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(54) MOUNTING ASSEMBLY AND METHOD FOR MOUNTING A BALCONY ON A PART OF A BUILDING, AND AUXILIARY MEANS THEREFOR

(57) The invention relates to a mounting assembly for mounting a balcony on a part, for instance a floor or outer wall, of a building, comprising:
a first mounting element which is configured for attaching to the part of the building, and
a second mounting element which is connected to the balcony and which can be coupled to the first mounting element,
wherein the first mounting element comprises setting means for presetting in a situation in which the first mounting element is uncoupled from the second mounting element an angle of the balcony, connected to the second mounting element, relative to the outer wall in a situation in which the second mounting element is coupled to the first mounting element, and
wherein the first and second mounting element are configured to be mutually coupled while the balcony encloses an angle with the outer wall which differs from the preset angle.

The invention also relates to a method for attaching such a mounting assembly to a part, for instance a floor or outer wall, of a building.

Finally, the invention relates to an auxiliary means for use in such a mounting assembly or such a method.

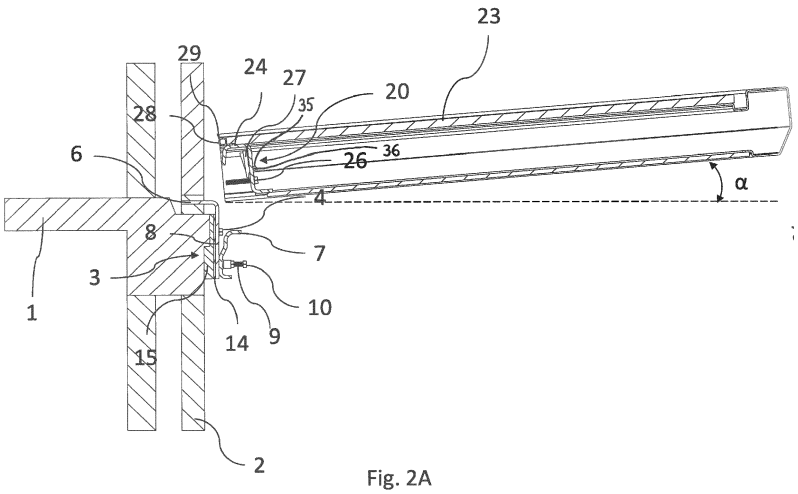

Fig. 2A

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Description

[0001] The invention relates to a mounting assembly for mounting a balcony on a part, for instance a floor or outer wall, of a building, comprising:

a first mounting element which is configured for attaching to the part of the building, and
a second mounting element which is connected to the balcony and which can be coupled to the first mounting element,
wherein according to the invention the first mounting element comprises setting means for presetting in a situation in which the first mounting element is uncoupled from the second mounting element an angle of the balcony, connected to the second mounting element, relative to the outer wall in a situation in which the second mounting element is coupled to the first mounting element.

[0002] Such a mounting assembly is known from for instance DE 10 2008 061 009 A. This document describes a mounting assembly wherein the first mounting element is formed by two plates which are mutually connected by four bolts. The first plate is configured here to be attached to the outer wall of a building, wherein the position of the plate relative to the outer wall can be set by a number of setting screws. As stated, the second plate is connected to the first plate by four bolts, wherein the location and position of the second plate relative to the first plate can be set by rotating nuts on either side of the second plate. A number of openings in the second plate is embodied as slotted hole, whereby the second plate has additional degrees of freedom relative to the first plate. The second plate supports a vertical bolt with a support surface screwed thereon, this vertical bolt bringing about the coupling to the second mounting element. The second mounting element comprises a profile with a reverse L-shape and with a vertical opening which can be placed over the vertical bolt of the first mounting element. The profile is embedded in a concrete balcony by means of rods. By displacing the two plates of the first mounting element relative to each other the angle of the balcony, which is fixedly connected to the second mounting element, can already be set prior to coupling of the balcony to the outer wall. After the two plates of the first mounting element have been fixed in the correct position relative to each other, the balcony has to be suspended with the second mounting element from the first mounting element. The vertical opening of the second mounting element has to be slid over the vertical bolt of the first mounting element for this purpose. This is not easy, since the balcony has to be placed close-fittingly against the outer wall, and a purely vertical movement along the outer wall is thus required. It must be remembered here that the balcony is suspended from hoisting cables and is exposed to ambient influences, particularly the wind, whereby manoeuvring is not easy. The positioning of the balcony relative to the outer wall will in practice be carried out by people situated in a boom lift, themselves having limited freedom of movement.

[0003] It is an object to at least partially obviate the above stated drawback.

[0004] This object is achieved with a mounting assembly of the type stated in the preamble, wherein the first and second mounting element are configured to be mutually coupled while the balcony encloses an angle with the outer wall which differs from the preset angle. The balcony can hereby be moved to the outer wall at an angle to the horizontal, and the second mounting element can there be coupled to the first mounting element while the balcony still encloses the angle with the horizontal. The balcony can then be lowered until it encloses the preset angle with the outer wall. Moving the balcony toward the outer wall at an angle to the horizontal is considerably easier than moving it purely vertically along the outer wall, so that mounting of the balcony can be carried out considerably more quickly and easily than using the known mounting assembly.

[0005] After attaching of the first mounting element to the part of the building, the angle between the part of the building and the first mounting element is determined. Since the balcony connected to the second mounting means is coupled to the first mounting element, the coupling, particularly the orientation and/or angle, between the second mounting element and the first mounting element determines the angle between the balcony connected to the second mounting element and the part of the building connected to the first mounting element. The angle between the balcony and the outer wall of the building can therefore be set by correctly setting the coupling, particularly the orientation and/or angle, between the second mounting element and the first mounting element. This setting can take place using the setting means forming part of the first mounting element, even before the coupling to the second mounting element has taken place. The angle of the balcony relative to the outer wall can in this way be set using the setting means after the first mounting element has been attached to the part of the building and before the balcony connected to the second mounting means is coupled to the first mounting element so that, after coupling to the first mounting element, the balcony connected to the second mounting element extends straightaway at a correct angle relative to the outer wall. Setting of the angle between the balcony and the outer wall can in this way according to the invention take place relatively easily and/or quickly.

[0006] The angle between the substantially horizontal balcony and the substantially vertical outer wall of the building is usually around 90° here, but can differ slightly therefrom if the outer wall is (locally) not (exactly) vertical and/or if it is desired that the balcony has a slight slope. A slight slope is understood to mean that the balcony extends downward from the part of the building at a small angle relative to the horizontal, so that liquids or moisture present thereon, for instance in the case of rain or melting

snow, run therefrom. The angle of the balcony to the horizontal can for instance lie between 1 and 5°.

[0007] It is noted that the angle is here defined between the (usually substantially vertical) main plane of the outer wall from which the balcony extends and the main plane, particularly the upper surface, of the balcony.

[0008] It is further noted that an addition setting of the setting means can if desired be carried out after the balcony connected to the second mounting means has been coupled to the first mounting means. This is however not necessary according to the invention, since setting of the angle between the balcony and the outer wall can take place at least substantially wholly using the setting means forming part of the first mounting element.

[0009] It is further noted that the objective of setting an angle of the balcony, connected to the second mounting element, relative to the outer wall in a situation in which the second mounting element is coupled to the first mounting element is for the balcony to extend substantially horizontally, optionally at a slight slope. The setting means for presetting in a situation in which the first mounting element is uncoupled from the second mounting element an angle of the balcony, connected to the second mounting element, relative to the outer wall in a situation in which the second mounting element is coupled to the first mounting element can therefore alternatively or additionally be regarded as setting means for presetting in a situation in which the first mounting element is uncoupled from the second mounting element an angle between the second mounting element and the first mounting element in a coupled situation, such that the balcony extends substantially horizontally, optionally at a slight slope, in the coupled situation. Where reference is made below of a or the angle between the balcony and the outer wall, reference can alternatively or additionally be made to the angle between the second mounting element and the first mounting element in a coupled situation, so that the balcony extends substantially horizontally, optionally at a slight slope, in the coupled situation.

