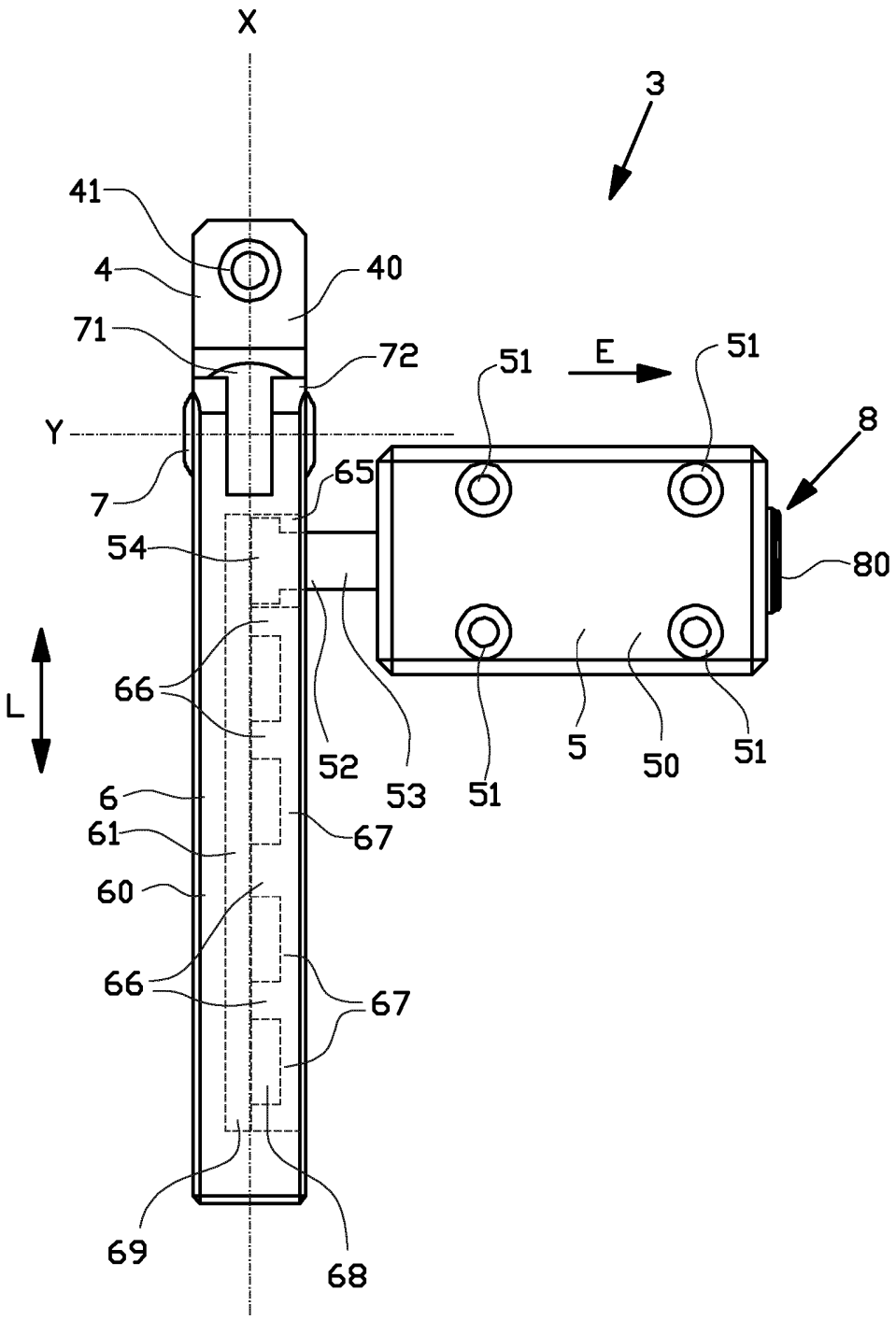
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FIG. 4

