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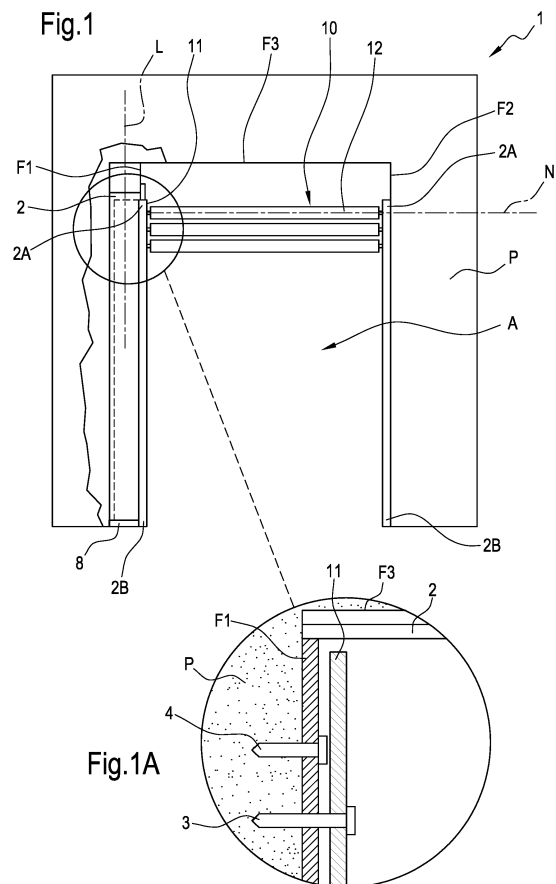
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(54) **APPARATUS FOR MOUNTING A SUNSHADE**

(57) An apparatus (1) for mounting a sunshade (10), comprising: a pair of uprights (2), adapted to be fixed to the wall to support the sunshade (10) so it at least partly closes the opening (A); first connecting elements (3) for mounting the guides (11) of the sunshade (10) to the uprights (2); second connecting elements (4) for mounting the uprights (2) to said wall (P). Each upright (2) of said pair of uprights comprises a respective first fixing profile (21) and a second fixing profile (22). The apparatus comprises, for each upright (2), a first profile bar (5A), including a respective first coupling member (51), configured to be coupled to the first fixing profile (21), and a second profile bar (5B), including a respective second coupling member (52), configured to be coupled to the second fixing profile (22). Said first and the second coupling member (51, 52) are movable relative to the corresponding upright (2) along an adjustment direction having at least one component along the normal direction (N).



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Description

[0001] The present invention relates to an apparatus for mounting a sunshade and a method for mounting a sunshade.

[0002] In the field of sunshade mountings, the use of uprights is known, positioned and connected to the wall, within which the guides of the slats of the sunshade are subsequently arranged.

[0003] During installation operations, there are various problems to be dealt with, in particular it is increasingly difficult to develop installations with suitable alignments due to the walls, which nonetheless have defects as regards linearity. Furthermore, it is commonly found in the field that the distance between the guides, i.e., the length of the slats, is frequently determined in imprecise manner, often causing the slats to be made with larger dimensions and thus, which cannot be mounted.

[0004] Another commonly encountered problem regards the misalignment between the wall and the upright, which is mounted plumb (parallel to the direction of the weight force) also when the wall has different inclinations to those of the weight force. Finally, when it is desired to make a recess on the wall, which is wider than the guides (to contain the shutter box, which is wider than the guides considering the fact that the slats have a greater width than the guides), a space is created between the uprights and the wall to be filled.

[0005] Current solutions comprise filling said meatuses with silicone, not only to the detriment of the quality of the work, but also of the consumption of material. Furthermore, silicone makes disassembly far more complex.

[0006] In other solutions, additional lateral profiles are inserted relative to the base upright, as described in Italian patent application, on behalf of the same Applicant, number 102021000029378.

[0007] In said solution, too, the components are highly complex and nonetheless poorly flexible. Therefore, the aforesaid problems and needs also exist in said solutions.

[0008] An example of an embodiment of an apparatus for mounting a sunshade is shown in patent document JPH0315993U.

[0009] It is an object of the present finding to provide an apparatus and method for mounting a sunshade, which overcome the problems of the aforesaid prior art.

[0010] Said object is fully achieved with the apparatus and method of the present finding that is characterized by the contents of the following claims.

[0011] According to an aspect of the present description, the present finding provides an apparatus for mounting a sunshade. The sunshade includes a pair of guides and a plurality of slats that are movable relative to the pair of guides.

[0012] The sunshade is mounted to a wall, including an opening defining a first mounting face and a second mounting face, which are mutually facing and spaced

apart along a normal direction.

[0013] The apparatus comprises a pair of uprights. Each upright is elongated along a longitudinal direction, perpendicular to the normal direction.

5 **[0014]** Each upright is adapted to be fixed to the wall, in particular to the first mounting face or to the second mounting face, to support the sunshade so it at least partly closes the opening.

10 **[0015]** The apparatus comprises first connecting elements, for mounting the guides of the sunshade to the uprights. In an embodiment, said first connecting elements are threaded members.

[0016] The apparatus comprises second connecting elements, for mounting the uprights to said wall.

15 **[0017]** Each upright of said pair of uprights comprises a respective first fixing profile. Each upright of said pair of uprights comprises a respective second fixing profile. The first and second fixing profiles are spaced apart along a transverse direction perpendicular to the longitudinal direction and the normal direction. The first and second fixing profiles are located on transverse sides of the respective upright.

20 **[0018]** Advantageously, the apparatus comprises, for each upright, a first profile bar. The first profile bar is elongated along the longitudinal direction. The first profile bar includes a respective first coupling member, configured to be coupled to the first fixing profile.

25 **[0019]** The apparatus comprises, for each upright, a second profile bar. The second profile bar is elongated along the longitudinal direction. The second profile bar includes a respective second coupling member, configured to be coupled to the second fixing profile.

30 **[0020]** According to an aspect of the present description, said first and second coupling members are movable relative to the corresponding upright along an adjustment direction, having at least one component along the normal direction.

35 **[0021]** More specifically, the first profile bar comprises a first abutment wall. The first abutment wall includes a respective contact surface, which, in use, faces towards the wall. The second profile bar comprises a second abutment wall. The second abutment wall includes a respective contact surface, which, in use, faces towards the wall. The first profile bar and the second profile bar are movable relative to the respective upright to keep the respective contact surface parallel to the wall.

45 **[0022]** The presence of the first and second profile bars overcomes various advantages. Firstly, it allows compensating a difference in the inclination relative to the vertical between the guides and the wall, which is often not vertical.

50 **[0023]** This is due to the fact that the first and second profile bars can move along an adjustment direction, as said first and second coupling members are movable relative to the corresponding upright (i.e., inside the respective first and second fixing profiles). Therefore, it is possible to insert less the profile bar into one zone than into another, along the longitudinal direction. In an em-

bodiment, said first and second abutment walls extend along the transverse direction in mutually opposite directions, exiting the corresponding upright. Thus, in use, the first and second abutment walls protrude transversely to the corresponding upright.

[0024] Thereby, it is possible to easily cover, in a non-invasive manner, the lateral meatus comprised between the upright and the wall, also when the upright and wall are not parallel. This is particularly important in making recesses having a constant and larger width, i.e., recesses, also adapted to accommodate a shutter box, which must be at least as wide as the slats, therefore, wider than the guides.

[0025] In particular, the transverse extension of the abutment wall portion, which protrudes transversely from the upright, is at least equal to (preferably larger than) half the dimensional difference between the transverse width of the recess on the wall and transverse thickness of the upright.

[0026] According to an embodiment, said first and/or second coupling member comprise a respective first wing, elongated along the normal direction. Said first and/or second coupling member comprise a respective second wing. The second wing is parallel to the first wing. The second wing is spaced apart from the corresponding first wing by a working distance along the transverse direction.

