(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 1 373 669 B1

(12) **EUROPEAN PATENT SPECIFICATION**

(45) Date of publication and mention of the grant of the patent:
18.01.2006 Bulletin 2006/03

(21) Application number: **02722658.8**

(22) Date of filing: **19.03.2002**

(51) Int Cl.:
E05B 17/00 *(2006.01)* ***E05C 9/02*** *(2006.01)*

(86) International application number:
PCT/IT2002/000167

(87) International publication number:
WO 2002/075085 (26.09.2002 Gazette 2002/39)

(54) **FRAME ASSEMBLY FOR FIXTURES**

RAHMENANORDNUNG FÜR FENSTER

STRUCTURE POUR ARMATURE

(84) Designated Contracting States:
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE TR
Designated Extension States:
AL LT LV MK RO SI

(30) Priority: **20.03.2001 IT RN20010025**

(43) Date of publication of application:
02.01.2004 Bulletin 2004/01

(73) Proprietor: **ERRETI S.r.l.**
I-48010 Bagnara di Romagna (Ravenna) (IT)

(72) Inventor: **AVVANZINI, Ugo**
I-48010 Bagnara di Romagna (IT)

(74) Representative: **Grünecker, Kinkeldey,**
Stockmair & Schwanhäusser
Anwaltssozietät
Maximilianstrasse 58
80538 München (DE)

(56) References cited:
DE-A- 1 817 902
GB-A- 2 164 382
GB-A- 2 279 396

EP 1 373 669 B1

Description

Technical field

[0001] The present invention relates to a set of frames or "frame assembly" for fixtures which can be effectively used to perform selectively opening and closing of fixtures which can be opened in leaf and tilting fashion.

Background art

[0002] As is known, windows, or fixtures, which can be opened in leaf or tilting fashion, comprise a fixed surrounding frame mounted integrally on a wall and a closure member which is provided with a movable frame sealed by a sheet of transparent material - generally standard glass or plate glass - and which is normally called a leaf. The latter is supported by the fixed frame so as to be rotatable freely about a vertical axis which is lateral for the movable frame, and a horizontal axis which extends along a bottom side of the same fixed frame across a frame assembly.

[0003] As is known, there are frame assemblies of the fixed type, of the type comprising two or more fixed hinges, which are installed on leaves which are to be opened solely in leaf fashion. There are also frame assemblies of the adjustable type, which are installed on windows which can be opened as required in leaf or tilting fashion according to the existing needs. Both assemblies mentioned comprise a handle which serves to perform opening and closure of the leaf on the fixed frame and which, only in assemblies which can also be opened in tilting fashion, also allows the type of opening to be selected.

[0004] The frame assemblies for leaf and tilting-type opening comprise devices for controlling the method of opening the leaf, arranged on the handle side and on the upper side of the leaf. The handle performs the changeover in a known fashion via a transmission for the rectilinear motion, comprising an elongated body mounted on the leaf in a position facing the handle so as to be movable solely with a rectilinear movement as a result of the thrust of a tenon of the handle which is housed in a transverse seat of the same elongated body. Therefore the elongated body acts as an interface between the handle and an angular transmission mounted on the leaf at the vertex between the handle side and the upper side, so as to change over the configuration of the hinged mechanism; and, on the opposite side, between the handle and a push-rod which is designed to support the leaf on the handle side in conditions where the leaf is open in tilted fashion. The elongated body is connected to the push-rod and to the angular transmission via thin flat bars, these bars having the sole function of transmitting the linear motion of the tenon. Given what is described above, the elongated body is movable through a specific linear interval corresponding to a rotation of 90° of the handle, and the push-rod and the hinged mechanism are movable therewith. Such a Frame assembly is known from GB 2 164 382 which corresponds to the preamble of claim 1.

[0005] The elongated body, the push-rod and a movable member of the angular transmission, which are only movable in a longitudinal direction along the respective side of the leaf, support in rigid fashion, and normally in an end position, longitudinal keys or projections. The frame assembly also comprises a plurality of L-shaped transverse locking members, called closing wedges, each of which is installed rigidly on the fixed frame in a position facing the position assumed by each key when the handle is in the respective closed leaf position. The L-shaped closing wedges are accessible longitudinally with respect to the keys and are installed on the fixed frame in a position such as to have, in plan view, the transverse striker consisting of the bent end of the wedge partially overlapping the lateral face of the key directed inwards. For this reason, longitudinal insertion of the keys in the closing wedges is only possible after deformation of the L-shaped portion of the closing wedge. This deformation of the L-shaped portion corresponds, obviously, to a transverse force on the keys directed against the fixed frame and, therefore, the creation of a given pressure value to which the leaf is subject and which keeps the same leaf in contact with the fixed frame. The greater the pressure which acts on the leaf, the better the fluid tightness provided by the window as a whole.

[0006] It should also be remembered that, in many applications, the elongated body has, above the handle, a plurality of transverse seats open outwards for a transverse key of a member known as false operation device, which is mounted rigidly on the leaf above the same handle and which locks movement of the handle for safety reasons. The transverse seats of the elongated body are arranged in series and spaced at intervals, so that they can be engaged by the transverse key upon separation of the leaf from the fixed frame of the window in a manner known from patent no. IT 1,266,241 in the name of the Applicant.

[0007] As is known, upon assembly of the fixtures it may be necessary to make adjustments to the fixed frames and/or leaves to allow assembly itself and correct closure. A parameter which is often unsatisfactory and difficult to optimise during assembly with the frame assemblies described above is the closing pressure, as a result of unsatisfactory engagement between keys and closing wedges, in that it is excessive or non-existent. In the first case the result is the impossibility of turning the handle without damaging the frame assembly and in the second case the result is the probable seepage of fluids.

[0008] This disadvantage has been partly solved by replacing, where possible, the keys with cylindrical pins which have eccentric holes and a diameter comparable to the transverse thickness of the keys and which are installed on associated movable members via a threaded connection. In this way members designed to resist transverse forces have been provided, said members having a locating surface whose distance from the axis of the

respective hole can be adjusted. It should be pointed out that the threaded connection which keeps the pin in an optimum angular position is not designed to withstand high torque values and therefore this solution is only admissible where the shearing forces which the keys exchanges with the closing wedges are smaller. In particular this replacement has been performed at the vertices of the leaf, and therefore on the movable member of the angular transmission, and on the push-rod. This replacement is not possible in the region of the elongated body, where the closing forces are decidedly higher, owing to the greater rigidity of the middle portion of the handle side.

[0009] In the light of that described above, it is easy to understand that in very high leaves the closing pressure may not be even over the whole of the window frame. In fact, even after adjustment of the angular position of the pins with eccentric hole, the pressure could be correct at the vertices and too high or too low in the region of the elongated body.

Disclosure of the invention

[0010] The object of the present invention is to provide a frame assembly for fixtures which does not have the disadvantage described above and which is therefore able to guarantee a substantially uniform closing pressure on the handle side.

[0011] A further object of the present invention is to provide a frame assembly for fixtures which does not require substantial alterations to the leaf structure and fixed frame, which operates in an easily understandable manner, is easy to install and is low-cost.

[0012] An additional object of the present invention is to provide a frame assembly which is resistant to careless users and which can be installed according to the needs of the user without requiring structural modifications to the members of the same assembly.