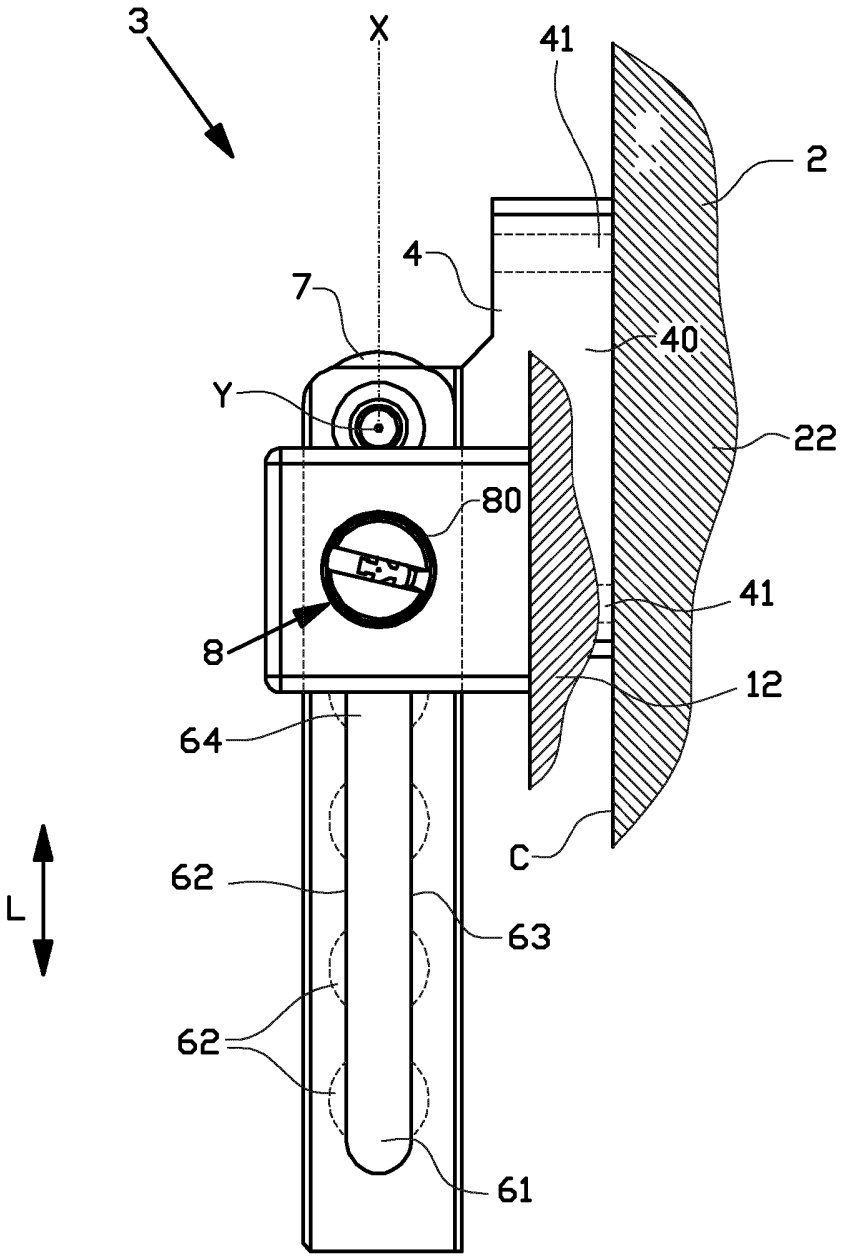

FIG. 5A

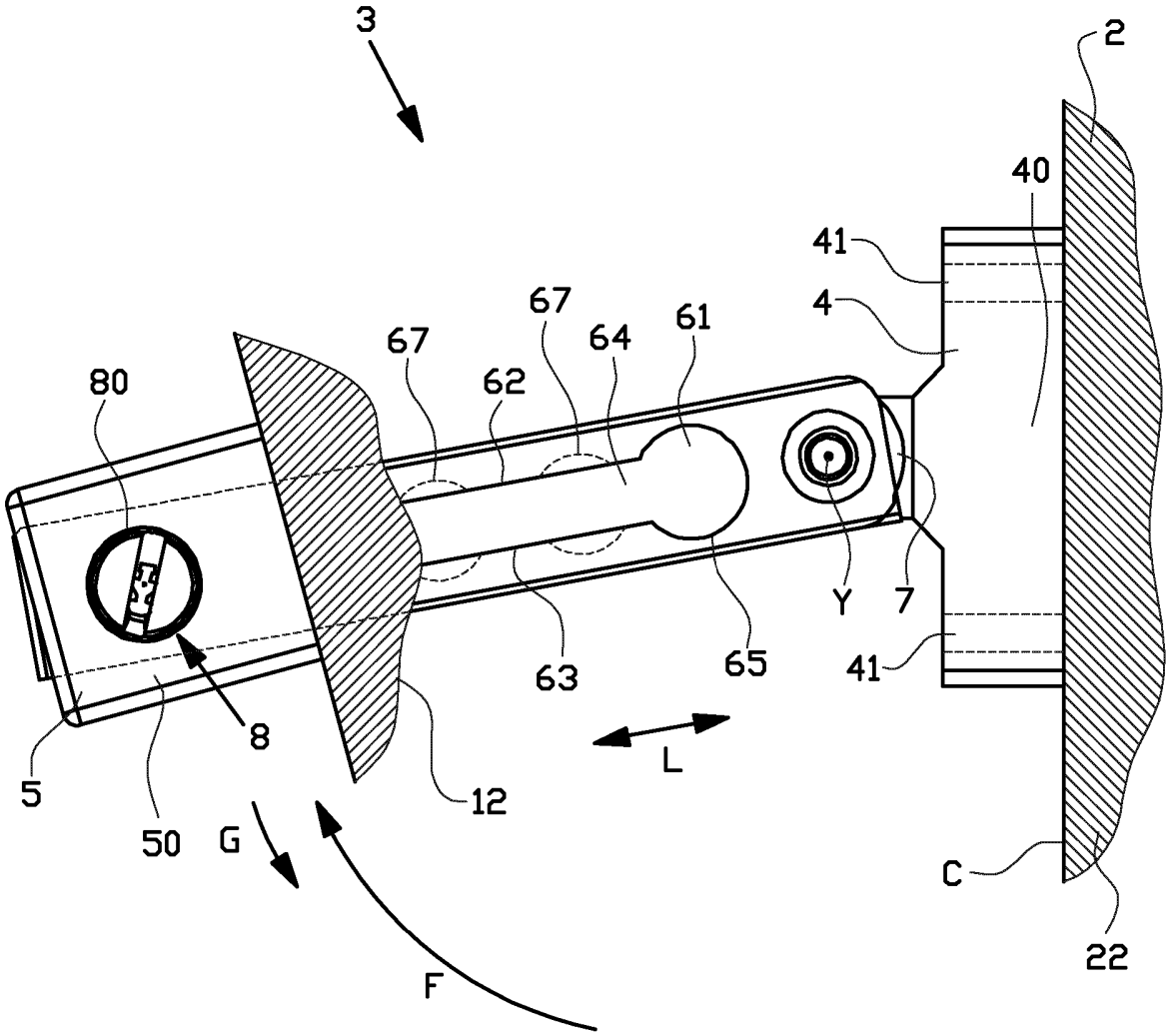

FIG. 5B