[0027] Advantageously, said first fixing profile and/or the second fixing profile are defined by a respective fixing groove. Each fixing groove extends along the longitudinal direction and has a thickness along the transverse direction.

[0028] The working distance is preferably greater than, or equal to the thickness. Thereby, the first and the second coupling member couple to the first fixing profile and to the second fixing profile, respectively, by interference. Specifically, when the first or the second coupling member are inserted into the respective first or second fixing profile, the first and the second wing slightly bend to allow the insertion. The elastic return force thereof ensures adherence of the first and the second wing to the walls of the corresponding fixing groove. Said adherence determines a friction force preventing easy extraction of the first and the second coupling member.

[0029] In this regard, said first wing and said second wing comprise respective contact surfaces, facing towards inside walls of the corresponding fixing groove. Said contact surfaces comprise a rough surface (i.e., knurled). This allows increasing the degree of friction and thus the force needed to disconnect the first and the second coupling member.

[0030] Each upright extends longitudinally from a first end to a second end.

[0031] In an embodiment, the apparatus comprises, for each upright, a respective bottom cap, configured to be connected to the first or the second end of the respective upright.

[0032] The presence of the cap allows significantly

facilitating installation operations, especially in cases where no lower platform is present, i.e., a further face of the wall, perpendicular to the first and the second face, which joins them. In fact, in the absence of the lower platform, there is no support to bear the weight of the sunshade. Thereby, the presence of the bottom cap allows supporting the sunshade.

[0033] Instead, when the platform is present, the bottom cap nonetheless facilitates installation as it allows a further fixing of the upright to the platform.

[0034] In this regard, the bottom cap comprises holes (preferably slotted) used to connect the upright to the platform.

[0035] In an embodiment, the apparatus comprises at least one gauging crosspiece, elongated along a respective axis between a first end and a second end.

[0036] The gauging crosspiece comprises a first fixing pin. The first fixing pin is located at the first end.

[0037] The gauging crosspiece comprises a second fixing pin, located at the second end.

[0038] The gauging crosspiece comprises a body. The body is interposed along the axis of the gauging crosspiece between the first fixing pin and the second fixing pin.

[0039] The gauging crosspiece is positionable between an installation position, in which the first fixing pin is inserted into the first or the second fixing profile of one upright of said pair of uprights, and the second fixing pin is inserted into the first or the second fixing profile of the other upright of said pair of uprights, and an extracted position, in which the gauging crosspiece is spaced apart from the pair of uprights.

[0040] The presence of the gauging crosspiece allows overcoming at least two problems. Firstly, it allows ensuring a parallel line between the two uprights, after verifying the horizontality of the gauging crosspiece. Secondly, the gauging crosspiece can be used as a simulator for the slats and thus, it can be a precise measurement of the distance from the guides, which completely avoids the risk of having an imprecise mounting, in which the slats have incorrect dimensions.

[0041] The gauging crosspiece preferably comprises a first stop surface. The first stop surface is perpendicular to the axis of the gauging crosspiece. The first stop surface is interposed between the first fixing pin and the body. The gauging crosspiece comprises a second stop surface. The second stop surface is perpendicular to the axis of the gauging crosspiece. The second stop surface is interposed between the second fixing pin and the body.

[0042] In the installation position of the gauging crosspiece, the first stop surface and the second stop surface are in abutment against the respective upright of the pair of uprights, respectively.

[0043] This further specification ensures that the gauging crosspiece is not positioned erroneously, e.g., it is not inserted correctly into the upright and thus the measurements are offset.

[0044] According to an embodiment, each upright

comprises an abutment wall. The abutment wall includes an outside surface, which, in use, faces towards the wall. The abutment wall includes an inside surface, opposite to the outside surface.

[0045] Each upright comprises a first side wall and a second side wall, perpendicular to the abutment wall, so as to form an upright with a "C"-shaped profile.

[0046] Each upright comprises a guide. The guide is elongated along the longitudinal direction. The guide is made on the outside surface.

[0047] The apparatus comprises a fastening plate. The fastening plate includes a guide portion. The guide portion is located inside the guide. The fastening plate includes a fastening portion. The fastening portion extends from the guide portion along a direction perpendicular to the normal direction.

[0048] The fastening plate and the guide define an embodiment of the second connecting elements. Alternatively, it is possible to comprise the use of self-threading connections, which grip the wall and cross the upright from the inside surface to the outside surface.

[0049] In an embodiment, the fastening plate comprises a positioning configuration. In the positioning configuration, the fastening plate is movable inside the guide along the longitudinal direction. Furthermore, the fastening portion is oriented along the longitudinal direction. The fastening plate comprises a locked configuration. In said locked configuration, the fastening portion is oriented along the transverse direction. In this configuration, the fastening plate is prevented from sliding inside the guide by the fixing portion, which rotates relative to the guide portion.

[0050] According to an aspect of the present finding, the present description also provides a fixed or fixable sunshade system in proximity to said opening. The system comprises an apparatus for mounting said sunshade according to any of the features described in the present finding.

[0051] The system comprises a sunshade comprising a plurality of slats. Each slat is rotatable about a longitudinal axis thereof and has a first and a second end operatively coupled to a pair of guides. Said pair of guides is configured to guide the slats along a direction of movement. Each of said guides is stably applied to one of said uprights on the inside of the slideway.

[0052] According to an aspect of the present finding, the present description also provides a sunshade monobloc adapted to be fixed to the wall in proximity to the opening. The monobloc comprises an apparatus for mounting said sunshade according to any of the features described in the present finding.

[0053] The monobloc comprises a sunshade comprising a plurality of slats. Each slat is rotatable about a longitudinal axis thereof and has a first and a second end operatively coupled to a pair of guides. Said pair of guides is configured to guide the slats along a direction of movement. Each of said guides is stably applied to one of said uprights on the inside of the slideway.

[0054] The monobloc comprises a movement apparatus for moving said sunshade so it closes and/or opens said opening.

[0055] The monobloc comprises a containing body defining a containing compartment for at least partly housing said sunshade, said apparatus and the movement apparatus.

[0056] Said containing body preferably has a thickness along the transverse direction, which is greater than the thickness of the guides.

[0057] According to an aspect of the present description, the present finding also provides a method for installing a sunshade so it at least partly closes an opening in a wall. The opening defining a first mounting face and a second mounting face, spaced apart along a normal direction.

[0058] The method comprises a step of providing a sunshade comprising a plurality of slats, each having a first and a second end, operatively coupled to a pair of guides.

[0059] The method comprises a step of providing a pair of uprights, each elongated along a longitudinal direction, perpendicular to the normal direction and including a respective first fixing profile and a second fixing profile, spaced apart along a transverse direction perpendicular to the longitudinal direction and to the normal direction.

[0060] The method comprises a step of connecting the guides of the sunshade to the uprights by means of first connecting elements.

[0061] The method comprises a step of connecting the pair of uprights to the first mounting face and to the second mounting face, respectively, by means of second connecting elements.

[0062] The method comprises a step, for each upright, of providing a first profile bar, elongated along the longitudinal direction and including a respective first coupling member, and a second profile bar, elongated along the longitudinal direction and including a respective second coupling member. For each upright, the method comprises a step of coupling the first coupling member to the first fixing profile of the corresponding upright.

[0063] For each upright, the method comprises a step of coupling the second coupling member to the second fixing profile of the corresponding upright. For each upright, the method comprises a step of moving the first profile bar and/or the second profile bar relative to the corresponding upright, by relative movement between the first coupling member inside the first fixing profile and the second coupling member inside the second fixing profile, along an adjustment direction, having at least one component along the normal direction.

[0064] In an embodiment, the method comprises a step of moving the first profile bar and the second profile bar relative to the respective upright until the respective contact surface is parallel to the wall.