[0010] In an embodiment of the mounting assembly according to the invention the first mounting element comprises a support member for supporting the second mounting element, this support member having at least one infeed part which in the situation in which the first mounting element is attached to the building encloses an angle with the outer wall, wherein the setting means comprise contact means which can be set, against which contact means the second mounting element or the balcony lies in the situation in which the second mounting element is coupled to the first mounting element.

[0011] The support member has a support zone from which or on which the second mounting element is suspended or supports and around which the second mounting element can pivot at least to some extent. Because the infeed part encloses an angle with the outer wall, the support zone lies some distance outside the outer wall. After attaching of the first mounting element to the part of the building, the support zone of the support member extends substantially horizontally and above the contact means. The second mounting element with balcony, which is suspended from or supports on the support member, pivots round the support zone against the contact means using the force of gravity. The location of the contact zone of the contact means, particularly the distance between the contact zone and the part of the building, and thereby the angle between the balcony and the outer wall, can be set by setting the contact means.

[0012] In an embodiment the first mounting element can comprise a substantially plate-like first profile configured to be attached to the part of the building and a second profile, which second profile extends obliquely upward from the first profile and is at least partially substantially hook-like as seen in cross-section, and forms the support member. The second mounting element can comprise a profile which is at least partially substantially hook-like as seen in cross-section and which is configured to be arranged over the hook-like part of the second profile of the first mounting element for coupling thereto.

[0013] In another embodiment of the mounting assembly according to the invention the support member has on a side facing toward the building during use a part which is rounded as seen in cross-section, such that the rounded part of the support member forms a guide edge for guiding the second mounting element to the situation in which it is coupled to the first mounting element.

[0014] The second mounting element can be guided to the situation in which it is coupled to the first mounting element in simple manner using the guide edge, so that coupling of the second mounting element to the first mounting element can take place easily and/or quickly. The guiding takes place in a direction substantially perpendicularly of the outer wall of the building, so that the second mounting element can be guided toward the outer wall of the building using the guide edge.

[0015] The contact means can for instance comprise an adjusting wedge.

[0016] In yet another embodiment of the mounting assembly according to the invention the contact means comprise at least one contact element which is provided with internal or external screw thread and which is arranged in a hole in the first mounting element which is provided with external or internal screw thread, such that the setting can take place by rotating the contact element.

[0017] The location of the contact zone of the contact element relative to the first mounting element is set by screwing or rotating the contact element, wherein the distance between the contact zone and the part of the building is in particular increased or reduced, whereby the angle between the balcony and the outer wall can be set.

[0018] In yet another embodiment of the mounting assembly according to the invention the support member has a form tapering in upward direction and/or the second mounting element has a form tapering in upward direction for guiding the second mounting element in a substantially horizontal direction substantially parallel to the outer

wall of the building.

[0019] Owing to the tapering form of the support member and/or the second mounting element, the second mounting element can be guided to the situation in which it is coupled to the first mounting element in simple manner so that coupling of the second mounting element to the first mounting element can take place easily and/or quickly. The guiding takes place in a substantially horizontal direction substantially parallel to the outer wall of the building, so that the second mounting element can be guided to a correct position relative to the first mounting element in the direction parallel to the outer wall of the building by means of the tapering form.

[0020] In another embodiment of the mounting assembly according to the invention the second mounting element comprises locking means for locking the second mounting element in the situation in which it is coupled to the first mounting element.

[0021] The locking means are preferably displaceably connected to the second mounting element, such that they can be displaced at least from a first, retracted position in which the second mounting element can be coupled to the first mounting element, to a second, extended position in which the second mounting element is locked in the situation in which it is coupled to the first mounting element.

[0022] During coupling of the second mounting element to the first mounting element, the locking means preferably move from their first to their second position automatically. The locking means can for this purpose for instance move from their first to their second position under the influence of the force of gravity. The locking means can alternatively be connected resiliently to the second mounting element using spring means. Using the spring means or the force of gravity the locking means can move toward their second, extended position and be pressed temporarily to their first, retracted position during coupling, for instance by the first mounting element or the support member thereof, and in the situation in which the second mounting element is coupled to the first mounting element spring back or move back under the influence of the force of gravity to their second position, in which they extend for instance under the support member so that the balcony can only be displaced upward in translation or rotation over some distance until the locking means come to lie against the support member. The balcony can in this way be locked at least to some extent against an upward displacement in translation or rotation.

[0023] The locking means can in particular be pivotally connected to the second mounting element so that the locking means are in particular pivotable from at least their first position to their second position.

[0024] The locking means can particularly comprise for instance a locking protrusion.

[0025] It is noted that displacing of the locking means from their first position to their second position particularly makes it possible to determine visually when the second mounting element is coupled to the first mounting element, because the locking means are situated in their second position after coupling.

[0026] It is further noted that the locking means are displaceable from at least their first position to their second position, but can optionally be displaceable between their first position and their second position.

[0027] In yet another embodiment of the mounting assembly according to the invention the mounting assembly comprises an auxiliary means with a form at least partially identical to a part of the second mounting element, such that the setting means can be preset using the auxiliary means.

[0028] An angle between the auxiliary means and the outer wall can be set using the releasable auxiliary means, this angle corresponding to the angle between the balcony and the outer wall.

[0029] The setting means can alternatively or additionally be set using the releasable auxiliary means such that the balcony extends substantially horizontally, optionally at a slight slope, after coupling. An upper surface of the auxiliary means corresponds here to the main plane of the balcony, so that the setting of the setting means such that the upper surface of the auxiliary means extends substantially horizontally, or optionally at a slight slope, corresponds to a balcony extending substantially horizontally, or optionally at a slight slope, after coupling. A part of the auxiliary means which lies against the contact means can alternatively be disposed substantially vertically here because the angle between this part and the upper surface is 90°.

[0030] The setting means can be set in simple manner and/or quickly and/or easily using the auxiliary means in the above stated manner or in the above stated alternative or additional manner.

[0031] In practical manner the first mounting element comprises locking bolts disposed close to at least the longitudinal ends thereof for locking the second mounting element in the situation in which it is coupled to the first mounting element.

[0032] If desired, the locking bolts can be provided to lock the second mounting element in the situation in which it is coupled to the first mounting element, such that the balcony cannot move upward in rotation or translation. The balcony can in this way be locked against upward displacement when forces are exerted on the underside of the balcony, for instance by wind. The locking bolts can particularly provide a substantially permanent locking of the second mounting element in the situation in which it is coupled to the first mounting element.

[0033] In yet another embodiment of the mounting assembly according to the invention a side of the first mounting element remote from the second mounting element is provided with insulating means.

[0034] Such insulating means interrupt the cold bridge which could result between the first mounting element and the building without the insulating means.

[0035] In yet another embodiment of the mounting assembly according to the invention the second mounting

element comprises a peripheral edge connected thereto, which peripheral edge is configured to surround or support a balcony plate of the balcony.

[0036] The peripheral edge can extend over a part of the periphery or the whole periphery of the balcony plate.

[0037] The peripheral edge can for instance comprise a support edge on which the balcony plate can be arranged for connecting the balcony plate to the second mounting element.

[0038] In yet another embodiment of the mounting assembly according to the invention the mounting assembly comprises sealing means for sealing the balcony, the balcony plate thereof or the peripheral edge against the part of the building in the situation in which the second mounting element is coupled to the first mounting element.

[0039] Using the sealing means a moisture-tight seal of the balcony or the peripheral edge can be provided against the part of the building in the situation in which the second mounting element is coupled to the first mounting element.

[0040] In yet another embodiment of the mounting assembly according to the invention the second mounting element or the balcony comprises connecting means for at least temporarily connecting a camera thereto.

[0041] Using the camera the coupling of the second mounting element to the first mounting element can be monitored in simple manner so that the position of the second mounting element can be adjusted in simple manner to a position correct for coupling to the first mounting element.

[0042] The invention also relates to a method for attaching a mounting assembly as described above to a part, for instance a floor or outer wall, of a building, comprising of:

(a) providing a mounting assembly as described above;
(b) attaching the first mounting element to the part of the building;
(c) presetting the setting means, and
(d) coupling the second mounting element to the first mounting element.