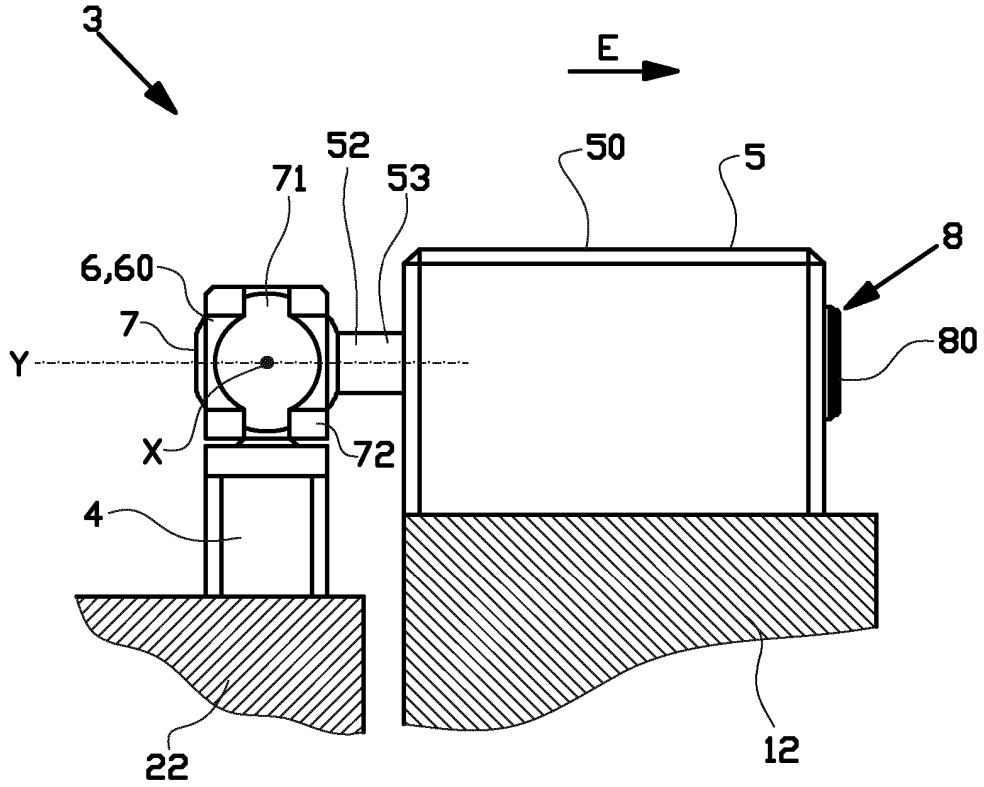

FIG. 6A

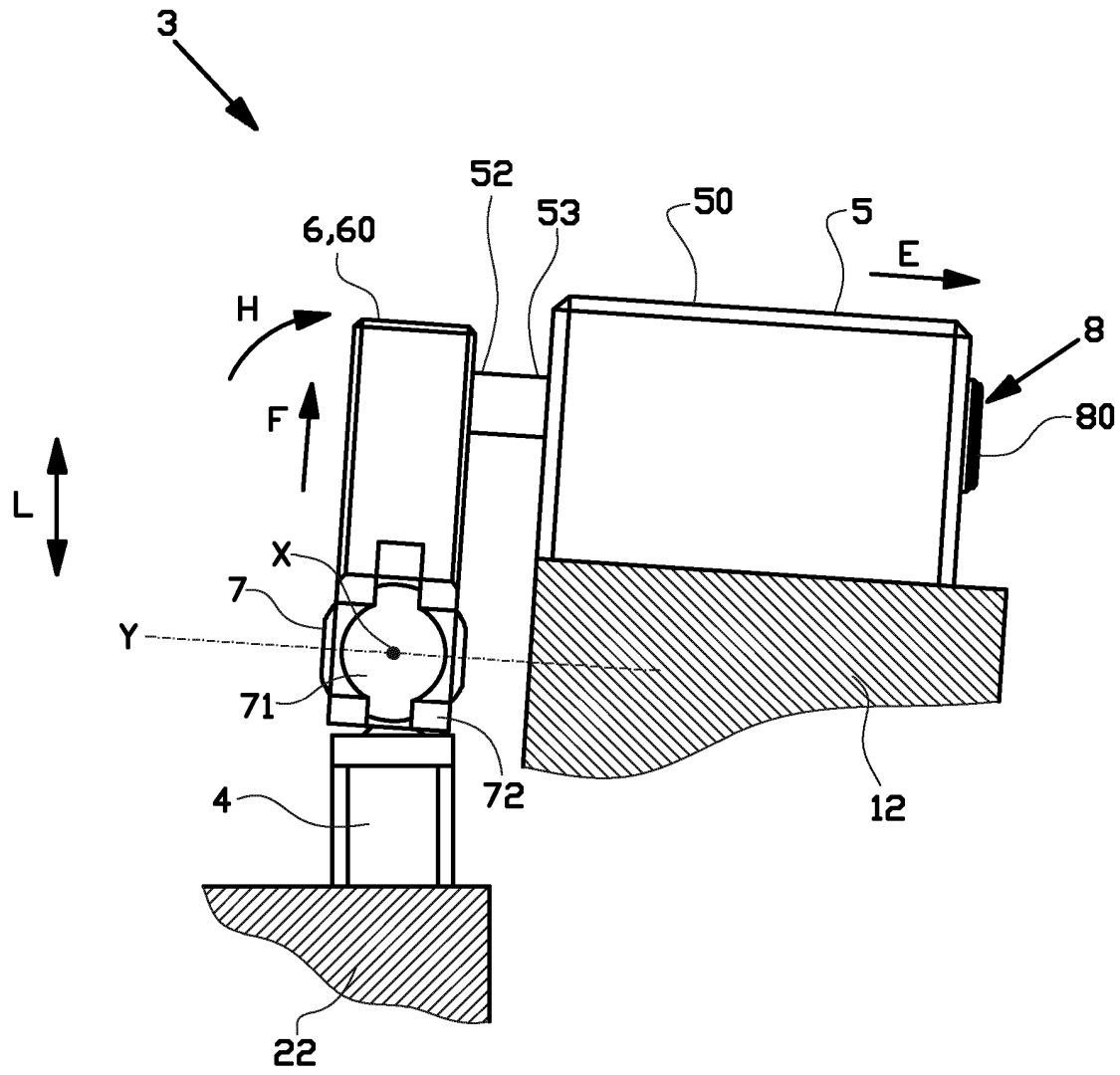

FIG. 6B

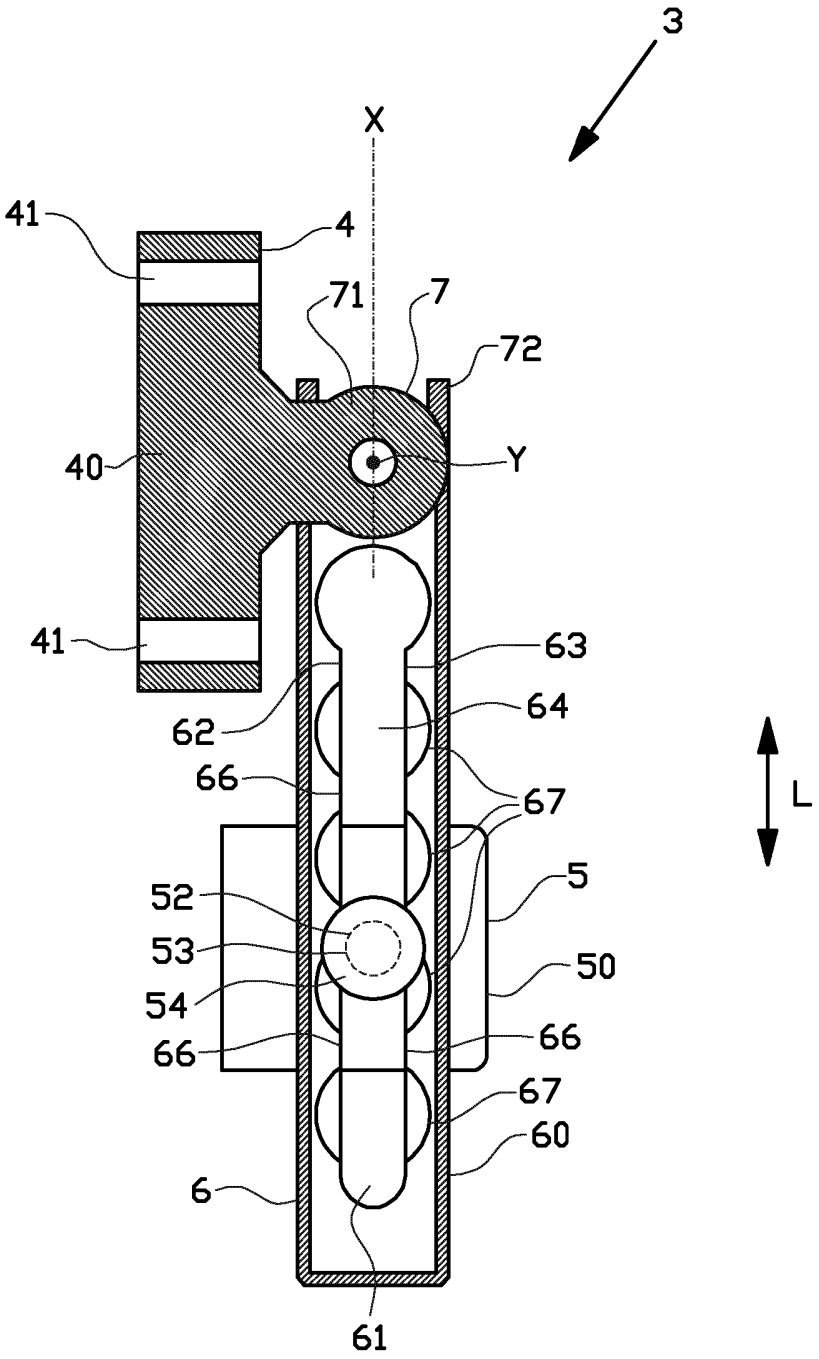