[0065] The method comprises a step of connecting, for each upright, a respective bottom cap to the second end of the respective upright. The second end is the one

which, when the upright is installed, is closest to the ground and thus acts as a support for the sunshade.

[0066] The method comprises a step of providing at least one gauging crosspiece, elongated along a respective axis between a first end and a second end. The provided gauging crosspiece comprising: a first fixing pin, located at the first end, a second fixing pin, located at the second end, and a body interposed along the axis of the gauging crosspiece between the first fixing pin and the second fixing pin.

[0067] The method comprises a step of positioning the gauging crosspiece in an installation position.

[0068] The positioning step comprises a step of first insertion, i.e., insertion of the first fixing pin into the first or the second fixing profile of an upright of said pair of uprights.

[0069] The positioning step comprises a step of second insertion, i.e., insertion of the second fixing pin into the first or the second fixing profile of the other upright of said pair of uprights.

[0070] The method comprises a step of removing the gauging crosspiece from the installation position. The removal step comprises a step of first extraction, i.e., extraction of the first fixing pin from the first or the second fixing profile of an upright of said pair of uprights.

[0071] The removal step comprises a step of second extraction, i.e., extracting the second fixing pin from the first or the second fixing profile of the other upright of said pair of uprights.

[0072] In the steps of first and second insertions, a first stop surface and a second stop surface are brought into abutment against the respective upright of the pair of uprights, respectively.

[0073] For each upright, the method comprises a step of providing a guide, elongated along the longitudinal direction and made on an outside surface of the upright facing towards the wall.

[0074] For each upright, the method comprises a step of providing a fastening plate, including a guide portion, located inside the guide, and a fastening portion, extending from the guide portion along a direction perpendicular to the normal direction.

[0075] For each upright, the method comprises a step of moving the fastening plate inside the guide until it reaches a fastening position.

[0076] For each upright, the method comprises a step of rotating the fastening portion relative to the guide portion to lock the fastening plate in place inside the guide.

[0077] For each upright, the method comprises a step of fixing the fastening portion to the wall by applying a bonding filler or using one or more threaded elements.

[0078] This and other features will be more apparent from the following description of a preferred embodiment, shown merely by way of nonlimiting example in the accompanying drawings, in which:

- figure 1 shows an apparatus for mounting a sun-

shade according to the present finding;

- figure 1A shows a detail of the apparatus for mounting a sunshade in figure 1;
- figure 2 shows a plan section of the apparatus for mounting a sunshade according to figure 1;
- figure 2A shows a detail of a profile bar in figure 2;
- figure 3 shows an apparatus for mounting a sunshade including a gauging crosspiece;
- figure 4 shows a plan section of the apparatus for mounting a sunshade according to figure 1 with two gauging crosspieces inserted;
- figures 5A and 5B show a fastening plate and a gauging crosspiece, respectively;

[0079] With reference to the appended figures, reference numeral 1 denotes an apparatus for mounting a sunshade 10. The sunshade 10 comprises a pair of guides 11. The sunshade 10 comprises a plurality of slats 12, which are movable relative to the pair of guides 11.

[0080] The sunshade 10 has to be mounted so it at least partly closes an opening A, made in a wall P. The opening A on the wall P defines at least a first mounting face F1 and a second mounting face F2.

[0081] The first and the second mounting face F1, F2 are mutually spaced apart along a normal direction N. Thus, the opening A has an extension along the normal direction N and along a longitudinal direction L, perpendicular to the normal direction N. The first and the second mounting face F1, F2 extend along the longitudinal direction L. The longitudinal direction usually corresponds to the substantially vertical direction (i.e., the direction of the weight force) except for structural imprecisions of the opening A.

[0082] The opening A also defines a third mounting face F3, which joins and is perpendicular to the first and the second mounting face F1, F2.

[0083] In some situations, not shown in the appended figures, a fourth mounting face is also provided, parallel to the third mounting face F3 and located at the bottom, to close the frame defined by the opening A. Said fourth mounting face is a shelf or a general platform, for example, which, in many cases, assists installation operations, but which is not always present (e.g. in the case of windows to the ground, i.e. French doors, i.e. in cases where the platform is made afterwards).

[0084] That clarified, the apparatus 1 comprises a pair of uprights 2, in which one upright is adapted to be connected to the first mounting face F1 and the other upright is adapted to be connected to the second mounting face F2. Furthermore, one upright is adapted to be connected to a guide 11 of said pair of guides 11 and the other upright is adapted to be connected to the other guide 11 of said pair of guides. The features of the uprights will be described below with reference to a single upright, thus intending to extend what expressed for an upright 2 also to the other.

[0085] The upright 2 is connected to the respective guide 11 by means of first connecting elements 3, which

can be for example self-threading screws or other threaded members, adapted for the purpose.

[0086] The upright 2 is connected to the wall P in the respective mounting face by means of second connecting elements 4, which are self-threading screws, for example.

[0087] The upright 2 comprises an abutment wall 23. The abutment wall 23 is configured to come into contact or nonetheless be facing towards the wall P. The abutment wall 23 comprises an outside surface 231, which can face towards the wall P, and an inside surface 232, opposite to the outside surface 231.

[0088] The upright 2 comprises a first side wall 24 and a second side wall 25, which are substantially perpendicular to the abutment wall 23.

[0089] The first and the second side wall 24, 25 comprise respective inside surfaces 241, 251, which are joined to the inside surface 232 of the abutment wall 23.

[0090] The first and the second side wall 24, 25 comprise respective outside surfaces 242, 252, which are joined to the outside surface 232 of the abutment wall 23.

[0091] The upright comprises a first fixing profile 21. The upright comprises a second fixing profile 22. The second fixing profile 22 is spaced apart along a transverse direction T, perpendicular to the longitudinal direction L and to the normal direction N, relative to the first fixing profile 21.

[0092] The first fixing profile 21 and the second fixing profile 22 are made at the first side wall 24 and the second side wall 25, respectively.

[0093] The first fixing profile 21 and the second fixing profile 22 comprise a respective fixing groove 21', 22', including:

- a first friction wall 211, 221, extending along the normal direction N;
- a second friction wall 212, 222, extending along the normal direction N;
- a bottom wall 213, 223, extending along the transverse direction T and joining the first and the second friction wall 211, 212.

[0094] Note that, in an embodiment, the first friction wall 211, 221 and the bottom wall 213, 223 are part of the first side wall 24 and the second side wall 25 of the upright 2, respectively.

[0095] Each fixing groove 21', 22' has a normal depth PN (along the normal direction N) and a transverse thickness ST (along the transverse direction T).

[0096] The apparatus 1 comprises, for each upright 2, a first profile bar 5A. The first profile bar 5A is elongated along the longitudinal direction L. The first profile bar 5A includes a respective first coupling member 51. The first coupling member 51 is configured to be coupled to the first fixing profile 21.

[0097] The apparatus 1 comprises, for each upright 2, a second profile bar 5B. The second profile bar 5B is elongated along the longitudinal direction L. The second

profile bar 5B includes a respective second coupling member 52. The second coupling member 52 is configured to be coupled to the second fixing profile 22.

[0098] More specifically, each of said first and second profile bar 5A, 5B comprise a respective first wing 511, 521. Each of said first and second profile bars 5A, 5B comprise a respective second wing 512, 522.

[0099] The first wing 511, 521 and the second wing 512, 522 extend along the normal direction N and are substantially parallel to each other.

[0100] The first wing 511, 521 and the second wing 512, 522 of the first profile bar 5A and the second profile bar 5B define the first coupling member 51 and the second coupling member 52, respectively.

[0101] Preferably, the first wing 511, 521 and the second wing 512, 522 comprise respective contact surfaces (i.e., friction surfaces) 511', 521', 512', 522', which are rough in order to increase the friction with the surfaces against which they should slide.