[0043] According to the invention, step (d) takes place by coupling the second mounting element with the balcony to the first mounting element at an angle to the horizontal and then lowering the second mounting element with the balcony until the balcony extends substantially horizontally in the situation in which the second mounting element is coupled to the first mounting element.

[0044] Coupling of the second mounting element with balcony plate to the first mounting element can take place in simple manner in the described manner. The balcony plate is fixedly connected here to the second mounting element or, in the case of a connectable balcony plate, connected to the second mounting element before coupling.

[0045] The second mounting element with balcony plate can for instance be hoisted upward to the first mounting element using hoisting means and then be lowered using the hoisting means until the second mounting element with balcony plate is in the situation in which it is coupled to the first mounting element.

[0046] The second mounting element with balcony plate is in particular lowered until the second mounting element lies against the contact means according to the invention. The second mounting element with balcony plate pivots here round the support member until the second mounting element lies against the contact means.

[0047] In practical manner said angle lies between 2-20°, preferably between 4-8°.

[0048] In yet another embodiment of the method according to the invention a mounting assembly with the above described locking bolts is provided in step (a), and the method comprises the step of:

(e) tightening the locking bolts.

[0049] As elucidated above, the locking bolts can if desired be used to lock the second mounting element in the situation in which it is coupled to the first mounting element.

[0050] According to the invention, step (c) takes place before step (d) so that the balcony extends straightaway at a desired angle to the outer wall after step (d) is carried out. The angle between the substantially horizontal balcony and the substantially vertical outer wall of the building is here around 90°, but can differ therefrom to some extent if the outer wall is (locally) not (exactly) vertical or if it is desired that the balcony slopes slightly downward.

[0051] In an embodiment of the method according to the invention a mounting assembly with an auxiliary means as described above is provided in step (a), wherein step (c) takes place using the auxiliary means.

[0052] An angle between the auxiliary means and the outer wall can be set using the releasable auxiliary means, this angle corresponding to the angle between the balcony and the outer wall.

[0053] The setting means can alternatively or additionally be set using the releasable auxiliary means such that the balcony extends substantially horizontally, optionally at a slight slope, after coupling. An upper surface of the auxiliary means corresponds here to the main plane of the balcony, so that the setting of the setting means such that the upper surface of the auxiliary means extends substantially horizontally, or optionally at a slight slope, corresponds to a balcony extending substantially horizontally, or optionally at a slight slope, after coupling. A part of the auxiliary means lying against the contact means can alternatively be disposed substantially vertically here, because the angle between this part and the upper surface is 90°.

[0054] The invention further relates to an auxiliary means for use in a mounting assembly according to any of the claims 7-10 or a method according to claim 14,

which auxiliary means has a form at least partially substantially identical to a part of a second mounting element.

[0055] An angle between the auxiliary means and the outer wall can be set using the releasable auxiliary means, this angle corresponding to the angle between the balcony and the outer wall.

[0056] The setting means can alternatively or additionally be set using the releasable auxiliary means such that the balcony extends substantially horizontally, optionally at a slight slope, after coupling. An upper surface of the auxiliary means corresponds here to the main plane of the balcony, so that the setting of the setting means such that the upper surface of the auxiliary means extends substantially horizontally, or optionally at a slight slope, corresponds to a balcony extending substantially horizontally, or optionally at a slight slope, after coupling. A part of the auxiliary means which lies against the contact means can alternatively be disposed substantially vertically here because the angle between this part and the upper surface is 90°.

[0057] The invention will be further elucidated with reference to figures shown in a drawing, in which:

figures 1A and 1B show respectively the first mounting element and the second mounting element in perspective view;
figures 2A-2C show schematically the steps of coupling the first mounting element and the second mounting element,
figures 3A and 3B show respectively an auxiliary means for setting the setting means and the use thereof;
figure 4 shows a perspective view of an alternative embodiment of the first mounting element; and
figure 5 shows a flow diagram for the steps of the method according to the invention.

[0058] Figures 1A and 1B show a mounting assembly for mounting a balcony on a part, for instance a floor 1 or outer wall 2, of a building.

[0059] The mounting assembly according to the invention comprises a first mounting element 3 which is shown in figure 1A in a situation in which it is attached to outer wall 2. The first mounting element 3, particularly a profile 8 thereof, is attached to outer wall 2 with bolts or chemical anchors 4. Support members 6 of first mounting element 3 are arranged in recesses 5, whereby first mounting element 3 is suspended from outer wall 2. After attaching of element 3 recesses 5 are filled up with mortar again.

[0060] First mounting element 3 comprises a support member 7 which is connected thereto and is configured to support a second mounting element 20 of figure 1B, as will be elucidated below. Support member 7 extends here at an angle relative to profile 8, whereby a space is present between support member 7 and profile 8 in which the second mounting element 20 can be received, as will also be elucidated below. Support member 7 has a shape with oblique end edges 33 which tapers in upward direction as seen in front view, so that support member 7 can guide second mounting element 20 to a correct position in a substantially horizontal direction substantially parallel to outer wall 2.

[0061] First mounting element 3 has on its side remote from outer wall 2 a number of, in this example three, contact elements 9. Each contact element 9 is provided with external screw thread and is arranged in a respective hole or opening 11 in a bush 12 of first mounting element 3, which is provided with internal screw thread. Contact elements 9 each have a protruding end surface 10, these end surfaces 10 each forming a contact zone for contact with the second mounting element. The length by which end surfaces 10 extend relative to first mounting element 3, i.e. the distance between the contact zone and the part of the building, and thereby the location where the second mounting element lies against end surfaces 10 can be set by rotating or screwing contact elements 9. The angle of the second mounting element relative to outer wall 2 can hereby be set, as will be further elucidated below. The first mounting element further comprises bushes 13 for receiving locking bolts 26, as will also be further elucidated below.

[0062] Figure 1B shows a second mounting element 20 which can be coupled to first mounting element 3. Second mounting element 20 has a form with oblique end edges 34 which tapers in upward direction as seen in front view. Second mounting element 20 is hereby relatively wide on its underside, so that it can be arranged in simple manner over the, on the upper side relatively narrow, support member 7 of first mounting element 3. Because of the corresponding tapered forms of support member 7 and second mounting element 20, second mounting element 20 is guided to a correct coupling position in a substantially horizontal direction parallel to outer wall 2.

[0063] Second mounting element 20 comprises in the shown example a peripheral edge 21 with a support edge 22 on which a balcony plate 23 of the balcony is secured. Balcony plate 23 is fixedly connected to peripheral edge 21.

[0064] Second mounting element 20 comprises a profile 24 which can be arranged in said space between support member 7 and profile 8 of first mounting element 3. Profile 24 is provided with recesses 25 which are configured to receive the bolts or chemical anchors 4 whereby first mounting element 3 is attached to outer wall 2. Recesses 25 have a form which tapers in upward direction so that the recesses are wider on their underside than on their upper side and can thus receive the bolts or anchors 4 more easily. Figure 1B further shows said locking bolts 26 whereby second mounting element 20 can be locked to first mounting element 3. In the shown embodiment a seal 28 with lip 29 is arranged on a side of balcony plate 23 directed toward the first mounting element 3 during use, which seal 28 with lip 29 provides a moisture-tight seal between profile 8 and balcony plate

23, see also figure 2C. Finally, a part of a locking pin 27 which will be discussed below is still just visible in figure 1B.

[0065] Figures 2A-2C show the coupling of the second mounting element 20 to the first mounting element 3 attached to outer wall 2. Firstly, the presetting of setting elements 9 takes place by rotating or screwing setting elements 9 until end surfaces 10 thereof extend at a desired location, this desired location determining the angle of the balcony relative to outer wall 2. If desired, the presetting take place using an auxiliary means 30, as will be further elucidated with reference to figures 3A and 3B.

[0066] After the presetting of setting elements 9 the second mounting element 3 is hoisted up, as shown in figure 2A, using hoisting means (not shown) such as for instance a crane. Second mounting element 20 with balcony plate 23 is here according to the invention held at an angle α to the horizontal, which angle α can lie between about 2-20°.