[0013] According to the present invention a frame assembly for fixtures is provided, the characteristics of which are defined in Claim 1 below.

Brief description of the drawings

[0014] The invention will now be described with reference to the accompanying drawings, which illustrate a non-limiting example of embodiment thereof and in which:

- Figure 1 is an exploded, schematic, perspective view of a preferred embodiment of a frame assembly according to the present invention;
- Figure 2 is an exploded view, on a larger scale and with parts removed for clarity, of Figure 1 according to two methods of installation;
- Figure 3 is a side view, on a larger scale, of some methods of assembly of details taken from Figure 2; and
- Figure 4 illustrates, in plan and side elevation views and on a larger scale, a detail taken from Figure 1.

Description of the preferred embodiment(s)

[0015] 1 in Figure 1 denotes, as a whole, a set of frames or "frame assembly" for fixtures, windows or French doors, intended to close off openings. The explicit reference to a window 2 made by assembling extruded parts normally made of metal or the like has been made for the sake of convenience and cannot nor must not be interpreted as an intention to limit the general nature of the following description.

[0016] Still with reference to Figure 1, the window 2 comprises a fixed frame 3 and a movable frame or leaf 4 which can be opened in leaf and tilting fashion. The assembly 1 comprises support members designed to connect the leaf 4 so as to support it rotatably about a vertical side and a horizontal side, in particular a pair of hinges 10 and a push-rod 11 mounted on opposite and vertical sides 12 and 13 in Figure 1. On the side where the push-rod 11 is located, the assembly has an actuating handle 14 which is mounted on the side 12 and is designed to determine the method of opening of the leaf 4. The assembly 1 comprises, mounted on the leaf 4 on a respective upper side 16, a hinged device 17 for controlling the slant of the leaf 4 in relation to said fixed frame 3. This device 17 is known as regards all its features, being normally used for example in frame assemblies known as KAJ and produced by the Applicant; therefore it was decided to represent it schematically in Figure 1 by means of a parallelepiped block and to omit a description thereof, considering that the description of this device would not add anything to the understanding of the present invention.

[0017] The push-rod 11 is mounted on the side 12 so as to slide axially from and towards a position of engagement with a seat 18 formed in a bottom side 19 in Figure 1 of the fixed frame 3, which is opposite the side 16 of the leaf 4. A hinge 10a of the two hinges 10 is mounted on the fixed frame 3 in the region of the side 13 adjacent to the corresponding upper vertex 20 of the leaf 4 and has an arm 21 which is coupled prismatically to the leaf 4 in an end position via the device 17. The remaining lower hinge 10b is mounted on the fixed frame 3 in the region of the side 13 adjacent to the bottom vertex of the leaf 4.

[0018] The assembly 1 also comprises a first elongated body or pull-piece 25 which is coupled to the side 12 prismatically in a known manner and not illustrated so as to be freely slidable axially. The pull-piece 25 has a transverse housing 26 for an actuating member or tenon 27 of said handle 14. As is known, the tenon 27 is connected to the grip of the handle 14 by means of the arrangement, in between, of a sprocket-rack pair, known and not illustrated, so as to be movable with pauses in two opposite directions along the side 12. The pull-piece 25 is made by pressure die-casting or pressing and is delimited axially (see Figure 4) by respective top and bottom free

ends 28 and 29 and arranged symmetrically in relation to a transverse axis 33, The top end 28 has a coupling seat 30 which is transverse to the side 12 and is designed to couple the pull-piece 25 with an upper arm 35 of a device 37 for transmission of the movement of the tenon 27, and the bottom end 29 has a coupling pin 31 which is transverse to the side 12, and is designed to couple the pull-piece 25 with a lower arm 36 of the transmission device 37. In particular, the upper arm 35 is designed to actuate the control device 17, changing it over, so as to differentiate between leaf-type opening or tilting-type opening of the same leaf 4, while the lower arm 36 is designed to actuate the movement of the push-rod 11 from and towards the respective position of engagement with the seat 18. The pin 31 has a respective central axis 32.

[0019] With reference to Figure 2, the upper arm 35 comprises a second elongated body 40 which is coupled prismatically to the side 12 above the handle 14 in a known manner not illustrated in Figure 1, so as to be freely slidable axially. In particular this body 40, which is made by pressure die-casting or pressing, has at the bottom a pin 41 similar to the pin 31, by means of which the body 40 is coupled with the pull-piece 25 via the arrangement, in between, of at least one connecting bar 43. The body 40 has at the top a transverse hole 39 for coupling with an angular transmission 42, to be described in greater detail hereinbelow. According to Figure 2, the bar 43 has, for each of the respective end positions, a transverse hole 44 for the pin 31 of the pull-piece 25 or for the pin 41 of the body 40, similar to the pin 31. In this way the angular transmission 42, the second body 40, the bar 43 and the pull-piece 25 are connected together in series so as to transmit the movement of the tenon 27 to the hinged device 17 and therefore differentiate between the type of opening of the leaf 4.

[0020] Still with reference to Figure 2, the assembly 1 comprises a false operation device 50 mounted rigidly on the side 12, below the angular transmission 42, so as to co-operate with seats 51 formed frontally in the body 40, arranged linearly at intervals, and accessible transversely. Co-operation of the false operation device 50 with the seats 51 can take place via a transverse key 52 which is mounted on the false operation device 50 and is movable transversely by means of the thrusting action of a spring member 54 known and not illustrated, which member is contained inside the false operation device 50 itself, as described in patent No. IT1,266,241 in the name of the Applicant, and for this reason only illustrated schematically in Figure 1 alone. The interval which separates the seats 51 corresponds to a rotation through 90° of the handle 14. The key 52 is designed to engage transversely with any one of the seats 51 and therefore block movement of the tenon 27 and the handle 14, through the locking in position of the upper arm 35 of the transmission 37. The key 50, moreover, has internally an end 53 bent in an L shape which is designed to strike against an internal face of the fixed frame 3 while the leaf 4 is brought against the fixed frame 3 to close the window 2. The key 52, therefore, is designed to be moved backwards against the thrust of the spring member 54 until it frees the seat 51 currently engaged. Vice versa, during opening of the leaf 4, according to any one of the types of opening, the key 52 is pushed into a position of engagement with one of the seats 51, on condition that the body 40 has one of the respective seats 51 in a position facing the key 52. In respect of that described above, this occurs if and only if the handle 14 is in one of the three known and not illustrated working positions, and in particular the closed position, where the grip 55 is vertical downwards; the position for leaf-type opening, where the grip 55 is horizontal; and the position for leaf-type opening, where the grip 55 is vertical upwards. In the light of that described above, it can be said that the false operation device 50 is a safety device, designed to disable selectively rotation of the handle 14 and actuation of the two transmission arms 35 and 36 by means of engagement of the transverse safety key 52 with one of the seats 51.

[0021] The angular transmission 42 comprises a bracket 56 mounted rigidly on the leaf 4 at the respective vertex 57, arranged between the sides 12 and 16, and a flexible bar 58 which engages with the bracket 56 in freely sliding fashion so as to transmit a movement of translation between the two concurrent sides 12 and 16, and therefore between the handle 14 and the device 17, and therefore perform, selectively, actuation thereof. The flexible bar 58 has at the bottom a coupling pin 59 - similar to the pin 31 - designed to engage with the upper hole 44 of the bar 43 or the hole 39 of the body 40.