[0102] In this regard, we can observe that the first wing 511, 521 and the second wing 512, 522 are configured to be inserted into a respective fixing groove 21', 22' of the upright 2.

[0103] More specifically, in the relative movement between the first wing 511, 521 and the second wing 512, 522 and the respective fixing groove 21', 22', the contact surfaces (i.e. friction surfaces) 511', 521', 512', 522', of the first wing 511, 521 and the second wing 512, 522 are configured to slide on the friction walls 211, 212, 221, 222.

[0104] In an embodiment, the normal extension N of the first wing 511, 521 and the second wing 512, 522 is smaller than the normal depth PN of the respective fixing groove 21', 22'. Preferably, the normal extension N of the first wing 511, 521 and the second wing 512, 522 is at least equal to half the normal depth PN of the respective fixing groove 21', 22'.

[0105] The transverse distance between the first wing 511, 521 and the second wing 512, 522 is equal to, or greater than the transverse thickness ST of the respective fixing groove 21', 22'.

[0106] This allows an elastic deformation of the wings so that there is an elastic return force that pushes the wings against the friction walls 211, 212, 221, 222.

[0107] In this regard, in an embodiment, the first wing 511, 521 comprises a respective flare 511'', 521'', made at one end of the first wing 511, 521 configured to primarily enter inside the respective fixing groove 21'.

[0108] The flares 511'', 521'' are inclined relative to the corresponding first or second wing towards the inside of the respective groove. Thus, the directions of the flares 511'', 521'' mutually converge in an insertion direction for the wings into the groove.

[0109] In an embodiment, the second wing 512, 522 comprises a respective flare 512'', 522'', made at one end of the second wing 512, 522 configured to primarily enter the respective fixing groove 22'.

[0110] The flares are inclined relative to the corresponding first or second wing towards the inside of the

respective groove. Thus, the directions of the flares mutually converge in an insertion direction for the wings into the groove.

[0111] This embodiment facilitates the insertion of the wings and allows preventing jamming.

[0112] The first wing 511, 521 and the second wing 512, 522 have a ratio between the transverse thickness and the normal length less than 1/3, preferably less than 1/5. This ensures a tradeoff between resistance and flexibility.

[0113] The first profile bar 5A comprises a first abutment wall 53, including a contact surface 531 which, in use, faces towards the wall P, and a visible surface 532, opposite the contact surface 531.

[0114] The first abutment wall 53 is perpendicular to the normal direction N.

[0115] The first wing 511 and the second wing 512 of the first profile bar 5A rise up from the first abutment wall 53, in particular on the side of the contact surface 531.

[0116] When the first wing 511 and the second wing 512 of the first profile bar 5A are inserted into the fixing groove 21', the first abutment wall 53 extends along the transverse direction T outside the upright 2 (i.e., the first abutment wall 53 protrudes transversely to the upright 2). Thus, the first abutment wall 53 is cantilevered relative to the upright of a cantilevered length LSB.

[0117] When the upright is correctly installed, shoulders S1, S2, of a construction material (masonry, drywall) are expected to be made, as they are part of the wall P, allowing the upright 2 to be surrounded by the masonry.

[0118] The transverse distance between the two shoulders S1, S2 is greater than the transverse volume T of the upright 2. Thus, a first meatus M1 and a second meatus M2 are present between the shoulders S1, S2 and the upright 2.

[0119] The fact that the transverse distance between the two shoulders S1, S2 is greater than the upright 2 also allows using the same recess between the two shoulders S1, S2 for the shutter box of the sunshade 10, which has a greater transverse thickness.

[0120] The cantilevered length LSB of the first abutment wall 53 is greater than the first meatus M1.

[0121] The second profile bar 5B comprises a second abutment wall 54, including a respective contact surface 541 which, in use, faces towards the wall P, and a respective visible surface 542, opposite to the contact surface 541. The second abutment wall 54 is perpendicular to the normal direction N. The first wing 521 and the second wing 522 of the second profile bar 5B rise up from the second abutment wall 54, in particular on the side of the contact surface 541.

[0122] When the first wing 521 and the second wing 522 of the second profile bar 5B are inserted inside the fixing groove 22', the second abutment wall 54 extends along the transverse direction T outside the upright 2 (i.e., the second abutment wall 54 protrudes transversely relative to the upright 2). Thus, the second abutment wall

54 is cantilevered relative to the upright of the cantilevered length LSB.

[0123] The cantilevered length LSB of the second abutment wall 53 is greater than the second meatus M2.

[0124] The first profile bar 5A and the second profile bar 5B are movable relative to the respective upright 2 to keep the respective contact surface 531, 541 parallel to the wall P.

[0125] According to an embodiment, the apparatus 1 comprises a lighting element, preferably a linear lighting element. The lighting element is located on the bottom wall 213, 223 of a fixing groove 21', 22'. Alternatively, it is also possible to provide two lighting elements, each located on the bottom wall 213, 223 of a respective fixing groove 21', 22'. The lighting elements are configured to emit the light in a direction including at least one normal component in a direction exiting the upright 2 and towards the opening A.

[0126] In order to allow the light emitted by the lighting elements to exit the respective groove 21', 22', the first and/or the second profile bar 5A, 5B comprise respective lighting holes, made on the first abutment wall 53 and/or on the second abutment wall 54.

[0127] Thereby, the apparatus also allows easily integrating a light support, which is not only appreciable from an esthetic point of view, but also functional for lighting the spaces without having to provide additional lights.

[0128] In an embodiment, the apparatus 1 comprises a gauging crosspiece 6. The gauging crosspiece 6 extends, in use, along the normal direction N. The gauging crosspiece 6 is inserted into the two uprights 2 of said pair so as to keep a parallelism between the two uprights. Furthermore, the gauging crosspiece 6 keeps the uprights 2, during the installation thereof, at a normal distance, which is precise and corresponds to the dimensions of the sunshade 10 to be mounted.

[0129] The gauging crosspiece 6 is elongated along a respective axis A1 between a first end 6A and a second end 6B.

[0130] Said gauging crosspiece 6 comprises a first fixing pin 61, located at the first end 6A.

[0131] Said gauging crosspiece 6 comprises a second fixing pin 62, located at the second end 6B.

[0132] Said gauging crosspiece 6 comprises a body 63, interposed along the axis of the gauging crosspiece 6 between the first fixing pin 61 and the second fixing pin 62.

[0133] The normal length (along the normal direction N) of the body 63 reproduces the length of the sunshade 10.

[0134] The gauging crosspiece 6 is positionable in an installation position PIN. In the installation position, i.e., the position in which the mounting of the uprights 2 to the wall P is being performed, the first fixing pin 61 is inserted into the first or the second fixing profile 21, 22 of an upright 2 of said pair of uprights. Furthermore, the second fixing pin 62 is inserted into the first or the second fixing profile 21, 22 of the other upright 2 of said pair of uprights.

[0135] The gauging crosspiece 6 is positionable in an extracted position PDN, in which the gauging crosspiece 6 is spaced apart from the pair of uprights 2. Preferably, there are at least two gauging crosspieces 6 for the installation, in which a first gauging crosspiece 6' is inserted into the first fixing profile 21 of each upright 2 and the second gauging crosspiece 6" is inserted into the second fixing profile 22 of each upright 2. In fact, this solution ensures a rigidity and a parallelism of the structure being mounted, even more reliable.

[0136] In an embodiment, the gauging crosspiece 6 comprises a first stop surface 611, perpendicular to the axis A1 of the gauging crosspiece 6. The first stop surface 611 is interposed between the first fixing pin 61 and the body 63. The first stop surface 611 is joined to the first fixing pin 61 and to the body 63 with respective curved fittings.

[0137] In an embodiment, the gauging crosspiece 6 comprises a second stop surface 621, perpendicular to the axis A1 of the gauging crosspiece 6. The second stop surface 621 is interposed between the second fixing pin 62 and the body 63. The second stop surface 621 is joined to the second fixing pin 62 and to the body 63 with respective curved fittings.