[0067] Figure 2B shows that profile 24 is arranged in the space between support member 7 and profile 8 of first mounting element 3. Support member 7 has on a side thereof facing toward outer wall 2 a part which is chamfered and/or rounded as seen in cross-section. Profile 24 can slide over this chamfered and/or rounded part and thus be guided to said space. According to the invention, second mounting element 20 with balcony plate 23 is still held at said angle α to the horizontal during arranging, which simplifies the arranging.

[0068] After profile 24 extends in said space, second mounting element 20 with balcony plate 23 is lowered until second mounting element 20, particularly profile 24 thereof, lies against end surfaces 10 of setting elements 9. Second mounting element 20 can pivot here over support member 7. As soon as second mounting element 20 lies against contact elements 9, the second mounting element is in the situation in which it is coupled to first mounting element 3 and balcony plate 23 extends substantially horizontally. Locking bolts 26 can be used to lock second mounting element 20 in the situation in which it is coupled to first mounting element 3.

[0069] As described above, setting of the horizontal position of balcony plate 23 has taken place before coupling using the presetting of contact elements 9. As will be apparent from figure 2C, the angle β between balcony plate 23 and outer wall 2 is determined by the location of end surfaces 10 of contact element 9. If contact elements 9 are screwed further into bushes 12, angle β increases. If contact elements 9 are screwed further out of bushes 12, angle β conversely decreases. The angle β between balcony plate 23 and outer wall 2 can hereby be set before coupling has taken place. Angle β will usually be around 90°. Depending on a deviation of the substantially vertical outer wall 2 relative to the vertical, the angle β will however have to be greater or smaller than 90° in order to dispose balcony plate 23 substantially horizontally. It can also be desirable to dispose the balcony plate slightly obliquely, so that the moisture runs therefrom. Angle β can in that case also differ from 90°.

[0070] Figures 2A-2C further show that second mounting element 20 comprises a locking pin 27 connected pivotally thereto. Locking pin 27 has a part 35 which protrudes through profile 24 and has an opening 36 through which a split pin can be inserted. During arranging of profile 24 in said space, locking pin 27 is in a first, retracted position and automatically extends to a second, extended position after second mounting element 20 has been lowered. As can be seen in figure 2C, in its second position locking pin 27 extends under support member 7 so that second mounting element 20 cannot simply be displaced upward, or can only be displaced upward over a limited distance, and is therefore locked in the situation in which it is coupled to the first mounting element.

[0071] Figures 2A-2C further show that profile 8 of the first mounting element is provided on its side facing toward outer wall 2 with an insulating layer 14, which insulating layer 14 prevents a cold bridge. Mortar is arranged between insulating layer 14 and outer wall 2 for filling up the space therebetween.

[0072] Figure 3A shows the above stated auxiliary means 30 for setting contact elements 9. Auxiliary means 30 has a form at least partially substantially identical to a part of second mounting element 20, particularly profile 24. Auxiliary means 30 can be arranged in said space between support member 7 and profile 8 in the same way as profile 24 and in each case be brought into contact with an end surface 10 of one of the contact elements 9, as shown in figure 3B. An upper surface 31 of auxiliary means 30 resting on support member 7 corresponds to balcony plate 23 of second mounting element 20. Contact elements 9 can be individually screwed further into or out of bushes 12 by screwing or rotating, until upper surface 31 of auxiliary means 30 extends substantially horizontally or optionally at a slight slope, so that balcony plate 23 will also extend substantially horizontally, or optionally at a slight slope, after coupling. A contact element 9 is correctly preset at that moment. It is also possible to dispose the adjoining part 32 lying against contact elements 9 substantially vertically, which likewise corresponds to a substantially horizontal disposition of the balcony in a coupled situation, because the angle between this adjoining part 32 and upper surface 31 is 90°.

[0073] Auxiliary element 30 can then be removed and the steps shown in figures 2A-2C can be performed, so that balcony plate 23 extends substantially horizontally at the end of the step shown in figure 2C.

[0074] In the embodiment described above first mounting element 3 and second mounting element 20 extend over substantially the whole width of the balcony. It is however also possible to give these mounting elements, or at least the co-acting profiles thereof, a divided form. Figure 4 thus shows an embodiment wherein profile 8 of first mounting element 3 does extend over almost the whole width of the balcony, but four individual short support members 7A-D are arranged on profile 8 instead of a continuous support member 7. Each support member

7A-D is here in the shown example provided with two bushes 12A-D for receiving contact elements. Second mounting part 20 could thus also be embodied with a number of individual, relatively short profiles 24.

[0075] The method according to the invention is elucidated once again in figure 5. Step 100 shows therein the attaching of profile 8 to the outer wall, after which the contact elements are preset in step 101. The balcony with the second mounting element is then supplied in step 102, wherein the supplying can already take place at an angle to the horizontal. On the other hand, it is also possible to envisage the balcony being supplied in roughly horizontal position and being tilted close to the outer wall until it takes up an angle α to the horizontal. In step 103 the balcony with the second mounting element is coupled to the first mounting element at an angle α to the horizontal. The balcony with the second mounting element is then lowered in step 104 to the position determined by the preset setting means. In this preset position the balcony will be substantially horizontal, optionally with a slight slope for discharge of water. Once the balcony is in the correct position it is permanently mounted by tightening the locking nuts (step 105).

[0076] It is noted that the invention is not limited to the shown embodiments but also extends to variants within the scope of the appended claims.

Claims

1. Mounting assembly for mounting a balcony on a part, for instance a floor or outer wall, of a building, comprising:

   a first mounting element which is configured for attaching to the part of the building, and
   a second mounting element which is connected to the balcony and which can be coupled to the first mounting element,
   wherein the first mounting element comprises setting means for presetting in a situation in which the first mounting element is uncoupled from the second mounting element an angle of the balcony, connected to the second mounting element, relative to the outer wall in a situation in which the second mounting element is coupled to the first mounting element,
   characterized in that the first and second mounting element are configured to be mutually coupled while the balcony encloses an angle with the outer wall which differs from the preset angle.

2. Mounting assembly as claimed in claim 1, wherein the first mounting element comprises a support member for supporting the second mounting element, this support member having at least an infeed part which in the situation in which it is attached to the building encloses an angle with the outer wall, and wherein the setting means comprise contact means which can be set, against which contact means the second mounting element lies in the situation in which it is coupled to the first mounting element.

3. Mounting assembly as claimed in claim 2, wherein the support member has on a side facing toward the building during use a part which is chamfered and/or rounded as seen in cross-section, such that the chamfered and/or rounded part of the support member forms a guide edge for guiding the second mounting element to a position in which it can be coupled to the first mounting element.

4. Mounting assembly as claimed in claim 2 or 3, wherein the contact means comprise at least one contact element which is provided with screw thread and which is arranged in a hole in the first mounting element which is provided with screw thread, such that the setting can take place by rotating the contact element.

5. Mounting assembly as claimed in any of the claims 2-4, wherein the support member has on its side facing toward the second mounting element during use a form tapering in upward direction and/or the second mounting element has on its side facing toward the first mounting element during use a form tapering in upward direction for guiding the second mounting element in a substantially horizontal direction substantially parallel to the outer wall of the building.

6. Mounting assembly as claimed in any of the foregoing claims, wherein the second mounting element comprises locking means for locking the second mounting element in the situation in which it is coupled to the first mounting element; and optionally wherein the locking means are displaceably connected to the second mounting element, such that they can be displaced at least from a first, retracted position in which the second mounting element can be coupled to the first mounting element, to a second, extended position in which the second mounting element is locked in the situation in which it is coupled to the first mounting element.

7. Mounting assembly as claimed in any of the foregoing claims, further comprising an auxiliary means with a form at least partially identical to a part of the second mounting element, such that the setting means can be preset using the auxiliary means.

8. Mounting assembly as claimed in any of the foregoing claims, wherein:

   the first mounting element comprises locking

bolts disposed close to at least the longitudinal ends thereof for locking the second mounting element in the situation in which it is coupled to the first mounting element; and/or
a side of the first mounting element remote from the second mounting element is provided with insulating means.

9. Mounting assembly as claimed in any of the foregoing claims, wherein the second mounting element comprises a peripheral edge connected thereto, which peripheral edge is configured to surround or support a balcony plate of the balcony; and optionally comprising sealing means for sealing the balcony or the peripheral edge against the part of the building in the situation in which the second mounting element is coupled to the first mounting element.