[0022] As shown in Figure 2, the body 40 and the bar 43 are axially interchangeable with each other so as to allow assembly of the false operation device 50, and therefore of the respective key 52, in any of the positions adjacent to the angular transmission 42 or adjacent to the tenon 27. As already mentioned, the fact that the key 52 can be positioned at a considerable distance from the handle 14 means that any actuation of the key 52 positioned there can only be the result of an action performed in a deliberate manner. In fact, since the false operation device 50 is positioned adjacent to an upper vertex of the window 2, immediately below the transmission 42, the key 52 can only be reached by using a ladder. Therefore the frame assembly 1 which has the separate pull-piece 25 and the body 40 separated physically and located at a considerable distance from one another, solves the technical problems originally proposed effectively, economically and without the need for any special action. Therefore the use of a frame assembly 1 frees the installer from the obligation to place the false operation device 50 in a position facing the handle 14.

[0023] With particular reference to Figure 4, the pull-piece 25 has the housing 26 for the tenon 27 in the middle and, at the respective upper end 28, a longitudinal key 60 which has a given transverse thickness S1 and is designed to engage internally with an L-shaped striker

or closing wedge 61, mounted on the fixed frame 3, so as to determine, during use with the leaf 4 closed, a closing pressure with a first given value between the leaf 4 and the fixed frame 3. The fixed frame 3 has a plurality of closing wedges 61 in the region of a respective internal L-shaped surface 62 which faces the sides 12 and 16, of which only three can be seen in Figure 1. In particular, Figure 1 shows a first closing wedge 61 mounted facing the push-rod 11, a second wedge 61 mounted facing the key 60, and a third wedge 61 mounted facing the flexible bar 58 of the angular transmission 42.

[0024] The pull-piece 25 also has, on an opposite side to the longitudinal key 60, an additional longitudinal key 63 which differs from the key 60 in terms of the value of the transverse thickness S2, which is distinct from S1, so as to determine, in association with the wedge 61, a closing pressure with a second given value, distinct from the first value mentioned above. It should be noted that the thickness S1 is greater than the thickness S2 and that the housing 26 of the tenon 27 is of the through type, in such a way that the pull-piece 25 can be coupled with the tenon 27 itself in two possible orientations. In particular the pull-piece 25 can be selectively oriented with the respective key 60 arranged at the top so as to co-operate with the respective closing wedge 61 and determine a higher closing pressure, or with the key 63 arranged at the top, so as to determine a lower closing pressure. The two orientations are therefore reciprocally angled at 180°, in such a way as to determine, during use, a given closing pressure value, chosen as required from the first and second given pressure values. It should be noted that the pull-piece 25 is symmetrical, both in relation to the transverse axis 33 and in relation to a longitudinal axis 64, and that the difference in pressure upon closure is defined by the half difference S1-S2, which represents the distance between the two positions of the leaf 4 in closed conditions.

[0025] So as to facilitate use of the pull-piece 25, and distinguish, without possibility of confusion, between the two keys 60 and 63, and consequently the required thickness from the two thicknesses S1 and S2, the two end portions 28 and 29 have been denoted respectively by the symbols + and -, respectively indicating the greater and smaller thickness of the keys 60 and 63.

[0026] As regards that described above, it should be noted that the pull-piece 25 has, on opposite sides of the housing 26, mechanical elements 60 and 63 which are designed to perform the same functions, and therefore the pull-piece 25 is functionally symmetrical in relation to a longitudinal axis 64 of the same housing 26.

[0027] For reasons of completeness it should be pointed out that, with reference to Figure 4, the pull-piece 25 has, on opposite sides of a respective longitudinal central axis 70, slide elements 71 arranged in pairs on opposite sides of the housing 26 of the tenon 27. The pull-piece 25 is coupled with the leaf 4 between two longitudinal ribs 72 with an overturned L shape, parallel one to the other and of the known type, formed in the side 12 of the leaf 4. Only one of these ribs 72 is visible in Figure 1 for reasons of clarity. Moreover this rib 72 has been deliberately interrupted in the region of the handle 14, again for reasons of clarity.

[0028] The use of the assembly 1 can be easily understood from what has been described above and does not require further explanations.

[0029] It should be noted that the assembly 1 comprises at least two other closing wedges 61 mounted on the fixed frame 3. The first wedge 61 is installed in a position facing an adjustable and eccentric pawl 80 fixed via a threaded connection to the bar 58 between the hole 59 and the vertical arm of the bracket 56, and the second wedge 61 is installed in a position facing an adjustable and eccentric pawl 81, substantially identical to the pawl 80 and fixed via a threaded connection to the push-rod 11. Actuation of the two transmission arms 35 and 36 causes simultaneous movement, by equal amounts, of the upper end 28 of the pull-piece 25 and the pawls 80 and 81 from and towards a position of engagement with the respective closing wedges 61, so as to maximise tightness between the leaf 4 and fixed frame 3.

[0030] Finally it is clear that modifications and variations can be made to the frame assembly for fixtures described and illustrated here without thereby departing from the scope of protection of the present invention.

Claims

1. Frame assembly (1) for fixtures in which a first elongated body (25) is coupled to a first side (12) of a leaf (4) of a fixture (2) in an axially freely slidable manner by means of the action of a handle (14); said first elongated body (25) having, in the middle, a transverse housing (26) for a tenon (27) of said handle; said first elongated body (25) also having, at a respective upper end (28), a first longitudinal key (60) of given transverse thickness, which can be used in association with a L-shaped striker (61) mounted on the fixed frame (3), so as to determine, during use with the leaf closed, a closing pressure with a first given value between the same leaf (4) and the fixed frame; **characterized in that** said first elongated body (25) has, on the opposite side of said first longitudinal key (60), a second longitudinal key (63) which differs from the said first longitudinal key (60) in terms of the value of the transverse thickness, designed to determine, in association with said L-shaped striker (61), a closing pressure with a second given value, distinct from said first given value; said transverse housing (26) being of the through type, in such a way that said first elongated body (25) can be interfaced with said tenon (27) in two possible orientations, reciprocally angled at 180°, so as to determine, during use, a given closing pressure chosen as required from said first and second given values; said first and second longitudinal keys (60,

63) being functionally similar so that said first elongated body (25) is functionally symmetrical in relation to said transverse housing (26).

2. Frame assembly according to Claim 1, **characterized in that** said leaf (4) is mounted in leaf and tilting-type opening fashion on a fixed frame (3); said handle (14) being mounted on the first side (12), so as to differentiate between the method of opening of said leaf (4); a second elongated body (40) being mounted on said first side (12) in series with said first elongated body, so as to be moved simultaneously and in a substantially identical fashion to the latter; means (10, 11) for supporting said leaf (4) being associated with said fixed frame (3), and means (17) for controlling the slant of said leaf (4) in relation to the fixed frame (3) during tilting-type opening being mounted in a remote position in relation to said handle (14) on a second side (16) of said leaf (4) adjacent to said first side (12); said support means (10, 11) comprising a push-rod (11) mounted in freely sliding fashion on said first side (12) in a remote position in relation to said handle (14) so as to engage with a bottom seat (18) formed in a third side (19) of said fixed frame (3) opposite said second side (26); the first elongated body (25) having a housing (26) for said tenon (27) so as to be movable with pauses for clockwise and anticlockwise rotations of the same handle (14); means (37) for transmission of the linear movement being mounted on said first side (12) in axially rigid connection with said tenon (27) via said first body (25) so as to transmit rigidly the movements of said handle (14) to said push-rod (11) via a respective first transmission arm (36), and so as to transmit rigidly the movements of said handle (14) to an angular transmission (42) via a respective second transmission arm (35); said angular transmission (42) being mounted on said first side (12) at a vertex (57) on the side of said second arm; said angular transmission (42) being connected rigidly and axially to said control means (17) so as to perform selectively respective actuation thereof.