[0138] In the installation position PIN of the gauging crosspiece 6, the first fixing pin 61 and the second fixing pin 62 are inserted into a corresponding fixing groove 21', 22' of the pair of uprights 2. In an embodiment, they are thus borne by the friction between the first fixing pin 61 and the second fixing pin 62 with the friction walls of the corresponding fixing groove 21', 22'.

[0139] In the installation position PIN of the gauging crosspiece 6, the first stop surface 611 and the second stop surface 621 are in abutment against the respective upright 2 of the pair of uprights, respectively.

[0140] In a particularly advantageous solution, the apparatus 1 comprises at least four gauging crosspieces 6, located in pairs on different heights (i.e., longitudinal heights of the uprights 2). Thus, a first pair of gauging crosspieces 6A is located at a first longitudinal height, in proximity to the ground, while a second pair of crosspieces 6B is located at a second longitudinal height, in proximity to the third mounting face F3.

[0141] Note that, in some cases, when the friction between the first fixing pin 61 and the second fixing pin 62 with the respective fixing groove 21, 22 is insufficient, the gauging crosspiece is provided with locking holes 64. Furthermore, locking pins 65 are also provided. In said embodiment, the fixing grooves 21', 22' also have corresponding locking openings AT, passing the corresponding friction walls.

[0142] When the gauging crosspiece 6 needs to be mounted, the locking holes 64 are aligned with the locking openings AT of the groove 21', 22', and then the locking pins 65 are inserted, ensuring that the gauging crosspiece 6 does not slide due to the weight.

[0143] According to a particularly advantageous embodiment, the present finding describes an embodiment

of the second connecting elements, which can be combined with all the other features of the finding to increase the ease of installation.

[0144] In said embodiment, each upright 2 comprises a guide 233. The guide 233 is elongated along the longitudinal direction over the entire body of the respective upright 2. The guide 233 is made on the outside surface 231. For example, the guide 233 is a dovetail grooved profile having a respective transverse thickness along the transverse direction T.

[0145] Furthermore, the apparatus 1 comprises a fastening plate 7. The fastening plate 7 can also be called bracket. The fastening plate 7 includes a guide portion 71. The guide portion 71 is located inside the guide 233.

[0146] The guide portion 71 is preferably made with a circular shape having cut circle sectors. This results in the guide portion 71 having a first extension ES1 along a first greater direction, and a second extension ES2 along a second direction, perpendicular to the first direction. The first extension ES1 is greater than the second extension ES2.

[0147] The fastening plate 7 comprises a fastening portion 72. The fastening portion 72 extends from the guide portion 71 along a direction perpendicular to the normal direction N.

[0148] The guide portion 71 and the fastening portion 72 are preferably coplanar. The fastening portion 72 can be an arm extending from the guide portion 71, so that a rotation of the fastening portion 72 about an axis parallel to the normal direction N also determines a rotation of the guide portion 71. The fastening plate 7 comprises a positioning configuration, in which the fastening plate 7 is movable inside the guide 233 along the longitudinal direction L. In that positioning configuration:

- a) the fastening portion 72 is oriented along the longitudinal direction L;
- b) the first extension ES1 is a longitudinal extension;
- c) the second extension is a transverse extension smaller than the transverse thickness of the guide 233.

[0149] The fastening plate 7 comprises a locked configuration. In the locked configuration:

- a) the fastening portion 72 is oriented along the transverse direction T;
- b) the first extension ES1 is a transverse extension greater than the transverse thickness of the guide 233;
- c) the second extension ES2 is a longitudinal extension.

[0150] The fact that the first extension ES1 is greater than the transverse thickness of the guide 233 causes the fastening plate 7 to be locked inside the guide 233 by interference.

[0151] The passage from the positioning configuration

to the locked configuration is obtained by a 90° rotation of the fastening plate 7, performed with a manual torque applied to the fastening portion 72.

[0152] Finally, according to an embodiment, the apparatus 1 comprises, for each upright, a respective bottom cap 8. 5

[0153] The bottom cap 8 is mounted to the first and/or second end 2A, 2B of the respective upright 2. In particular, the bottom cap 8 is mounted to the end of the upright, which, when the upright is installed, will be the one closest to the ground. 10

[0154] The presence of the cap connected to the upright 2 allows resting the sunshade 10 in the guide 11 mounting steps.

[0155] The bottom cap 8 comprises one or more fixing holes 81, passing through the cap 8 and configured to allow the cap 8 (and the upright 2 connected thereto) to be fastened to the fourth fastening surface (i.e., platform or shelf). 15

[0156] Said one or more fixing holes 81 are preferably slotted, to allow the upright 2 to be adjusted along the extension direction of said one or more slotted fixing holes 81. 20

Claims

1. Apparatus (1) for mounting a sunshade (10), including a pair of guides (11) and a plurality of slats (12), which are movable relative to the pair of guides (11), on a wall (P), including an opening (A) defining a first mounting face (F1) and a second mounting face (F2), which are spaced apart along a normal direction (N), 30

wherein the apparatus (1) comprises:

- a pair of uprights (2) elongated along a longitudinal direction (L), perpendicular to the normal direction (N) and adapted to be fixed to the wall to support the sunshade (10) so it at least partly closes the opening (A); 40
- first connecting elements (3) for mounting the guides (11) of the sunshade (10) to the uprights (2); 45
- second connecting elements (4) for mounting the uprights (2) to said wall (P),

wherein each upright (2) of said pair of uprights comprises a respective first fixing profile (21) and a second fixing profile (22), spaced along a transverse direction (T) perpendicular to the longitudinal direction (L) and to the normal direction (N), 50

characterized in that the apparatus comprises, for each upright (2), a first profile bar (5A), elongated along the longitudinal direction (L) and 55

including a respective first coupling member (51), configured to be coupled to the first fixing profile (21), and a second profile bar (5B), elongated along the longitudinal direction (L) and including a respective second coupling member (52), configured to be coupled to the second fixing profile (22), wherein said first and the second coupling member (51, 52) are movable relative to the corresponding upright (2) along an adjustment direction having at least one component along the normal direction (N).

2. Apparatus (1) according to claim 1, wherein the first profile bar (5A) comprises a first abutment wall (53), including a respective contact surface (531), which, in use, faces towards the wall (P), and wherein the second profile bar (5B) comprises a second abutment wall (54), including a respective contact surface (541), which, in use, faces towards the wall (P), wherein the first profile bar (5A) and the second profile bar (5B) are movable relative to the respective upright (2) to keep the respective contact surface (531, 541) parallel to the wall (P). 25

3. Apparatus (1) according to claim 2, wherein each of said first and second abutment walls (53, 54) extend along the transverse direction (T) in mutually opposite directions, exiting the corresponding upright (2) and wherein, in use, the first and the second abutment wall (53, 54) protrude transversely to the corresponding upright (2). 30

4. Apparatus (1) according to any one of the preceding claims, wherein said first and second coupling members (51, 52) comprise: 35

a respective first wing (511, 521), elongated along the normal direction (N);
a respective second wing (512, 522), parallel to the first wing and spaced apart from the corresponding first wing (511, 521) along the transverse direction (T) by a working distance (DO), wherein said first fixing profile (21) and the second fixing profile (22) are defined by a respective fixing groove (211, 212) extending along the longitudinal direction (L) and having a transverse thickness (ST) along the transverse direction (T), 40

wherein the working distance (DO) is greater than, or equal to the thickness (SO), so that the first and the second coupling member (51, 52) are coupled to the first fixing profile (21) and to the second fixing profile (22), respectively, by interference. 45

5. Apparatus (1) according to claim 4, wherein said first wing (511, 521) and the second wing (512, 522) 50

comprise respective contact surfaces, facing towards inside walls of the corresponding fixing groove (211, 212) and wherein said contact surfaces comprise a rough surface.