FIG. 7

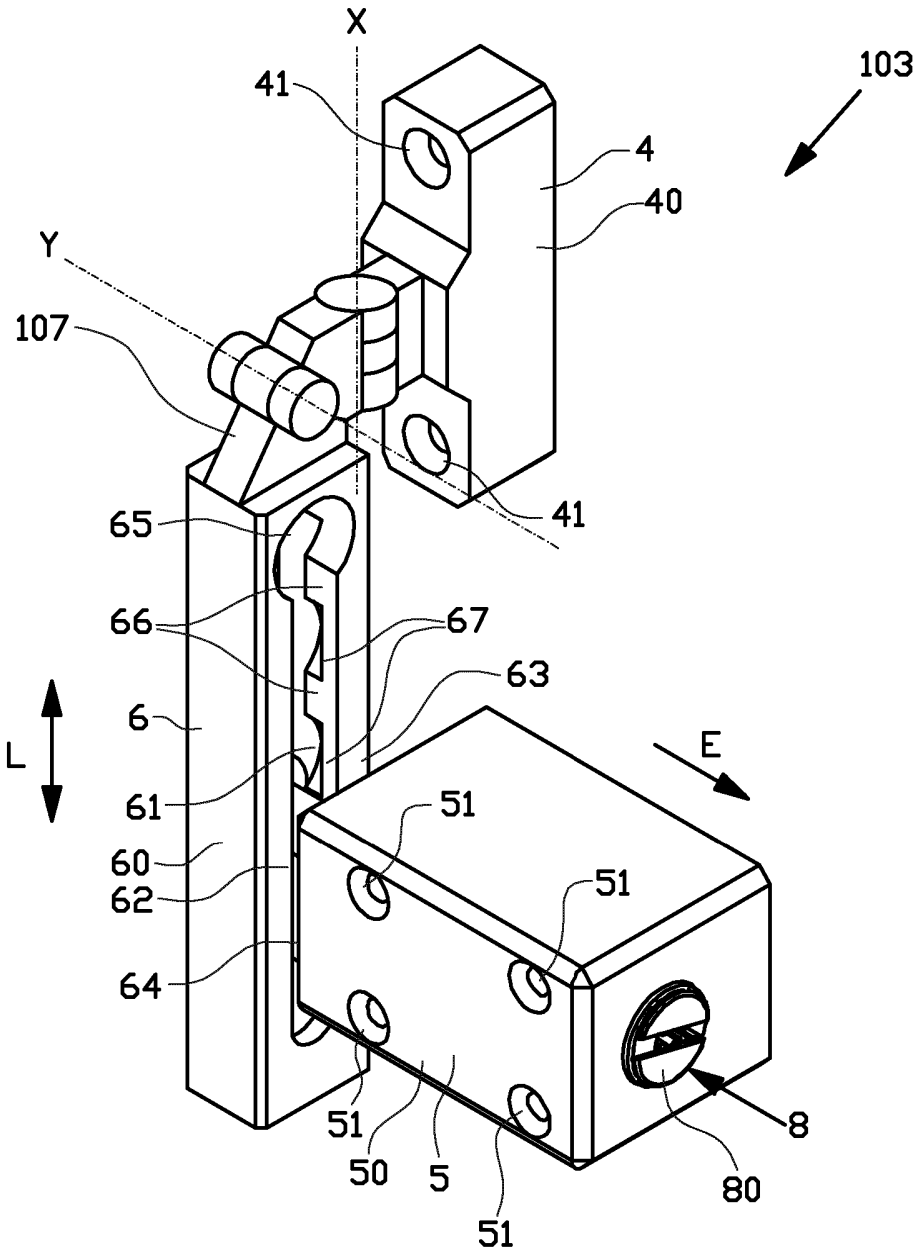

FIG. 8

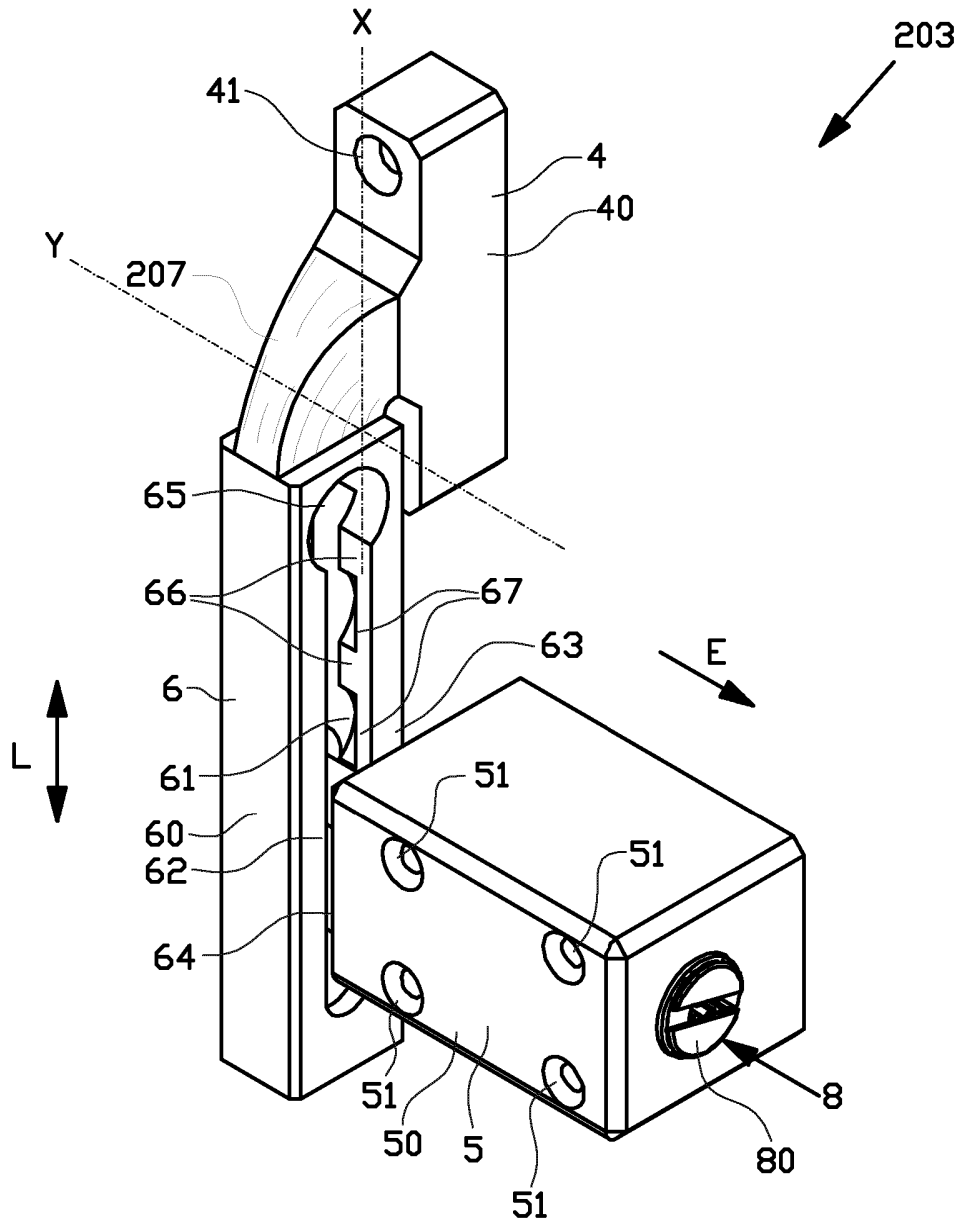