3. Frame assembly according to any one of Claims 1 or 2, **characterised in that** said second body (40) has a plurality of transverse seats (51) for a safety key (52) mounted on said first side (12) in a position facing said second body (40) and movable transversely to said first side (12) so as to engage selectively with said transverse seats (51) as a result of the thrusting action of a spring member (54); means (37) for transmission of the linear motion being mounted on said first side (12) in axially rigid connection with said tenon (27) via said first body (25) so as to transmit rigidly the movements of said same first body (25) to said push-rod (11) via a respective first transmission arm (35) and so as to transmit rigidly the movements of said same first body (25) via a second transmission arm (35) to an angular transmission (42) mounted on said first side (12) at a vertex (57) in the region of said second side (16); said angular transmission (42) being connected rigidly to said means (17) for controlling the slant so as to perform selectively respective actuation thereof; said second transmission arm (35) comprising said second elongated body (40) and at least one connecting bar (43) which is mounted on said first side (12) in axially sliding fashion and can be actuated rigidly by said first elongated body (25); said second elongated body (40) and said connecting bar (43) being interchangeable with one another axially so as to allow assembly of said safety key (52) in any one of the positions adjacent to said angular transmission (42) or adjacent to said tenon (27).

4. Frame assembly according to Claim 3, **characterized in that** said second transmission arm (35) comprises said second elongated body (40) and the connecting bar (43); said second elongated body (40) being coupled in series directly to said angular transmission (42) and said connecting bar (43) being coupled in series to said first elongated body (25), in such a way that said safety key (52) can be installed immediately below said angular transmission (42) and therefore in a position distant from said handle (14).

5. Frame assembly according to Claim 3, **characterized in that** said second transmission arm (35) comprises said second elongated body (40) and the connecting bar (43); said second body (40) being coupled in series directly to said first elongated body (25) and said connecting bar (43) being coupled in series to said angular transmission (42), in such a way that said safety key (52) can be installed immediately above said handle (14).

6. Frame assembly according to any one of claims 4 or 5, **characterized in that** said angular transmission (42) has, in the region of said first side (12), a first coupling pin (59) designed to engage with a hole (39) for transverse coupling to said first side (12) and mounted in an end position on said second elongated body (40) or a second hole (44) for transverse coupling to said first side (12), formed on said connecting bar (43); said second hole (44) being shaped in a substantially identical fashion to said first hole (39), so that said second body (40) and said connecting bar (43) are interchangeable.

7. Frame assembly according to Claim 6, **characterised in that** said second elongated body (40) has, at respective top and bottom end portions (28, 29), a first projection (31) for said second hole (44) or for said first hole (39).

8. Frame assembly according to any one of the previous claims, **characterized in that** said safety key (52) has an L-shaped striker (61) for interfacing with said fixed frame (3), so as to be, during use, movable transversely by means of the thrusting action of said spring member (54) from and towards the position of engagement with at least one of said transverse seats (51) upon separation of said first side (12) from said fixed frame (3).

9. Frame assembly according to claims 7 and 8, **characterized in that** it comprises a false operation device (59) which can be installed on said first side (12) in rigid fashion, in any one of the positions adjacent to said angular transmission (42) or adjacent to said tenon (27); said false operation device (50) containing internally said safety key (52) and said spring member (54).

Patentansprüche

1. Rahmenbaugruppe (1) für Einfassungen, in der ein erster verlängerter Körper (25) mit einer ersten Seite (12) eines Flügels (4) einer Einfassung (2) gekoppelt ist, und zwar auf axial frei verschiebbare Weise durch die Aktion eines Hebels (14); wobei dieser erste verlängerte Körper (25) in der Mitte eine querverlaufende Aufnahme (26) für einen Bolzen (27) dieses Hebels aufweist; wobei dieser erste verlängerte Körper (25) an einem entsprechenden oberen Ende (28) einen ersten längsorientierten Schlüssel (60) mit vorgegebener querlaufender Dicke aufweist, der in Kombination mit einem L-förmigen auf dem festen Rahmen (3) montierten Anschlag (61) verwendet werden kann, um damit beim Gebrauch mit geschlossenen Flügeln, einen Schließdruck mit einem ersten vorgegebenen Wert zwischen dem Flügel (4) und dem festen Rahmen zu bestimmen; **dadurch gekennzeichnet, dass** dieser erste verlängerte Körper (25) auf der, diesem ersten längsorientierten Schlüssel (60) gegenüberliegenden Seite einen zweiten längsorientierten Schlüssel (63) aufweist, der sich von dem ersten längsorientierten Schlüssel (60) durch den Wert der querlaufenden Dicke unterscheidet, die dazu geschaffen ist, in Kombination mit diesem L-förmigen Anschlag (61), einen Schließdruck mit einem zweiten vorgegebenen Wert zu bestimmen, der anders ist als dieser erste vorgegebene Wert; wobei diese querlaufende Aufnahme (26) eine durchgehende Aufnahme ist, so dass dieser erste verlängerte Körper (25) mit diesem Bolzen (27) in zwei möglichen Orientierungen zusammengestellt werden kann, die im 180° Winkel zueinander orientiert sind, um damit beim Gebrauch einen vorgegebenen Schließdruck zu bestimmen, der gewählt ist, wie dies durch den ersten und zweiten vorgegebenen Wert verlangt wird; wobei dieser erste und zweite längsorientierte Schlüssel (60, 63) funktionsmäßig ähnlich sind, so dass dieser erste verlängerte Körper (25) funktionsmäßig symmetrisch gegenüber dieser querorientierten Aufnahme (26) ist.