6. Apparatus (1) according to any one of the preceding claims, wherein each upright (2) extends longitudinally from a first end (2A) and a second end (2B), and wherein the apparatus comprises, for each upright (2), a respective bottom cap, configured to be connected to the first or the second end (2A, 2B) of the respective upright (2).
7. Apparatus (1) according to any one of the preceding claims, comprising at least one gauging crosspiece (6), elongated along a respective axis between a first end (6A) and a second end (6B), said gauging crosspiece (6) comprising:
- a first fixing pin (61), located at the first end (6A);
 - a second fixing pin (62), located at the second end (6B);
 - a body (63), interposed along the axis of the gauging crosspiece (6) between the first fixing pin (61) and the second fixing pin (62),

wherein the gauging crosspiece (6) is positionable in an installation position, in which the first fixing pin (61) is inserted into the first or the second fixing profile (21, 22) of an upright (2) of said pair of uprights and the second fixing pin (62) is inserted into the first or the second fixing profile (21, 22) of the other upright (2) of said pair of uprights, and an extracted position, in which the gauging crosspiece (6) is spaced apart from the pair of uprights (2), wherein the gauging crosspiece (6) comprises a first stop surface (611), perpendicular to the axis of the gauging crosspiece (6) and interposed between the first fixing pin (61) and the body (63), and a second stop surface (621), perpendicular to the axis of the gauging crosspiece (6) and interposed between the second fixing pin (62) and the body (63), and wherein, in the installation position of the gauging crosspiece (6), the first stop surface (611) and the second stop surface (621) are in abutment against the respective upright (2) of the pair of uprights, respectively.

8. Apparatus (1) according to any one of the preceding claims, wherein each upright (2) comprises:
- an abutment wall (23), including an outside surface (231) which, in use, faces towards the wall (P), and an inside surface (232), opposite to the outside surface (231);
 - a first side wall (24) and a second side wall (25), perpendicular to the abutment wall (23),

wherein each upright (2) comprises a guide (233), elongated along the longitudinal direction (L) and made on the outside surface (231), wherein the apparatus comprises a fastening plate (7), including a guide portion (71), located inside the guide (233) and a fastening portion (72), extending from the guide portion (71) along a direction perpendicular to the normal direction (N), wherein the fastening plate (7) and the guide (233) define the second connecting elements (4), wherein said fastening plate (7) comprises a positioning configuration, in which the fastening plate (7) is movable inside the guide (233) along the longitudinal direction (L) and in which the fastening portion (72) is oriented along the longitudinal direction (L), and a locked configuration, in which the fastening portion (72) is oriented along the transverse direction (T) and the fastening plate (7) is prevented from sliding inside the guide (233) by the fastening portion (72) rotating relative to the guide portion (71).

9. A sunshade system fixed or fixable in proximity to an opening (A) comprising:

- an apparatus (1) for mounting said sunshade (10) according to any one of the preceding claims;
- a sunshade (10) comprising a plurality of slats (12), each rotatable about a longitudinal axis thereof and having a first and a second end that are operatively coupled to a pair of guides (11) which are configured to guide the slats (12) along a direction of movement, each of said guides (11) being stably applied to one of said uprights (2) on the inside of the slideway.

10. A sunshade monobloc adapted to be fixed to a wall (P) in proximity to an opening (A), comprising:

- an apparatus (1) for mounting said sunshade (10) according to any one of the preceding claims 1 to 8;
- a sunshade (10) comprising a plurality of slats (12), each rotatable about the longitudinal axis thereof and having a first and a second end that are operatively coupled to a pair of guides (11) which are configured to guide the slats (12) along a direction of movement, each of said guides (11) being stably applied to one of the uprights (2) on the inside of the slideway;
- a movement apparatus for moving said sunshade (10) so it closes and/or opens said opening (A);
- a containing body defining a containing compartment for at least partly housing said sun-

shade (10), said apparatus (1) and said movement apparatus.

11. A method for installing a sunshade (10) so it at least partly closes an opening (A) in a wall, wherein the opening (A) defines a first mounting face (F1) and a second mounting face (F2), spaced apart along a normal direction (N), the method comprising the following steps:

- providing a sunshade (10) comprising a plurality of slats (12), each having a first and a second end, which are operatively coupled to a pair of guides (11);
- providing a pair of uprights (2), each elongated along a longitudinal direction (L), perpendicular to the normal direction (N) and including a respective first fixing profile (21) and a second fixing profile (22), spaced apart along a transverse direction (T) perpendicular to the longitudinal direction (L) and to the normal direction (N);
- connecting the guides (11) of the sunshade (10) to the uprights (2) by means of first connecting elements (3);
- connecting the pair of uprights (2) to the first mounting face (F1) and to the second mounting face (F2), respectively, by means of second connecting elements (4);

for each upright (2), providing a first profile bar (5A), elongated along the longitudinal direction (L) and including a respective first coupling member (51), and a second profile bar (5B), elongated along the longitudinal direction (L) and including a respective second coupling member (52);

- for each upright (2), fixing the first coupling member (51) to the first fixing profile (21) of the corresponding upright (2);
- for each upright (2), fixing the second coupling member (52) to the second fixing profile (22) of the corresponding upright (2);
- for each upright (2), moving the first profile bar (5A) and/or the second profile bar (5B) relative to the corresponding upright (2) by relative movement between the first coupling member (51) inside the first fixing profile (21) and the second coupling member (52) inside the second fixing profile (22), along an adjustment direction (R), having at least one component along the normal direction (N).

12. A method according to claim 11, wherein the first profile bar (5A) comprises a first abutment wall (53), including a respective contact surface (531), which faces towards the wall (P) when the first profile bar (5A) is inserted into the respective upright (2), and wherein the second profile bar (5A) comprises a

second abutment wall (54), including a respective contact surface (541), which faces towards the wall (P) when the second profile bar (5B) is inserted into the respective upright (2), wherein the method comprises a step of moving the first profile bar (5A) and the second profile bar (5B) relative to the respective upright (2) until the respective contact surface (531, 541) is parallel to the wall (P).

13. A method according to claim 11 or 12, wherein each upright (2) extends longitudinally from a first end (2A) and a second end (2B), in proximity to the ground when the upright is fixed to the wall (P), and wherein the method comprises, for each upright (2), a step of connecting a respective bottom cap to the second end (2B) of the respective upright (2).

14. A method according to any one of claims 11 to 13, comprising the following steps:

- providing at least one gauging crosspiece (6), elongated along a respective axis between a first end (6A) and a second end (6B) and comprising: a first fixing pin (61), located at the first end (6A); a second fixing pin (62), located at the second end (6B); a body (63), interposed along the axis of the gauging crosspiece (6) between the first fixing pin (61) and the second fixing pin (62);
- positioning the gauging crosspiece (6) at an installation position, comprising the following steps:

first insertion of the first fixing pin (61) into the first or the second fixing profile (21, 22) of an upright (2) of said pair of uprights, second insertion of the second fixing pin (62) into the first or the second fixing profile (21, 22) of the other upright (2) of said pair of uprights,

- removing the gauging crosspiece (6) from the installation position, comprising the following steps:

first extraction of the first fixing pin (61) from the first or the second fixing profile (21, 22) of one upright (2) of said pair of uprights, second extraction of the second fixing pin (62) from the first or the second fixing profile (21, 22) of the other upright (2) of said pair of uprights.

and the body (63), and a second stop surface (621), perpendicular to the axis of the gauging crosspiece (6) and interposed between the second fixing pin (62) and the body (63), and wherein, in the steps of first and second insertion, the first stop surface (611) and the second stop surface (621) are brought into abutment against the respective upright (2) of the pair of uprights, respectively.