FIG. 9

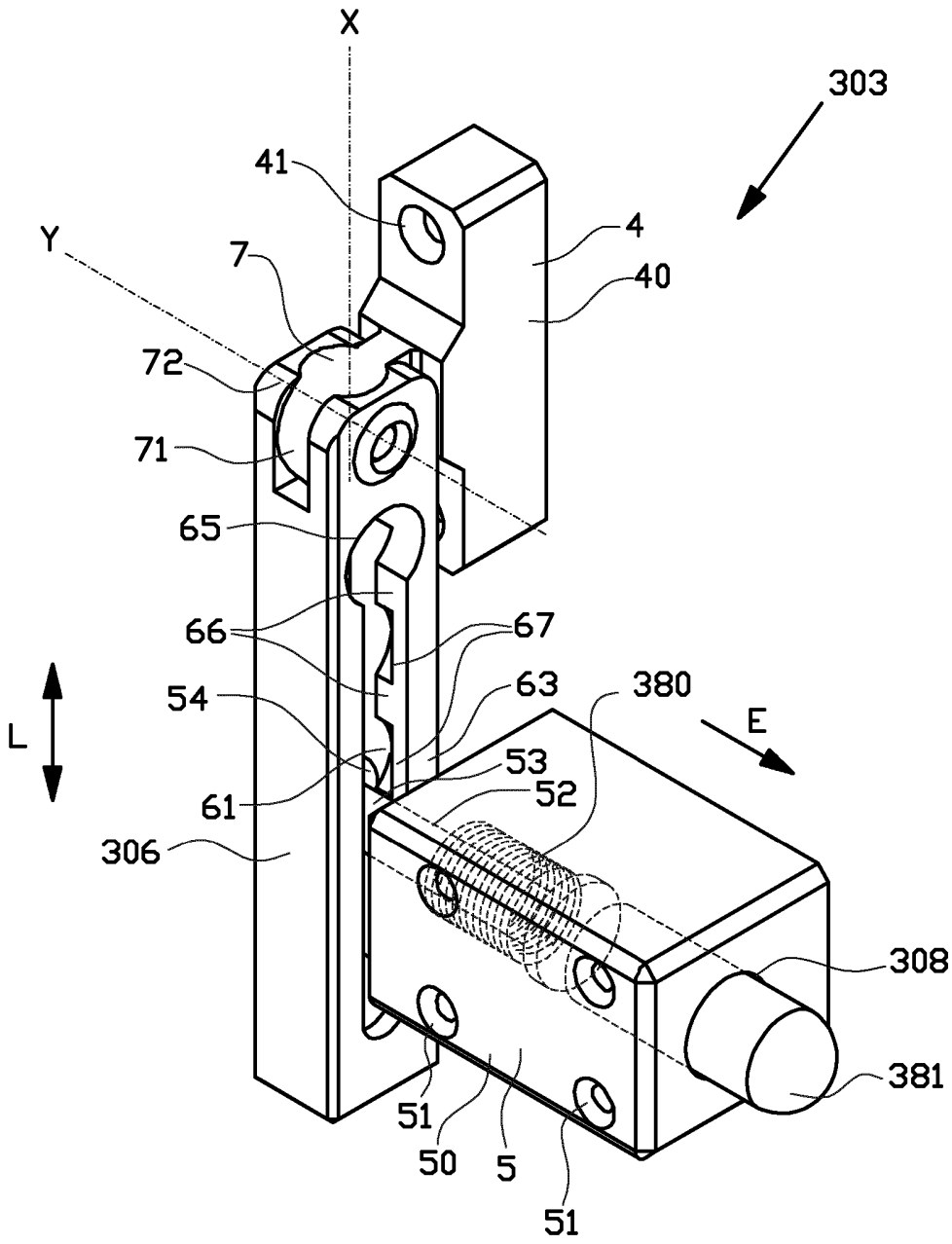
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FIG. 10