2. Rahmenbaugruppe gemäß Anspruch 1, **dadurch gekennzeichnet, dass** dieser Flügel (4) auf dem festen Rahmen (3) derart montiert ist, dass er sowohl gekippt als auch geschwenkt werden kann; wobei dieser Hebel (14) an der ersten Seite (12) angebracht ist, um damit zwischen der Öffnungsweise dieses Flügels (4) zu unterscheiden; wobei ein zweiter verlängerter Körper (40) an dieser ersten Seite (12) angebracht ist, und zwar in Serie mit diesem ersten verlängerten Körper, um damit in einer im Wesentlichen gleichen Art und gleichzeitig mit dem letzten bewegt zu werden; wobei Mittel (10, 11), um diesen Flügel (4) zu stützen, mit dem ersten Rahmen (3) verbunden sind, und Mittel (17) in einer entfernten Position in Bezug auf diesen Hebel (14), an einer zweiten Seite (16) dieses Flügels (4) nahe an dieser ersten Seite (12) angebracht sind, um die Öffnung dieses Flügels gegenüber dem festen Rahmen (3) beim Kippen des Flügels zu kontrollieren; wobei diese Stützmittel (10, 11) eine Druckstange (11) aufweisen, die frei verschiebbar an dieser ersten Seite (12) angebracht ist, und zwar an einer Stelle, die in einer entfernten Position in Bezug auf diesen Hebel (14) ist, um damit mit einer darunter liegenden Aufnahme (18) verbunden zu werden, die auf einer dritten Seite (19) dieses festen Rahmens (3) gegenüber dieser zweiten Seite (16) gebildet ist; wobei dieser erste verlängerte Körper (25) eine Aufnahme (26) für diesen Bolzen (27) hat, um damit bei Drehungen dieses Hebels (14) im bzw. gegen den Uhrzeigersinn mit Unterbrechungen beweglich zu sein, wobei Mittel (37) für die Übertragung von geradliniger Bewegung an dieser ersten Seite (12) angebracht sind, in axial fester Verbindung mit diesem Bolzen (27) durch diesen ersten Körper (25), um damit die Bewegungen dieses Hebels (14) über einen entsprechenden ersten Übertragungsarm (36) zu dieser Druckstange (11) fest zu übertragen, und des weiteren die Bewegungen dieses Hebels (14) zu einer Winkelübertragung (42) über einen entsprechenden zweiten Übertragungsarm (35) fest zu übertragen; wobei diese Winkelübertragung (42) an dieser ersten Seite (12) angebracht ist, und zwar an einer Ecke (57) auf der Seite dieses zweiten Arms; wobei diese Winkelübertragung (42) fest und axial mit diesem Mittel (17) verbunden ist, um damit in ausgewählter Weise entsprechende Aktivierungen dieser Mittel durchzuführen.

3. Rahmenbaugruppe gemäß einem der Ansprüche 1 oder 2, **dadurch gekennzeichnet, dass** dieser zweite Körper (40) eine Vielzahl von querliegenden

Aufnahmen (51) für einen Sicherheitsschlüssel (52) hat, der auf einer ersten Seite (12), und zwar an einer Stelle gegenüber diesem zweiten Körper (40) angebracht ist und quer zu dieser ersten Seite (12) bewegbar ist, um damit selektiv mit diesen querliegenden Aufnahmen (51), der Antriebsaktion eines Federelements (54) zur Folge ineinander zu greifen; wobei Mittel (37) für die Übertragung der geradlinigen Bewegung auf diese erste Seite (12) angebracht sind, und zwar in axialer fester Verbindung mit diesem Bolzen (27) durch diesen ersten Körper (25), um damit auf fester Weise die Bewegungen dieses ersten Körpers (25) durch einen entsprechenden ersten Übertragungsarm (35) zu dieser Druckstange (11) zu übertragen, und somit auf fester Weise die Bewegungen dieses ersten Körpers (25) durch einen zweiten Übertragungsarm (35) zu einer Winkelübertragung (42) zu übertragen, die auf dieser ersten Seite (12) angebracht ist, und zwar auf einer Ecke (57) im Bereich dieser zweiten Seite (16); wobei diese Winkelübertragungseinheit (42) mit diesem Mittel (17) für die Kontrolle der Neigung fest verbunden ist, um damit entsprechende auswählbare Aktivierungen dieser Mittel zu gewährleisten; wobei dieser zweite Übertragungsarm (35) diesen zweiten verlängerten Körper (40) aufweist, sowie mindestens eine Verbindungsstange (43), die auf dieser ersten Seite (12) in axialer Richtung verschiebbar montiert ist und durch diesen ersten verlängerten Körper (25) fest aktiviert werden kann; wobei dieser zweite verlängerte Körper (40) und diese Verbindungsstange (43) in axialer Richtung untereinander austauschbar sind, um damit die Montage dieses Sicherheitsschlüssels (52) in jeder der Positionen nahe an dieser Winkelübertragungseinheit (42) bzw. nahe an diesem Bolzen (27) zu ermöglichen.

4. Rahmenbaugruppe gemäß Anspruch 3, **dadurch gekennzeichnet, dass** dieser zweite Übertragungsarm (35) sowohl diesen zweiten verlängerten Körper (40) als auch die Verbindungsstange (43) aufweist; wobei dieser zweite verlängerte Körper (40) mit dieser Winkelübertragungseinheit (42) in Serie direkt verbunden ist und diese Verbindungsstange (43) mit diesem ersten verlängerten Körper (25) in Serie verbunden ist, so dass dieser Sicherheitsschlüssel (52) unmittelbar unter dieser Winkelübertragungseinheit (42) installiert werden kann, und deswegen in einer Position, die entfernt von diesem Hebel (14) ist.

5. Rahmenbaugruppe gemäß Anspruch 3, **dadurch gekennzeichnet, dass** dieser zweite Übertragungsarm (35) sowohl diesen zweiten verlängerten Körper (40) und die Verbindungsstange (43) aufweist; wobei dieser zweite Körper (40) mit diesem ersten verlängerten Körper (25) in Serie direkt verbunden ist und diese Verbindungsstange (43) mit dieser Winkelübertragungseinheit (42) in Serie verbunden ist, so dass dieser Sicherheitsschlüssel (52) unmittelbar über diesem Hebel (14) installiert werden kann.

6. Rahmenbaugruppe gemäß einem der Ansprüche 4 oder 5, **dadurch gekennzeichnet, dass** diese Winkelübertragungseinheit (42) im Bereich von der ersten Seite (12), einen ersten Verbindungsstift (59) hat, der dazu bestimmt ist, entweder in einer Öffnung (39), die im Endbereich von diesem zweiten verlängerten Körper (40), oder in einer zweiten Öffnung (44), die in dieser Verbindungsstange (43) ausgebildet ist, zu greifen, um die Querverbindung mit dieser ersten Seite (12) zu gewährleisten; wobei diese zweite Öffnung (44) im Wesentlichen die gleiche Form wie diese erste Öffnung (39) hat, so dass dieser erste Körper (40) und diese Verbindungsstange (43) austauschbar sind.

7. Rahmenbaugruppe gemäß Anspruch 6, **dadurch gekennzeichnet, dass** dieser zweite verlängerte Körper (40) in entsprechenden oberen und unteren Bereichen (28, 29) einen entsprechenden Vorsprung (31) hat, entweder für diese zweite Öffnung (44) oder für diese erste Öffnung (39).

8. Rahmenbaugruppe gemäß einem der vorherigen Ansprüche, **dadurch gekennzeichnet, dass** dieser Sicherheitsschlüssel (52) einen L-förmigan Anschlag (61) für die Zusammenarbeit mit diesem festen Rahmen (3) hat, so dass beim Gebrauch dieses Sicherheitsschlüssels er in Querrichtung bewegbar ist, und zwar durch die Antriebsaktion von diesem Federelement (54), von der und gegen die Einrastposition mit zumindest einer der querliegenden Aufnahmen (51), der die Trennung dieser ersten Seite (12) von diesem festen Rahmen (3) zu Folge hat.