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Fig.1

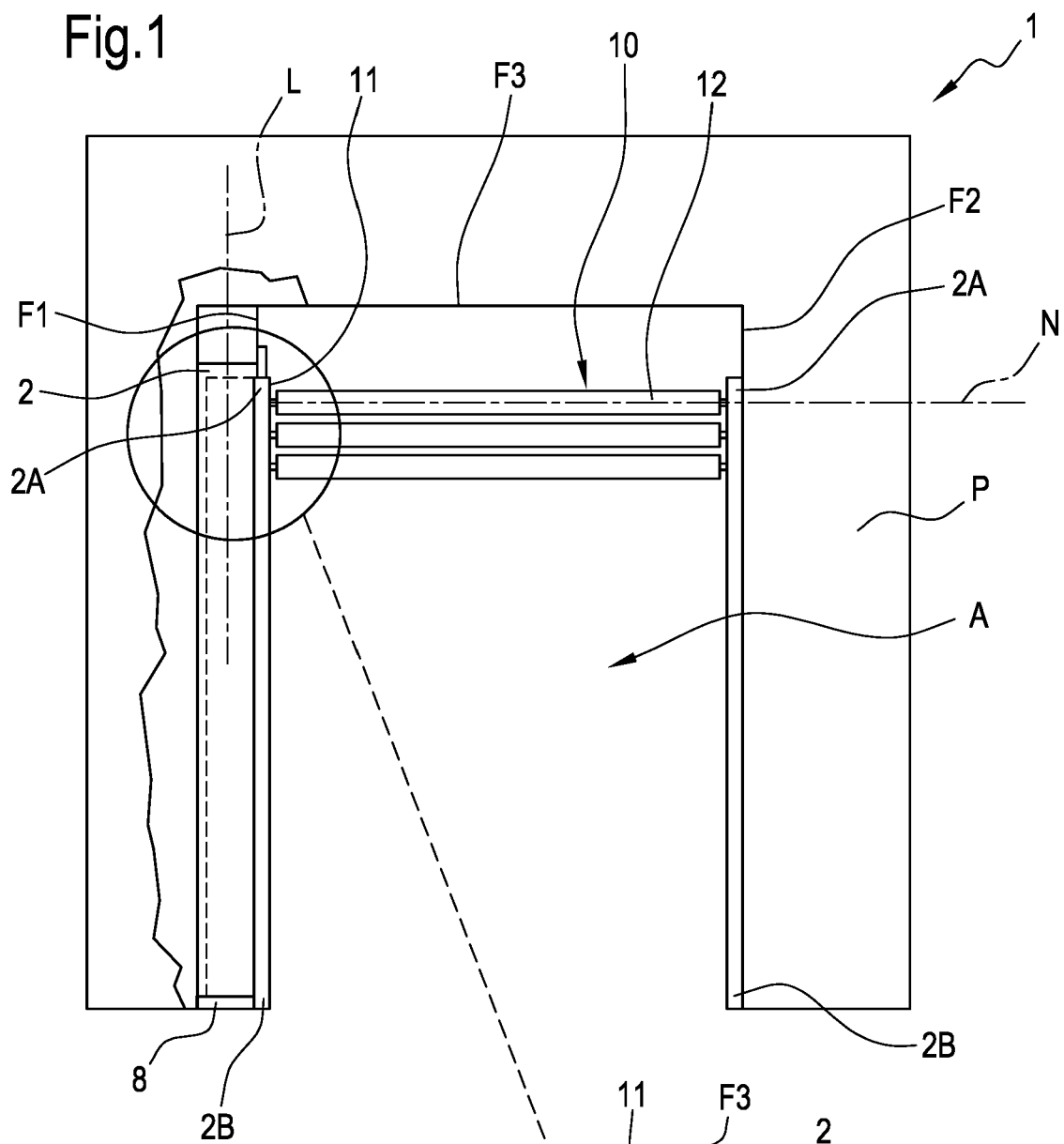
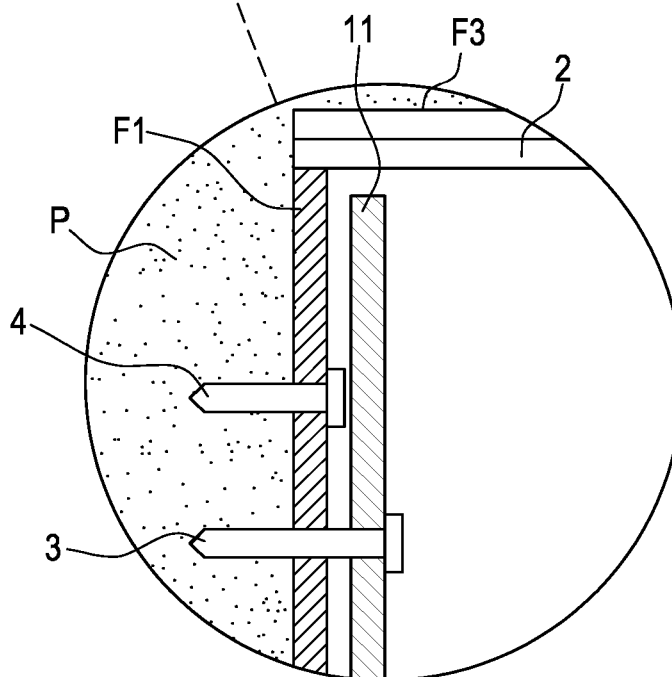