10. Mounting assembly as claimed in any of the foregoing claims, wherein the second mounting element or the balcony comprises connecting means for at least temporarily connecting a camera thereto.

11. Method for attaching a mounting assembly as claimed in any of the claims 1-10 to a part, for instance a floor or outer wall, of a building, comprising of:

(a) providing a mounting assembly as claimed in any of the claims 1-10;
(b) attaching the first mounting element to the part of the building;
(c) presetting the setting means, and
(d) coupling the second mounting element to the first mounting element, wherein step (d) takes place by coupling the second mounting element with the balcony to the first mounting element at an angle to the horizontal and then lowering the second mounting element with the balcony until the balcony extends substantially horizontally in the situation in which the second mounting element is coupled to the first mounting element.

12. Method as claimed in claim 11, wherein the angle lies between 2-20°, preferably between 4-8°.

13. Method as claimed in claim 11 or 12, wherein a mounting assembly as claimed in at least claim 8 is provided in step (a), and comprising the step of:

(d) tightening the locking bolts.

14. Method as claimed in any of the claims 11-13, wherein a mounting assembly as claimed in at least claim 7 is provided in step (a) and wherein step (c) takes place using the auxiliary means.

15. Auxiliary means for use in a mounting assembly as claimed in any of the claims 7-10 or a method as claimed in claim 14, which auxiliary means has a form at least partially substantially identical to a part of a second mounting element.