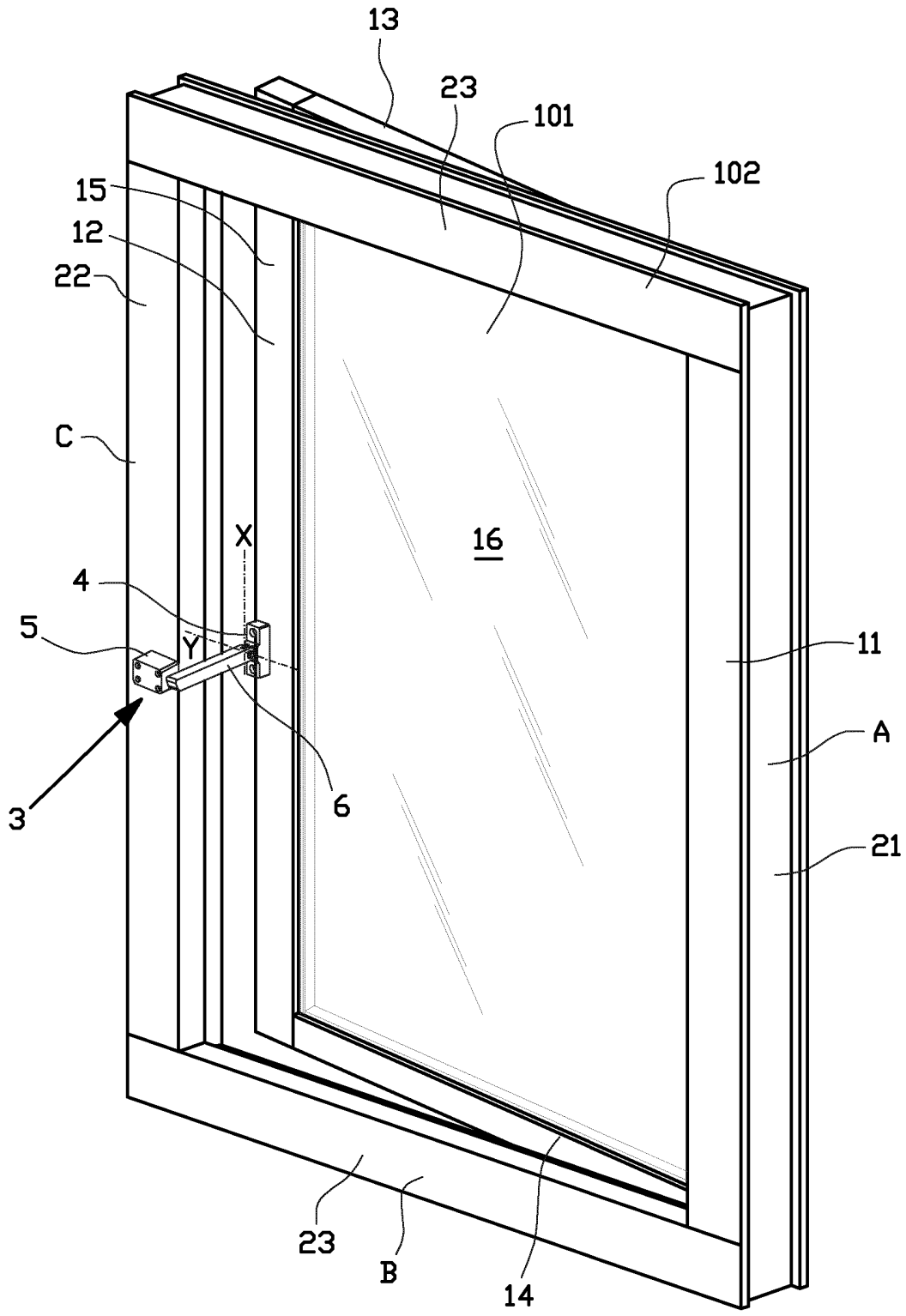

FIG. 11

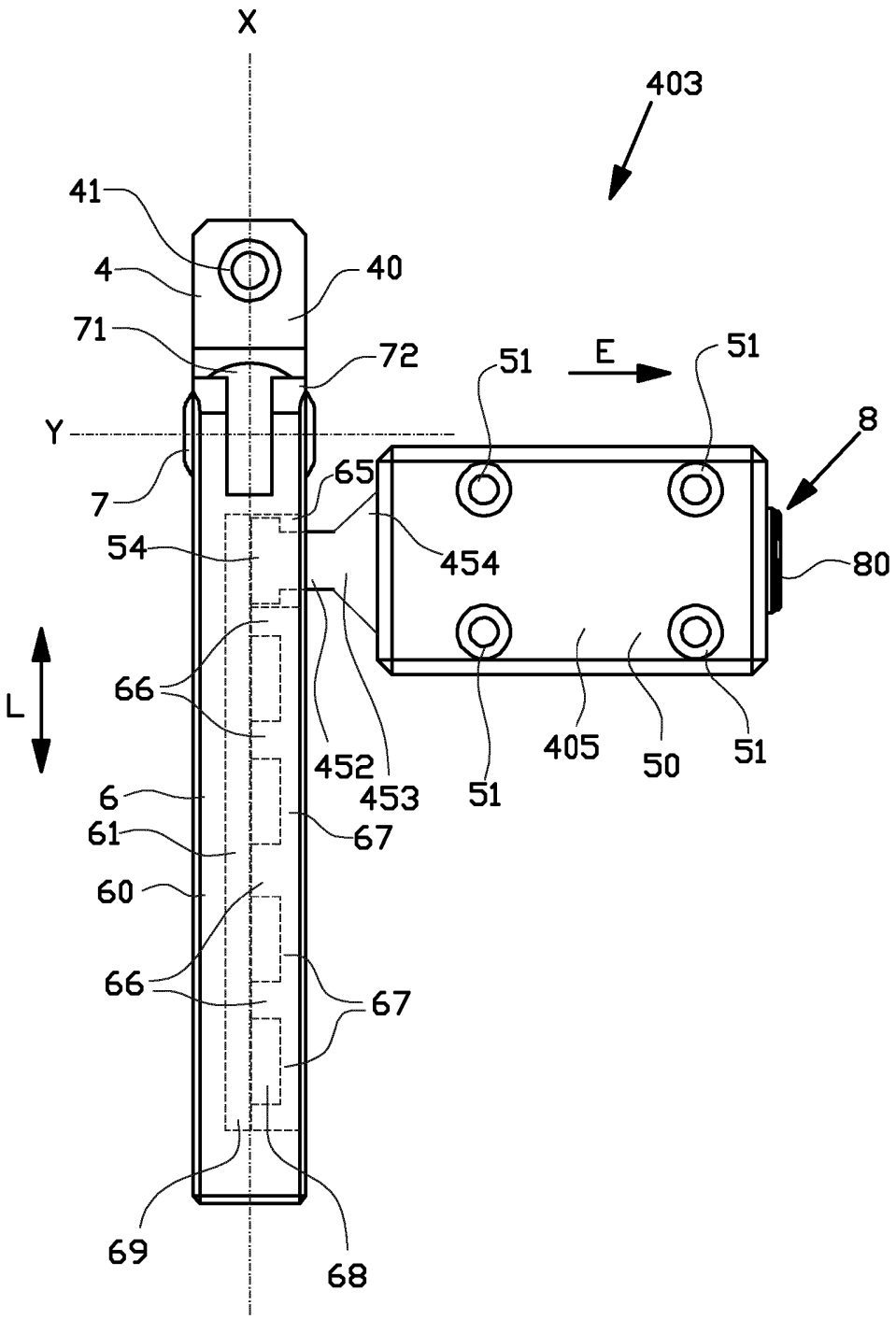
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FIG. 12A