9. Rahmenbaugruppe gemäß einem der Ansprüche 7 oder 8, **dadurch gekennzeichnet, dass** diese eine Fehlbedienungsvorrichtung (59) aufweist, die auf dieser ersten Seite (12) auf fester Weise angebracht werden kann, und zwar in jeder der Positionen nahe an dieser Winkelübertragungseinheit (42) oder an diesem Bolzen (28), wobei diese Fehlbedienungsvorrichtung (50) den Sicherheitsschlüsset (52) und dieses Federelement (54) enthält.

Revendications

1. Ensemble de châssis (1) pour armatures dans lequel un premier corps allongé (25) est couplé à un premier côté (12) d'un battant (4) d'une armature (2) d'une façon apte à coulisser librement axialement au moyen de l'action d'une poignée (14), ledit premier corps allongé (25) ayant dans le milieu un logement

transversal (26) pour un tenon (27) de ladite poignée, ledit premier corps allongé (25) ayant également à une extrémité supérieure respective (28) une première clavette longitudinale (60) d'une épaisseur transversale donnée qui peut être utilisée en association avec un frappeur en forme de L (61) monté sur le châssis fixe (3) de façon à déterminer pendant l'utilisation avec le battant fermé une pression de fermeture avec une première valeur donnée entre le même battant (4) et le châssis fixe, **caractérisé en ce que** ledit premier corps allongé (25) présente sur le côté opposé de ladite première clavette longitudinale (60) une deuxième clavette longitudinale (63) qui diffère de ladite première clavette longitudinale (60) en termes de la valeur de l'épaisseur transversale, conçue pour déterminer, en association avec ledit frappeur en forme de L (61), une pression de fermeture avec une deuxième valeur donnée distincte de ladite première valeur donnée, ledit logement transversal (26) étant du type traversant, de telle sorte que ledit premier corps allongé (25) peut être relié avec ledit tenon (27) dans deux orientations possibles, selon un angle réciproque à 180°, afin de déterminer pendant l'utilisation une pression de fermeture donnée choisie comme requis à partir desdites première et deuxième valeurs données, lesdites première et deuxième clavettes longitudinales (60, 63) étant fonctionnellement analogues de sorte que ledit premier corps allongé (25) est fonctionnellement symétrique par rapport audit logement transversal (26).

2. Ensemble de châssis selon la revendication 1, **caractérisé en ce que** ledit battant (4) est monté d'une façon à ouverture du type à inclinaison sur un châssis fixe (3), ladite poignée (14) est montée sur le premier côté (12) afin de différencier le procédé d'ouverture dudit battant (4), un deuxième corps allongé (40) est monté sur ledit premier côté (12) en série avec ledit premier corps allongé afin d'être déplacé simultanément et d'une façon sensiblement identique à ce dernier, des moyens (10, 11) pour supporter ledit battant (4) sont associés audit châssis fixe (3) et des moyens (17) pour commander l'inclinaison dudit battant (4) par rapport au châssis fixe (3) pendant l'ouverture du type à inclinaison sont montés dans une position éloignée par rapport à ladite poignée (14) sur un deuxième côté (16) dudit battant (4) près dudit premier côté (12), ledit moyen de support (10, 11) comprend une tige de poussée (11) montée d'une façon à coulissement libre sur ledit premier côté (12) dans une position éloignée par rapport à ladite poignée (14) de façon à venir en prise avec un siège de fond (18) formé dans un troisième côté (19) dudit châssis fixe (3) opposé audit deuxième côté (16), le premier corps allongé (25) a un logement (26) pour ledit tenon (27) afin d'être mobile avec des pauses pour des rotations dans le sens des aiguilles d'une montre et dans le sens inverse à celui des aiguilles d'une montre de la même poignée (14), des moyens (37) pour la transmission du mouvement linéaire sont montés sur ledit premier côté (12) dans une connexion rigide axialement avec ledit tenon (27) par l'intermédiaire dudit premier corps (25) afin de transmettre rigidement les mouvements de ladite poignée (14) à ladite tige de poussée (11) par l'intermédiaire d'un premier bras de transmission (36) respectif et afin de transmettre rigidement les mouvements de ladite poignée (14) à une transmission angulaire (42) par l'intermédiaire d'un deuxième bras de transmission respectif (35), ladite transmission angulaire (42) est montée sur ledit premier côté (12) sur un sommet (57) sur le côté dudit deuxième bras, ladite transmission angulaire (42) étant reliée rigidement et axialement audit moyen de commande (17) afin de réaliser son actionnement respectif sélectivement.

3. Ensemble de châssis selon l'une quelconque des revendications 1 ou 2, **caractérisé en ce que** ledit deuxième corps (40) présente une pluralité de sièges transversaux (51) pour une clavette de sécurité (52) montée sur ledit premier côté (12) dans une position en vis-à-vis dudit deuxième corps (40) et mobile transversalement audit premier côté (12) afin de venir en prise sélectivement avec lesdits sièges transversaux (51) comme résultat de l'action de poussée d'un élément élastique (54), des moyens (37) pour la transmission du mouvement linéaire sont montés sur ledit premier côté (12) dans une liaison rigide axialement avec ledit tenon (27) par l'intermédiaire dudit premier corps (25) afin de transmettre rigidement les mouvements dudit même premier corps (25) à ladite tige de poussée (11) par l'intermédiaire d'un premier bras de transmission respectif (35) et afin de transmettre rigidement les mouvements dudit même premier corps (25) par l'intermédiaire d'un deuxième bras de transmission (35) à une transmission angulaire (42) montée sur ledit premier côté (12) à un sommet (57) dans la région dudit deuxième côté (16), ladite transmission angulaire (42) est reliée rigidement audit moyen (17) pour commander l'inclinaison afin de réaliser sélectivement son actionnement respectif, ledit deuxième bras de transmission (35) comprend ledit deuxième corps allongé (40) et au moins une tige de liaison (43) qui est montée sur ledit premier côté (12) d'une façon à coulissement axial et qui peut être actionnée rigidement par ledit premier corps allongé (25), ledit deuxième corps allongé (40) et ladite tige de liaison (43) sont interchangeables l'un avec l'autre axialement afin de permettre l'assemblage de ladite clavette de sécurité (52) dans l'une quelconque des positions contiguës à ladite transmission angulaire (42) ou contiguës audit tenon (27) .

4. Ensemble de châssis selon la revendication 3, **ca-**

ractérisé en ce que ledit deuxième bras de transmission (35) comprend ledit deuxième corps allongé (40) et la tige de liaison (43), ledit deuxième corps allongé (40) est couplé en série directement à ladite transmission angulaire (42) et ladite tige de liaison (43) est couplée en série audit premier corps allongé (25) de telle sorte que ladite clavette de sécurité (52) puisse être installée immédiatement en dessous de ladite transmission angulaire (42) et par conséquent dans une position distante de ladite poignée (14).

5. Ensemble de châssis selon la revendication 3, **caractérisé en ce que** ledit deuxième bras de transmission (35) comprend ledit deuxième corps allongé (40) et la tige de liaison (43), ledit deuxième corps (40) est couplé en série directement audit premier corps allongé (25) et ladite tige de liaison (43) est couplée en série à ladite transmission angulaire (42) de telle sorte que ladite clavette de sécurité (52) puisse être installée immédiatement au-dessus de ladite poignée (14).