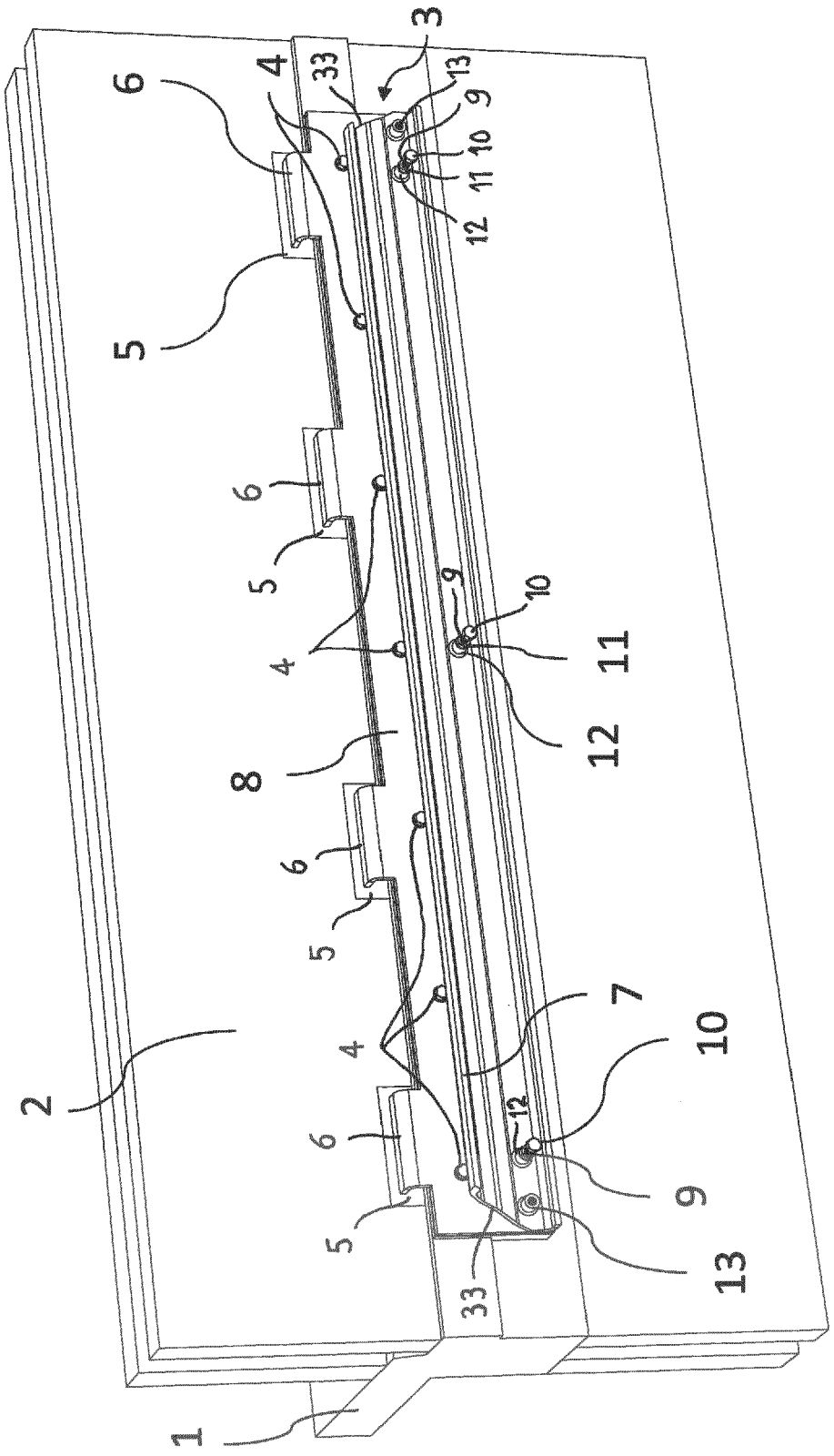

Fig. 1A

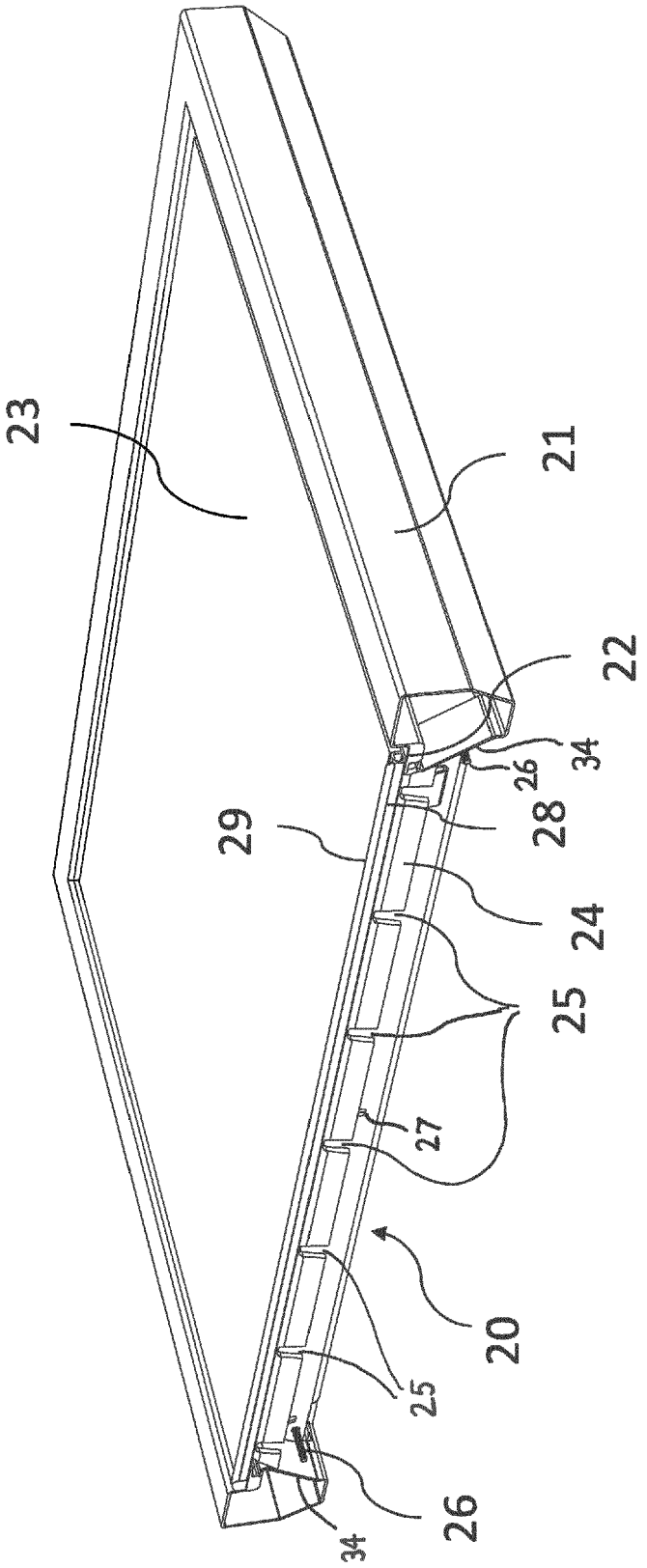

Fig. 1B

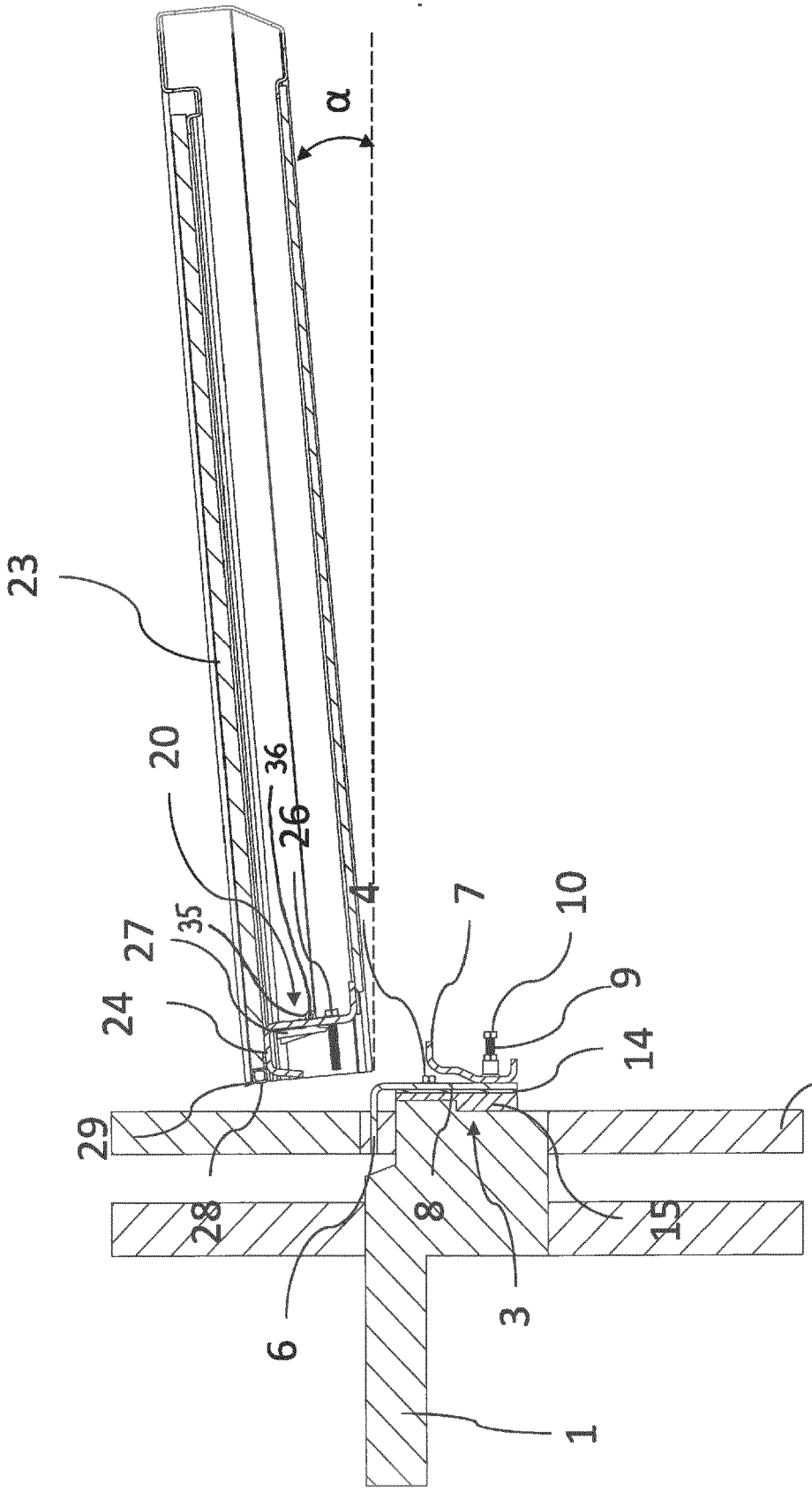

Fig. 2A

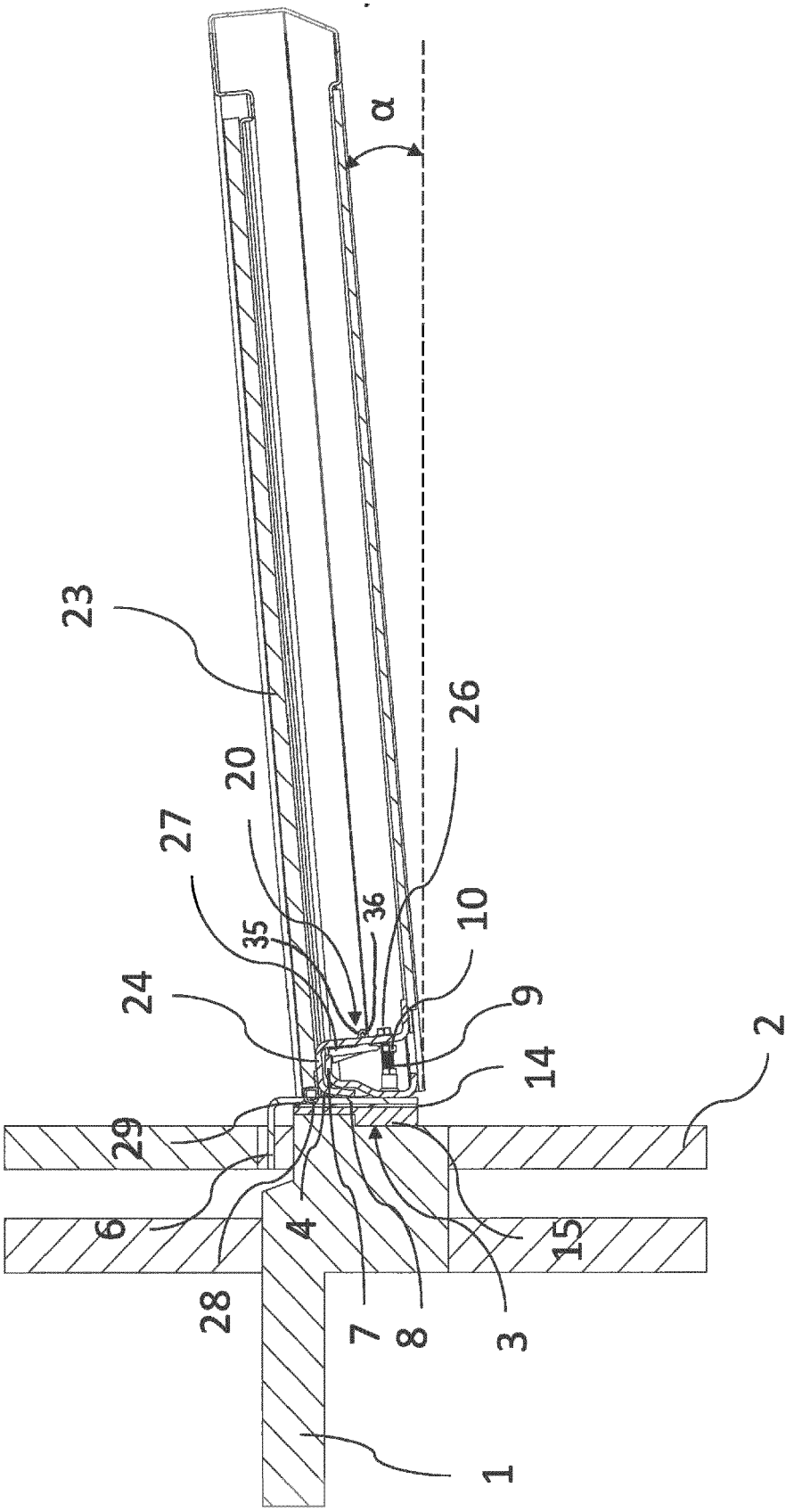

Fig. 2B

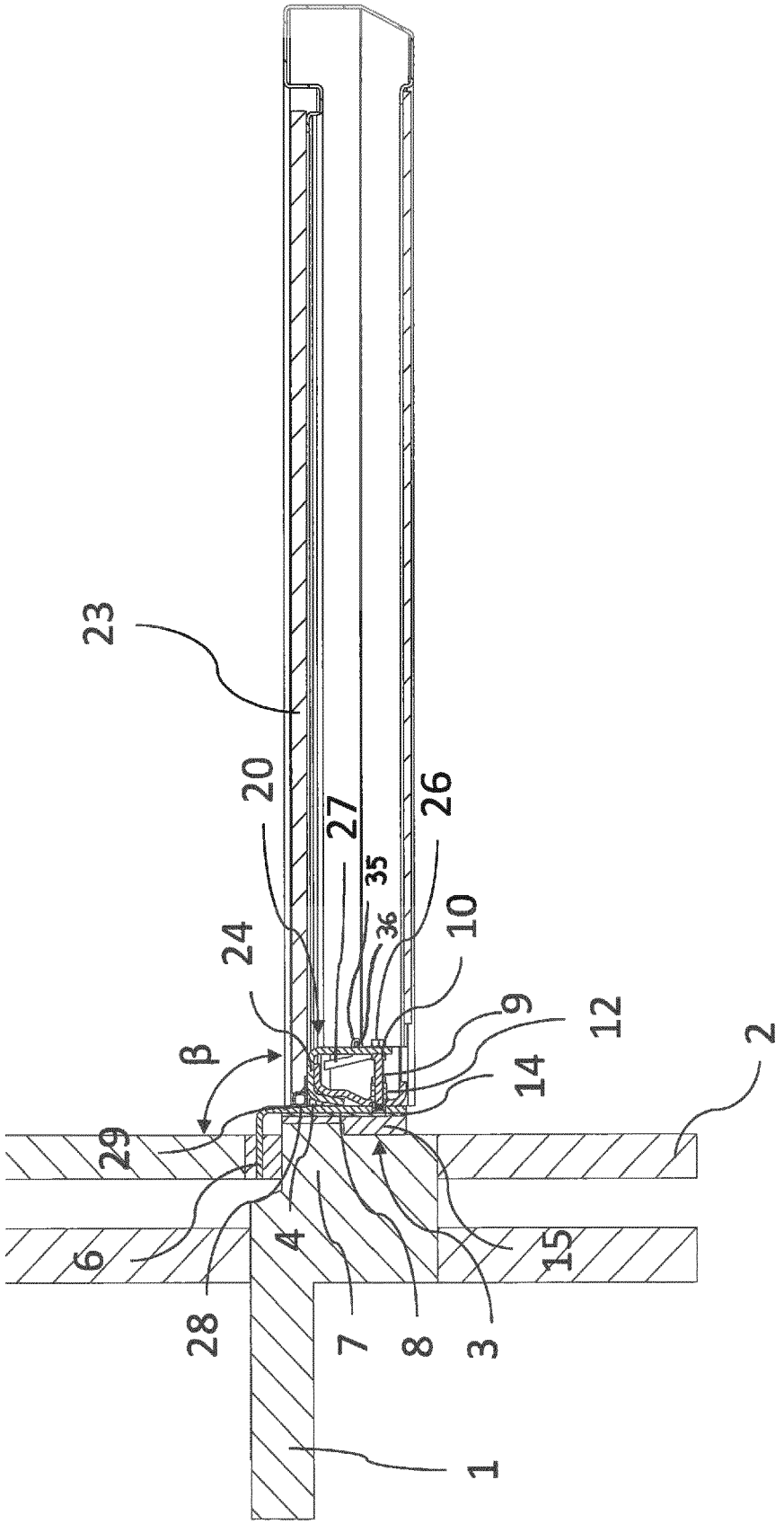

Fig. 2C

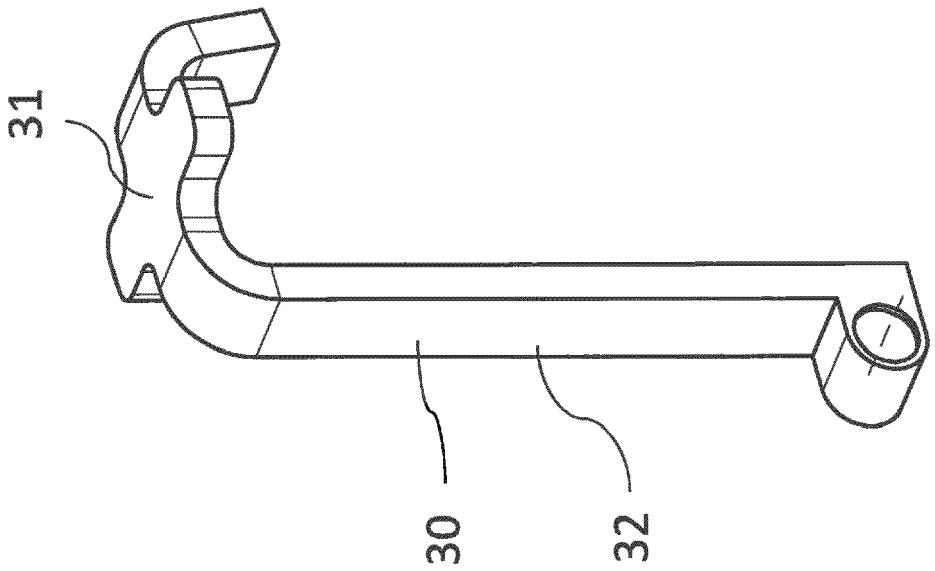

Fig. 3A

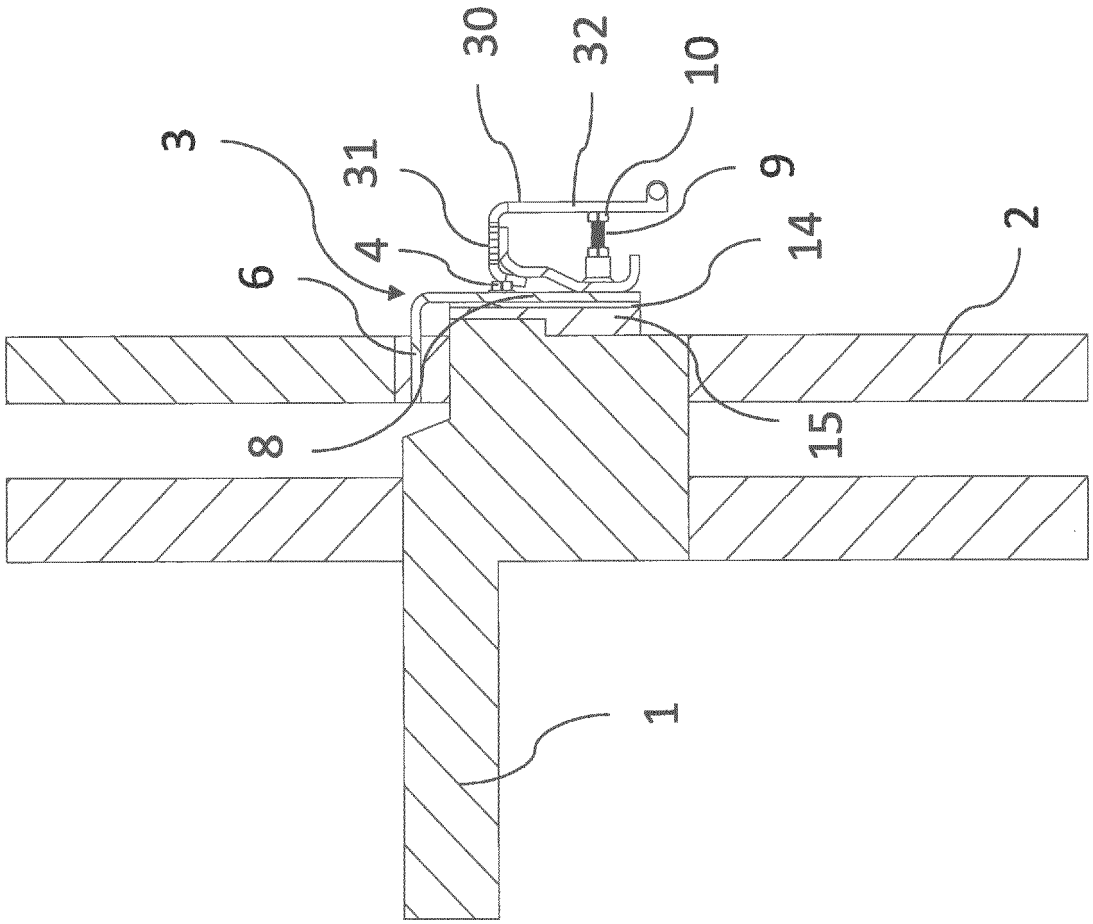

Fig. 3B

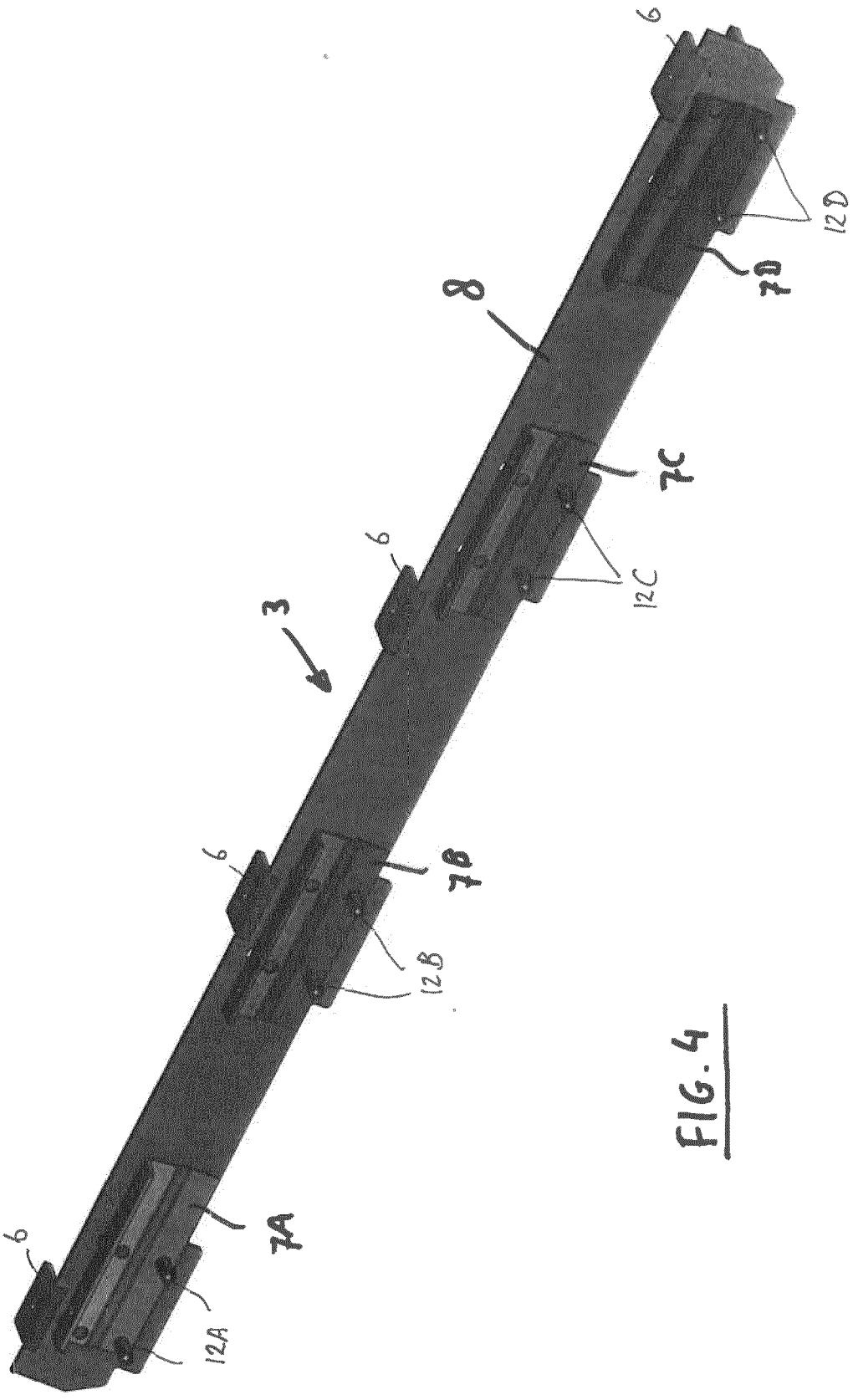

FIG. 4

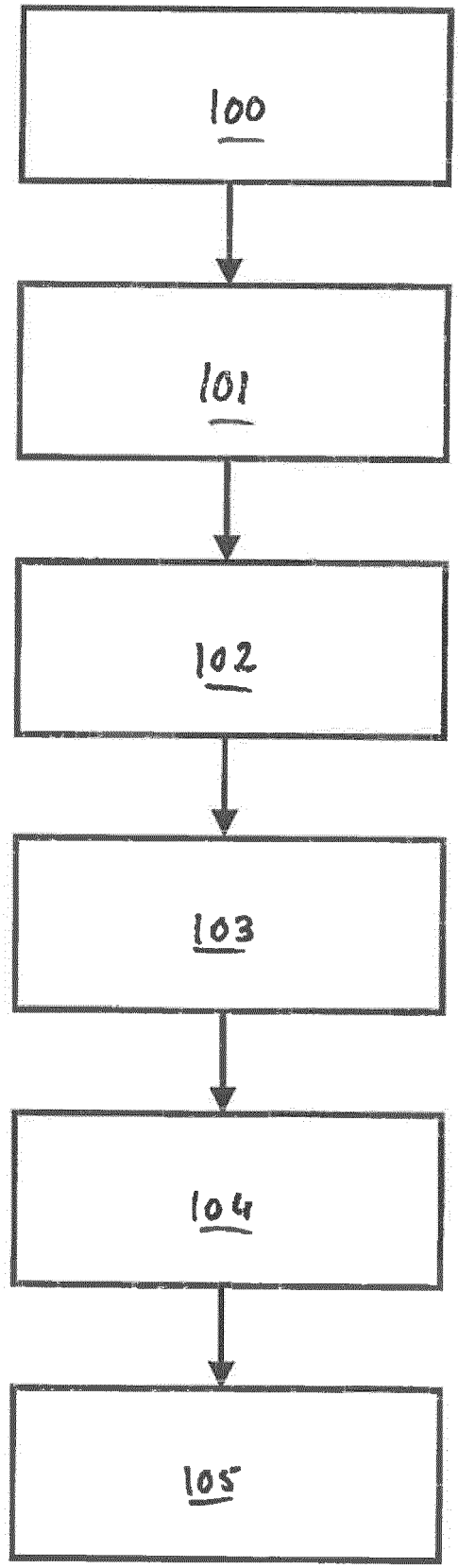

FIG. 5

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EUROPEAN SEARCH REPORT

Application Number
EP 16 17 7817

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X A	NL 1 035 733 C2 (SMITS FRANK BOUDEWIJN [NL]) 25 January 2010 (2010-01-25) * page 1, line 3 - page 2, line 18; figures 1-7 *	1-7, 9-12,15 8,13,14	INV. E04B1/00
X A	DE 92 07 221 U1 (BRAUN GMBH) 29 October 1992 (1992-10-29) * page 14, line 33 - page 15, line 31; figures 6-8 *	1 2-15	

TECHNICAL FIELDS SEARCHED (IPC)

E04B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	25 October 2016	Dieterle, Sibille

CATEGORY OF CITED DOCUMENTS

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EPO FORM 1503 03.82 (P04C01)

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25-10-2016

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
NL 1035733 C2	25-01-2010	NONE	
DE 9207221 U1	29-10-1992	NONE	

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

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