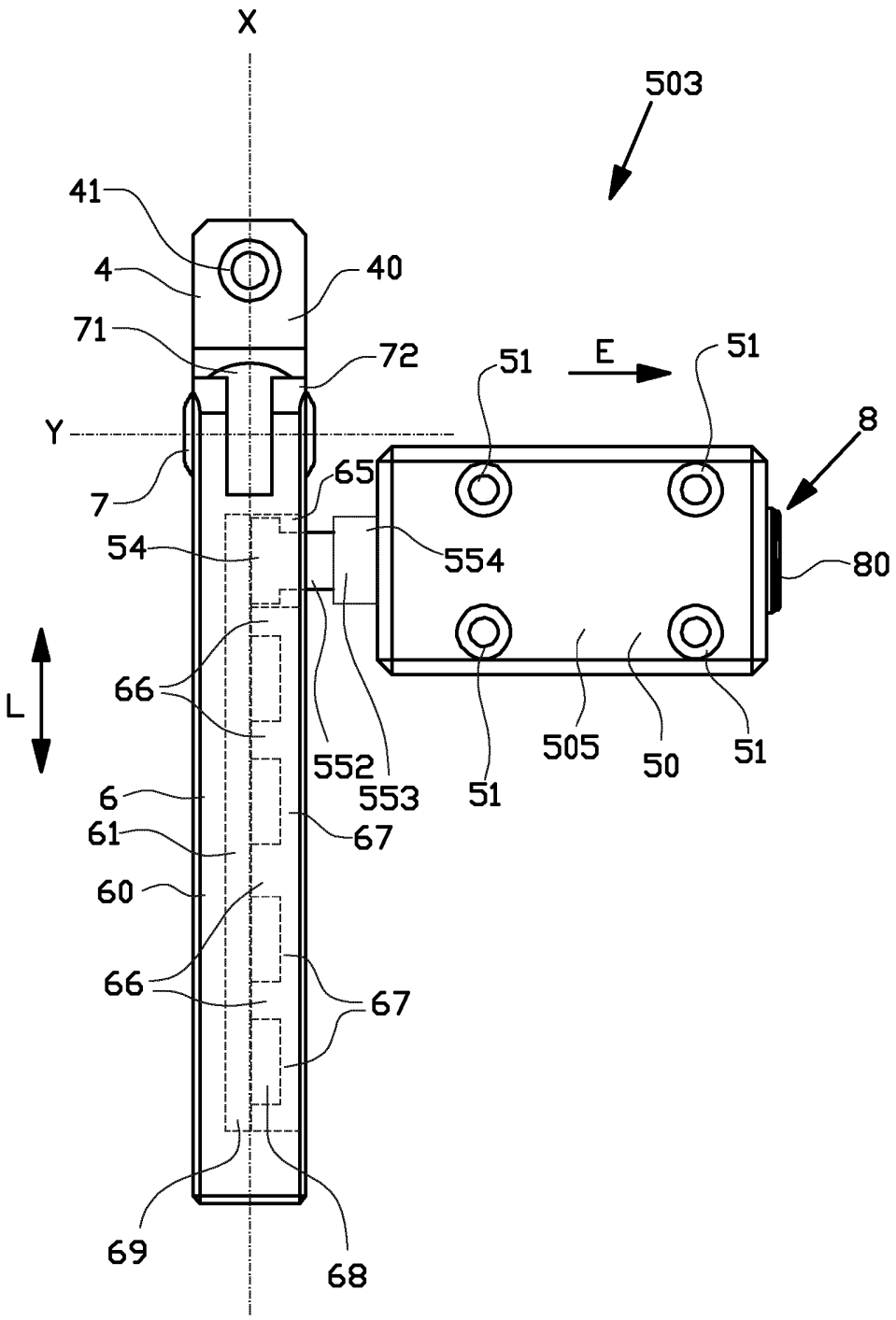
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FIG. 12B

A B S T R A C T

The invention relates to a security device for a window, wherein the window is rotatable with respect to a window frame about a turning axis and a tilting axis, wherein the turning axis extends transverse to the tilting axis, wherein the security device comprises a base member, an attachment member and an arm for engaging the attachment member, wherein security device is provided with a coupling that couples the arm to the base member, wherein the coupling is arranged for rotating the arm with respect to the base member about a first rotation axis that extends parallel to the turning axis of the window and a second rotation axis that extends parallel to the tilting axis of the window.

SAMENWERKINGSVERDRAG (PCT)

RAPPORT BETREFFENDE NIEUWHEIDSONDERZOEK VAN INTERNATIONAAL TYPE

IDENTIFICATIE VAN DE NATIONALE AANVRAGE	KENMERK VAN DE AANVRAGER OF VAN DE GEMACHTIGDE
	NLP197175A
Nederlands aanvraag nr. 2014770	Indieningsdatum 06-05-2015
	Ingeroepen voorrangsdatum
Aanvrager (Naam) ASSA ABLOY Nederland B.V.	
Datum van het verzoek voor een onderzoek van internationaal type 04-07-2015	Door de Instantie voor Internationaal Onderzoek aan het verzoek voor een onderzoek van internationaal type toegekend nr. SN64451
I. CLASSIFICATIE VAN HET ONDERWERP (bij toepassing van verschillende classificaties, alle classificatiesymbolen opgeven)	
Volgens de internationale classificatie (IPC) E05C17/04;E05C17/16	
II. ONDERZOCHTE GEBIEDEN VAN DE TECHNIEK	
Onderzochte minimumdocumentatie	
Classificatiesysteem	Classificatiesymbolen
IPC	E05C
Onderzochte andere documentatie dan de minimum documentatie, voor zover dergelijke documenten in de onderzochte gebieden zijn opgenomen	
III. ☐ GEEN ONDERZOEK MOGELIJK VOOR BEPAALDE CONCLUSIES (opmerkingen op aanvullingsblad)	
IV. ☐ GEBREK AAN EENHEID VAN UITVINDING (opmerkingen op aanvullingsblad)	

Form PCT/ISA 201 A (11/2000)

ONDERZOEKSRAPPORT BETREFFENDE HET RESULTAAT VAN HET ONDERZOEK NAAR DE STAND VAN DE TECHNIEK VAN HET INTERNATIONALE TYPE

Nummer van het verzoek om een onderzoek naar de stand van de techniek
NL 2014770

A. CLASSIFICATIE VAN HET ONDERWERP
INV. E05C17/04 E05C17/16
ADD.

Volgens de Internationale Classificatie van octrooien (IPC) of zowel volgens de nationale classificatie als volgens de IPC

B. ONDERZOCHTE GEBIEDEN VAN DE TECHNIEK

Onderzochte minimum documentatie (classificatie gevolgd door classificatiesymbolen)
E05C

Onderzochte andere documentatie dan de minimum documentatie, voor dergelijke documenten, voor zover dergelijke documenten in de onderzochte gebieden zijn opgenomen

Tijdens het onderzoek geraadpleegde elektronische gegevensbestanden (naam van de gegevensbestanden en, waar uitvoerbaar, gebruikte trefwoorden)
EPO-Internal

C. VAN BELANG GEACHTE DOCUMENTEN

Categorie *	Geciteerde documenten, eventueel met aanduiding van speciaal van belang zijnde passages	Van belang voor conclusie nr.
X	FR 2 934 300 A1 (SOCONA) 29 januari 2010 (2010-01-29) * het gehele document * -----	1,2,5-20
X	EP 1 428 963 A1 (SOCONA) 16 juni 2004 (2004-06-16) * het gehele document * -----	1,2,5-20
X	FR 2 726 852 A1 (CUIVRERIE CENTRALE SA) 15 mei 1996 (1996-05-15) * figuren * -----	1,3,5,6, 20
X	US 1 722 355 A (RITTERSON) 30 juli 1929 (1929-07-30)	1,2, 5-12, 18-20
A	* het gehele document * -----	15

-/--

[X] Verdere documenten worden vermeld in het vervolg van vak C.