6. Ensemble de châssis selon l'une quelconque des revendications 4 ou 5, **caractérisé en ce que** ladite transmission angulaire (42) présente dans la région dudit premier côté (12) une première broche de couplage (59) conçue pour venir en prise avec un trou (39) pour le couplage transversal audit premier côté (12) et montée dans une position d'extrémité sur ledit deuxième corps allongé (40) ou un deuxième trou (44) pour le couplage transversal audit premier côté (12), formé sur ladite tige de liaison (43), ledit deuxième trou (44) étant conformé d'une façon sensiblement identique audit premier trou (39) de sorte que ledit deuxième corps (40) et ladite tige de liaison (43) soient interchangeables.

7. Ensemble de châssis selon la revendication 6, **caractérisé en ce que** ledit deuxième corps allongé (40) présente dans ses parties d'extrémité supérieure et inférieure respectives (28, 29) une première saillie (31) pour ledit deuxième trou (44) ou pour ledit premier trou (39).

8. Ensemble de châssis selon l'une quelconque des revendications précédentes, **caractérisé en ce que** ladite clavette de sécurité (52) présente un frappeur en forme de L (61) pour la liaison avec ledit châssis fixe (3) de façon à être, pendant l'utilisation, mobile transversalement au moyen de l'action de poussée dudit élément élastique (54) à partir et vers la position de prise avec au moins l'un desdits sièges transversaux (51) lors de la séparation dudit premier côté (12) à partir dudit châssis fixe (3).

9. Ensemble de châssis selon les revendications 7 et 8, **caractérisé en ce qu'**il comprend un dispositif d'opération erronée (59) qui peut être installé sur ledit premier côté (12) d'une façon rigide, dans n'importe laquelle des positions contiguës à ladite transmission angulaire (42) ou contiguës audit tenon (27), ledit dispositif d'opération erronée (50) renfermant intérieurement ladite clavette de sécurité (52) et ledit élément élastique (54).

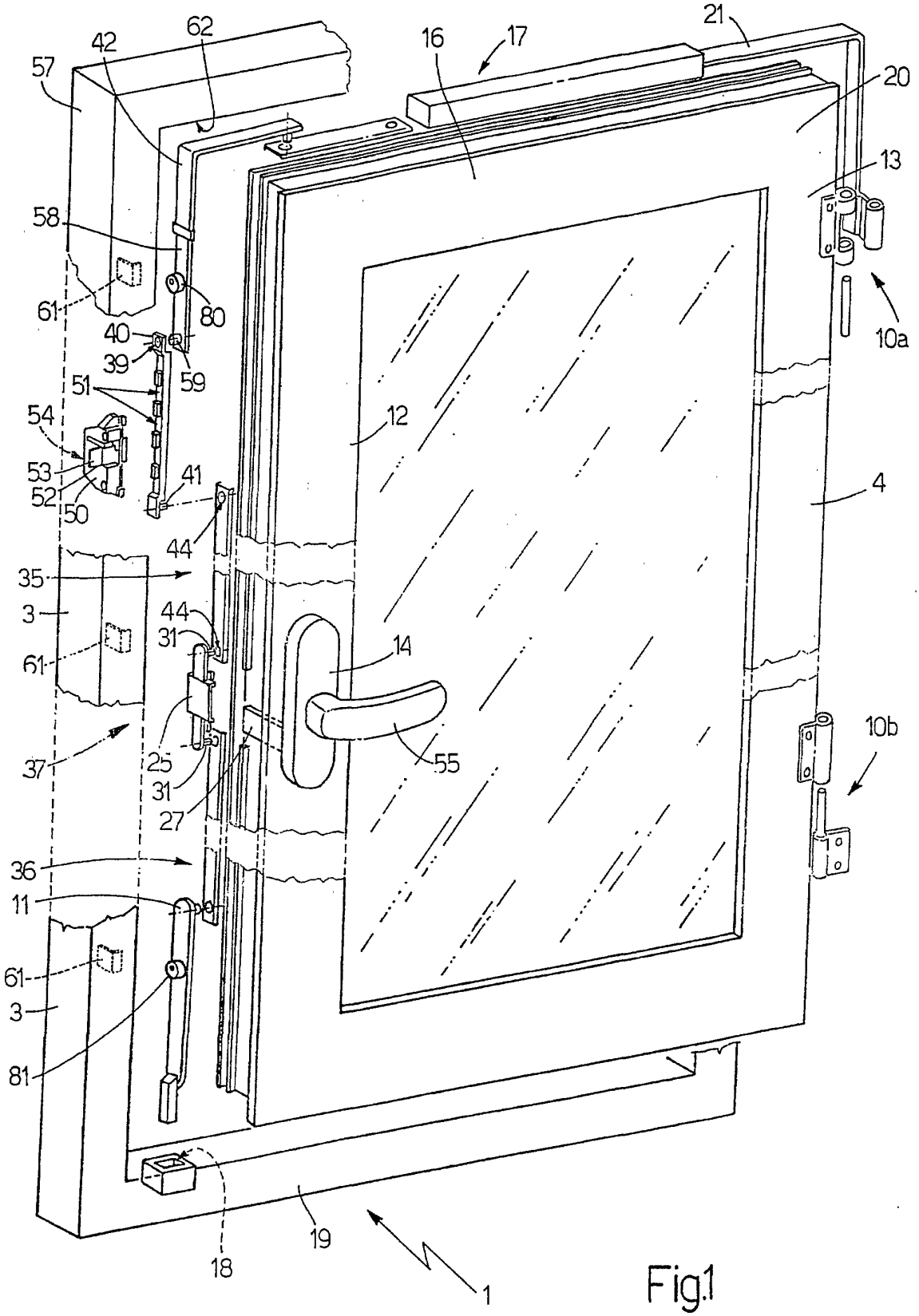
42
62
57
16
17
21
20
13
58
61
80
40
39
59
51
54
53
52
50
41
44
12
4
10a
35
3
44
31
61
14
10b
37
25
31
27
55
36
11
61
3
81
19
18
1