[X] Leden van dezelfde octrooifamilie zijn vermeld in een bijlage

* Speciale categorieën van aangehaalde documenten

"A" niet tot de categorie X of Y behorende literatuur die de stand van de techniek beschrijft

"D" in de octrooiaanvraag vermeld

"E" eerdere octrooi(aanvraag), gepubliceerd op of na de indieningsdatum, waarin dezelfde uitvinding wordt beschreven

"L" om andere redenen vermelde literatuur

"O" niet schriftelijke stand van de techniek

"P" tussen de voorrangsdatum en de indieningsdatum gepubliceerde literatuur

"T" na de indienings datum of de voorrangsdatum gepubliceerde literatuur die niet bezwarend is voor de octrooiaanvraag, maar wordt vermeld ter verhelderig van de theorie of het principe dat ten grondslag ligt aan de uitvinding

"X" de conclusie wordt als niet nieuw of niet inventief beschouwd ten opzichte van deze literatuur

"Y" de conclusie wordt als niet inventief beschouwd ten opzichte van de combinatie van deze literatuur met andere geciteerde literatuur van dezelfde categorie, waarbij de combinatie voor de vakman voor de hand liggend wordt geacht

"&" lid van dezelfde octrooifamilie of overeenkomstige octrooipublicatie

Datum waarop het onderzoek naar de stand van de techniek van internationaal type werd voltooid	Verzenddatum van het rapport van het onderzoek naar de stand van de techniek van internationaal type
6 januari 2016	

Naam en adres van de instantie	De bevoegde ambtenaar
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Van Beurden, Jason

1

ONDERZOEKSRAPPORT BETREFFENDE HET RESULTAAT VAN HET ONDERZOEK NAAR DE STAND VAN DE TECHNIEK VAN HET INTERNATIONALE TYPE

Nummer van het verzoek om een onderzoek naar de stand van de techniek
NL 2014770

O (Vervolg) VAN BELANG GEACHTE DOCUMENTEN

Categorie *	Geciteerde documenten, eventueel met aanduiding van speciaal van belang zijnde passages	Van belang voor conclusie nr.
X	US 2 505 320 A (BERNHARD) 25 april 1950 (1950-04-25)	1,3, 5-12, 18-20
A	* het gehele document *	15
X	GB 325 725 A (FREEMAN) 27 februari 1930 (1930-02-27)	1,3,5-7, 18,20
A	* het gehele document *	8
X	US 251 732 A (PHILLIPS) 3 januari 1882 (1882-01-03) * figuren *	1,3,4

1

ONDERZOEKSRAPPORT BETREFFENDE HET RESULTAAT VAN HET ONDERZOEK NAAR DE STAND VAN DE TECHNIEK VAN HET INTERNATIONALE TYPE

Informatie over leden van dezelfde octrooifamilie

Nummer van het verzoek om een onderzoek naar de stand van de techniek: NL 2014770

In het rapport genoemd octrooigeschrift	Datum van publicatie	Overeenkomend(e) geschrift(en)	Datum van publicatie
FR 2934300 A1	29-01-2010	GEEN	
EP 1428963 A1	16-06-2004	EP 1428963 A1	16-06-2004
		FR 2848236 A1	11-06-2004
FR 2726852 A1	15-05-1996	GEEN	
US 1722355 A	30-07-1929	GEEN	
US 2505320 A	25-04-1950	GEEN	
GB 325725 A	27-02-1930	GEEN	
US 251732 A	03-01-1882	GEEN	

WRITTEN OPINION

File No.	Filing date (day/month/year)	Priority date (day/month/year)	Application No.
SN64451	06.05.2015		NL2014770

International Patent Classification (IPC)
INV. E05C17/04 E05C17/16

Applicant
ASSA ABLOY Nederland B.V.

This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the application
- ☐ Box No. VIII Certain observations on the application

Examiner
Van Beurden, Jason

Application number

WRITTEN OPINION

NL2014770

Box No. I Basis of this opinion

1. This opinion has been established on the basis of the latest set of claims filed before the start of the search.

2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the application and necessary to the claimed invention, this opinion has been established on the basis of:

   a. type of material:

   ☐ a sequence listing

   ☐ table(s) related to the sequence listing

   b. format of material:

   ☐ on paper

   ☐ in electronic form

   c. time of filing/furnishing:

   ☐ contained in the application as filed.

   ☐ filed together with the application in electronic form.

   ☐ furnished subsequently for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

Box No. V Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty	Yes:	Claims	4, 16, 17
	No:	Claims	1-3, 5-15, 18-20
Inventive step	Yes:	Claims	
	No:	Claims	1-20
Industrial applicability	Yes:	Claims	1-20
	No:	Claims	

2. Citations and explanations

see separate sheet

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1 Reference is made to the following documents:

D1	FR 2 934 300 A1 (SOCONA) 29 januari 2010 (2010-01-29)
D2	EP 1 428 963 A1 (SOCONA) 16 juni 2004 (2004-06-16)
D3	FR 2 726 852 A1 (CUIVRERIE CENTRALE SA) 15 mei 1996 (1996-05-15)
D4	US 1 722 355 A (RITTERSON) 30 juli 1929 (1929-07-30)
D5	US 2 505 320 A (BERNHARD) 25 april 1950 (1950-04-25)
D6	GB 325 725 A (FREEMAN) 27 februari 1930 (1930-02-27)
D7	US 251 732 A (PHILLIPS) 3 januari 1882 (1882-01-03)

2 The present application does not meet the criteria of patentability, because the subject-matter of claim 1 is not new.

D1 discloses:

a "veiligheidsinrichting voor een raam" whereby the "veiligheidsinrichting een basisdeel (2) omvat dat is ingericht teneinde gemonteerd te worden aan een derde zijde van het raamkozijn aan een tegenovergelegen zijde van het raam ten opzichte van de eerste zijde van het raamkozijn, een bevestigingsdeel (3) dat is ingericht teneinde gemonteerd te worden aan het raam nabij het basisdeel (2) en een arm (4) die is ingericht teneinde geroteerd te worden ten opzichte van het basisdeel (2) in de richting van het bevestigingsdeel voor het aangrijpen het bevestigingsdeel (3)", wherein furthermore "de veiligheidsinrichting is voorzien van een koppeling die de arm koppelt met het basisdeel, waarbij de koppeling is ingericht voor het roteren van de arm ten opzichte van het basisdeel (2) rond een eerste rotatiehartlijn (Z) die zich

evenwijdig aan de draaihartlijn van het raam uitstrekt en een tweede rotatiehartlijn (X) die zich evenwijdig aan de kantelhartlijn van het raam uitstrekt".

It is noted, that the claims are directed to a security device for a turn-tilt window *per se*. The features of the turn-tilt window can therefore be disregarded as they do not imply any features of the security device as such. As the arm of the security device known from D1 is allowed to pivot in all directions, it is indeed suitable to be used with a turn-tilt window.

Consequently, all features of claim 1 are known from document D1.

The features of claim 1 are also known from documents D2-D7 (see figures), the devices known from these documents thus also depriving the subject mater of claim 1 of novelty.

3 Dependent claims 2-20 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of novelty and/or inventive step, as their features are equally known from the prior art (see documents D1-D7), or relate to slight constructional changes in the security device according to claim 1, which come within the scope of the customary practice followed by persons skilled in the art, especially as the advantages thus achieved can be readily foreseen.