Fig.1

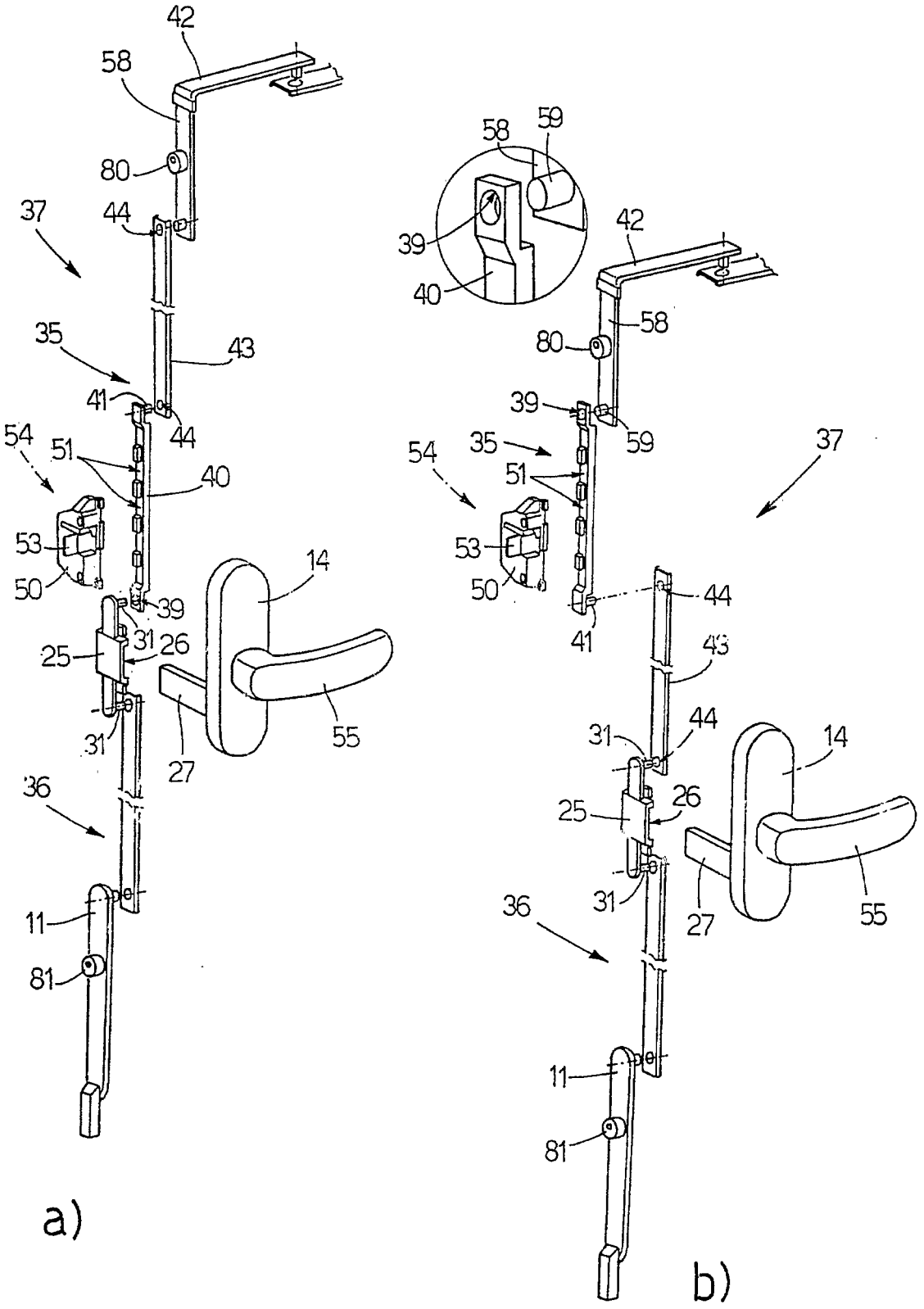
42
58
80
37
44
35
43
41
44
54
51
40
53
50
39
14
31
26
25
31
55
27
36
11
81
a)
58
59
39
40
42
58
80
39
59
35
37
54
51
53
50
44
41
43
31
44
14
25
26
31
36
27
55
11
81
b)

Fig.2

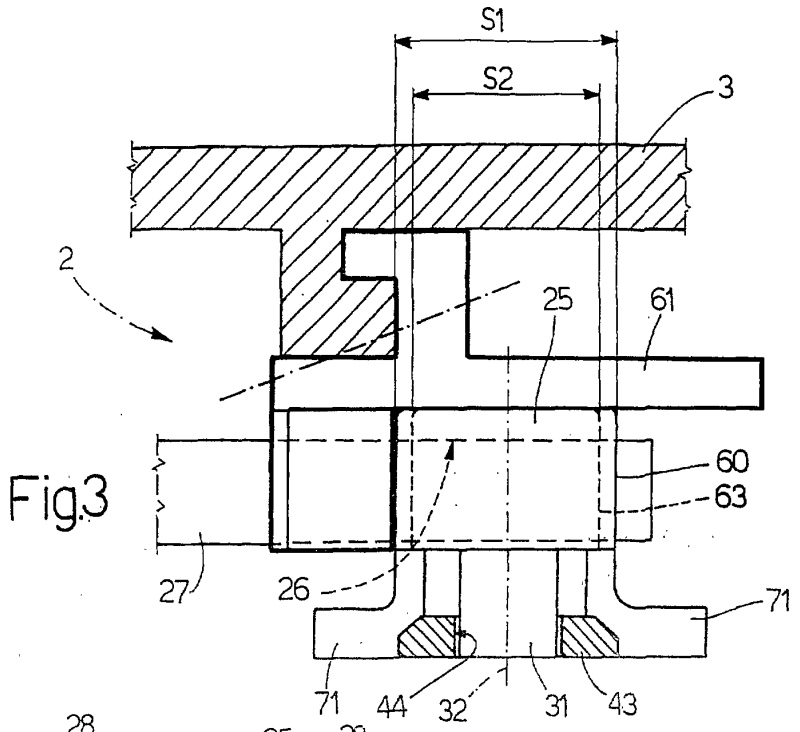
S1
S2
3
2
25
61
60
63
27
26
71
71
44
32
31
43

Fig.3

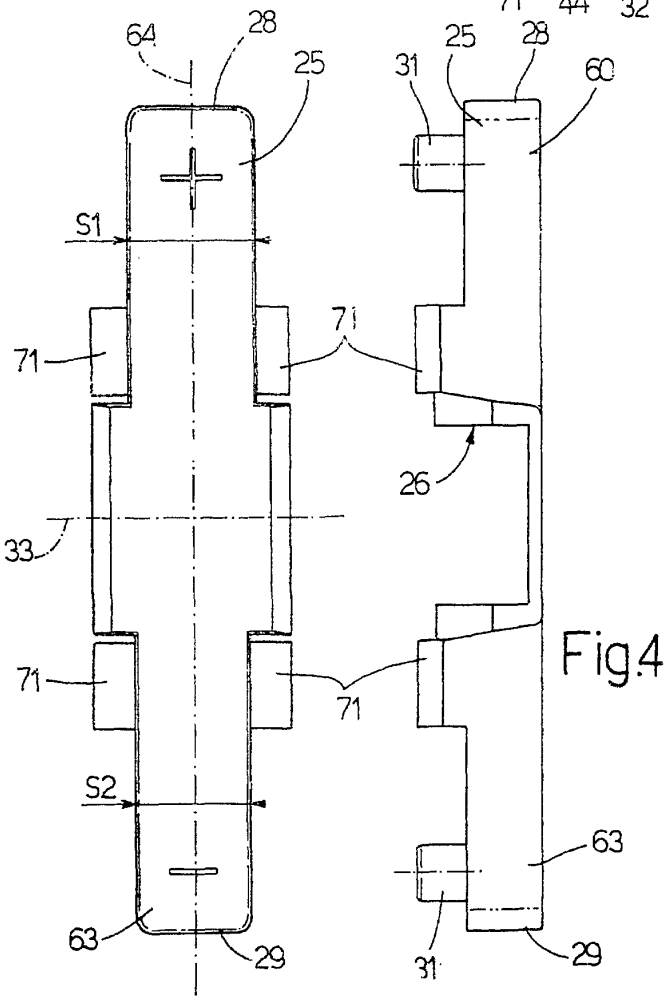
64
28
25
31
25
28
60
S1
71
71
26
33
71
71
S2
63
63
29
31
29

Fig.4