Fig.1A



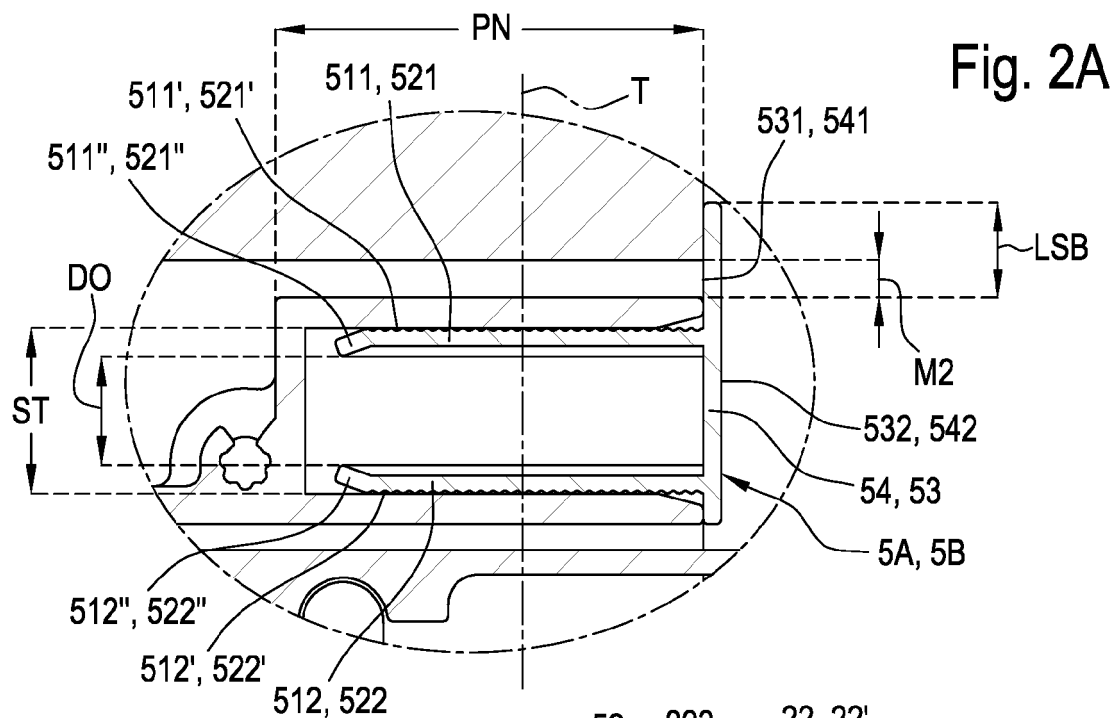


Fig. 2

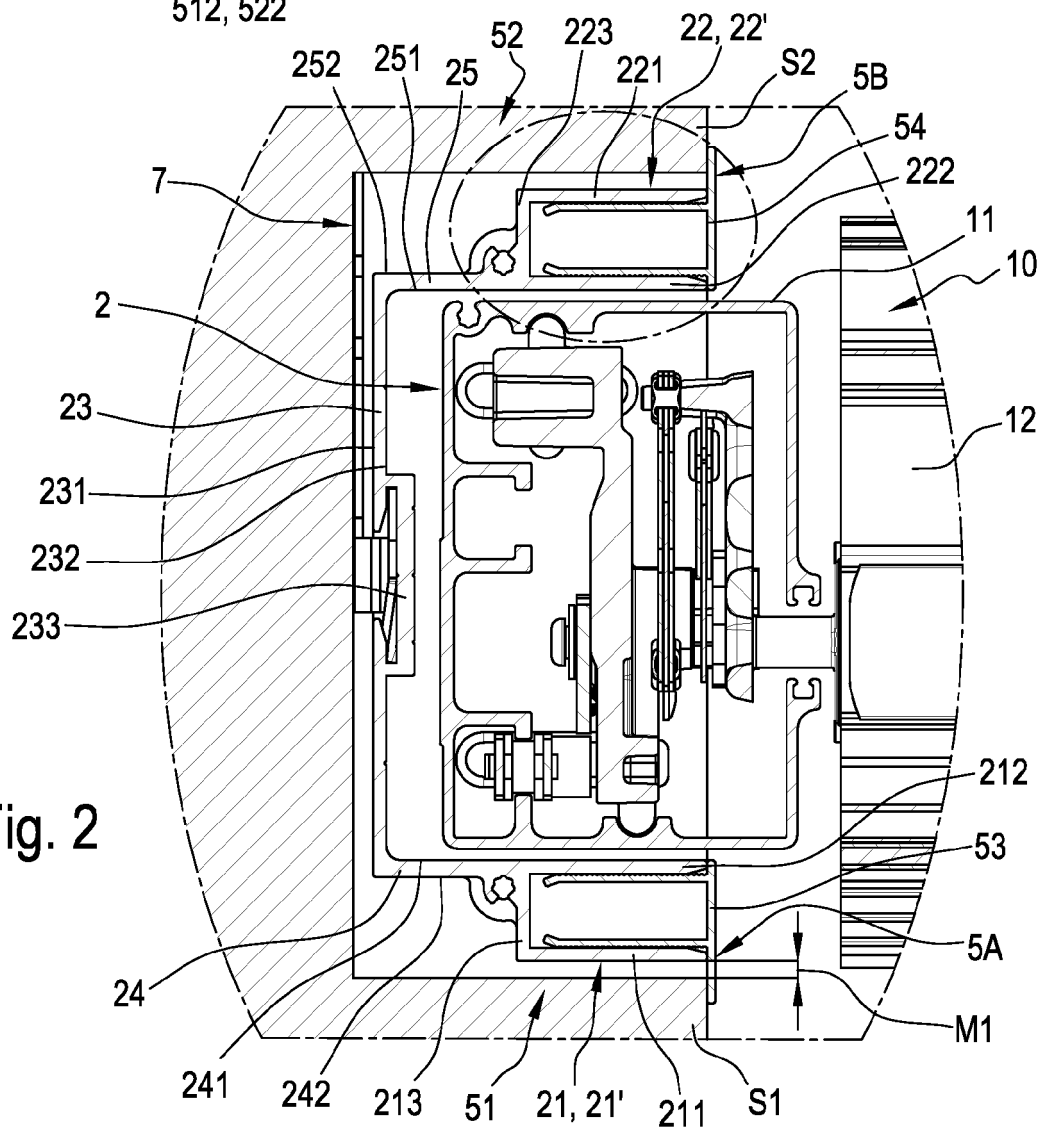


Fig. 3

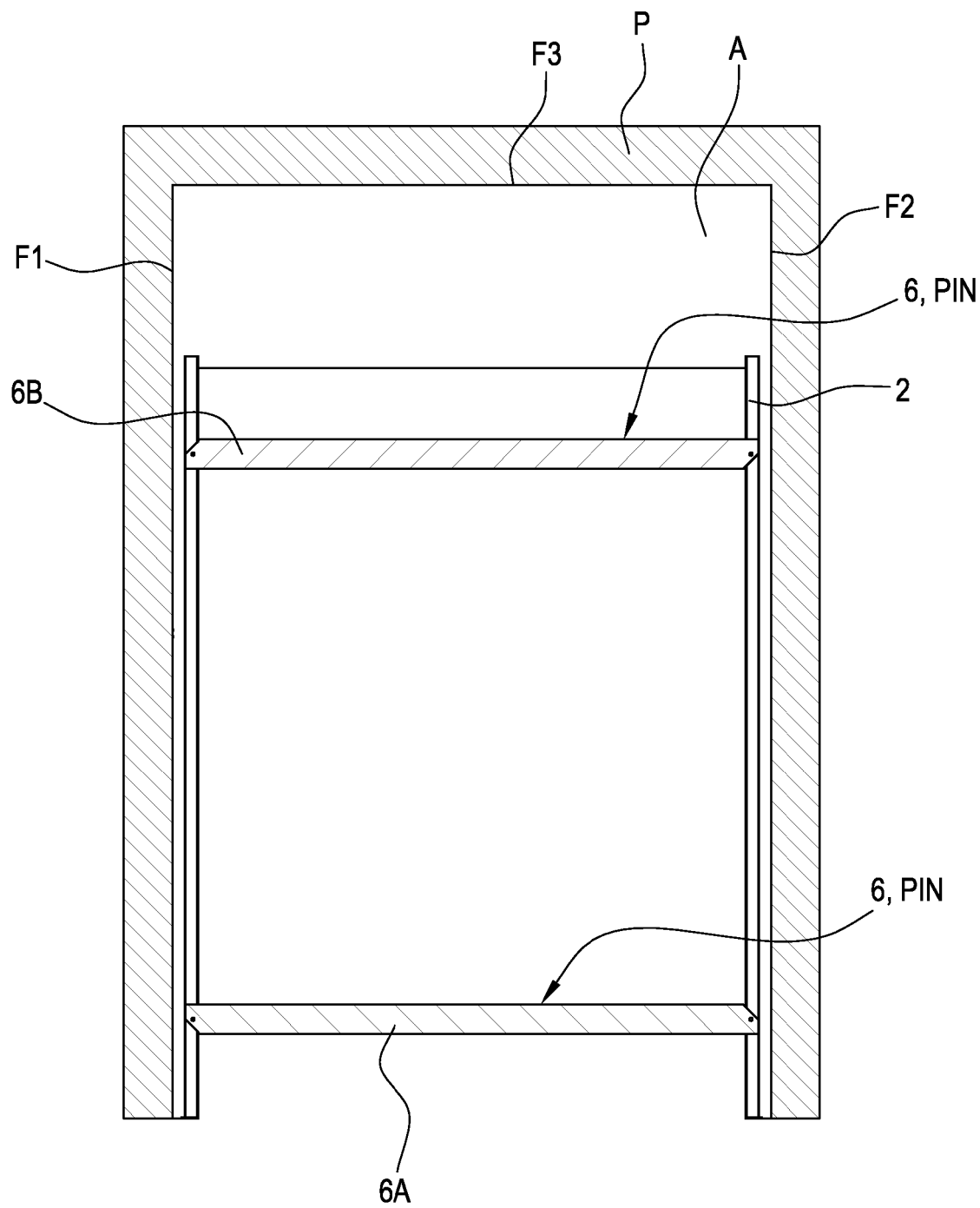


Fig. 4

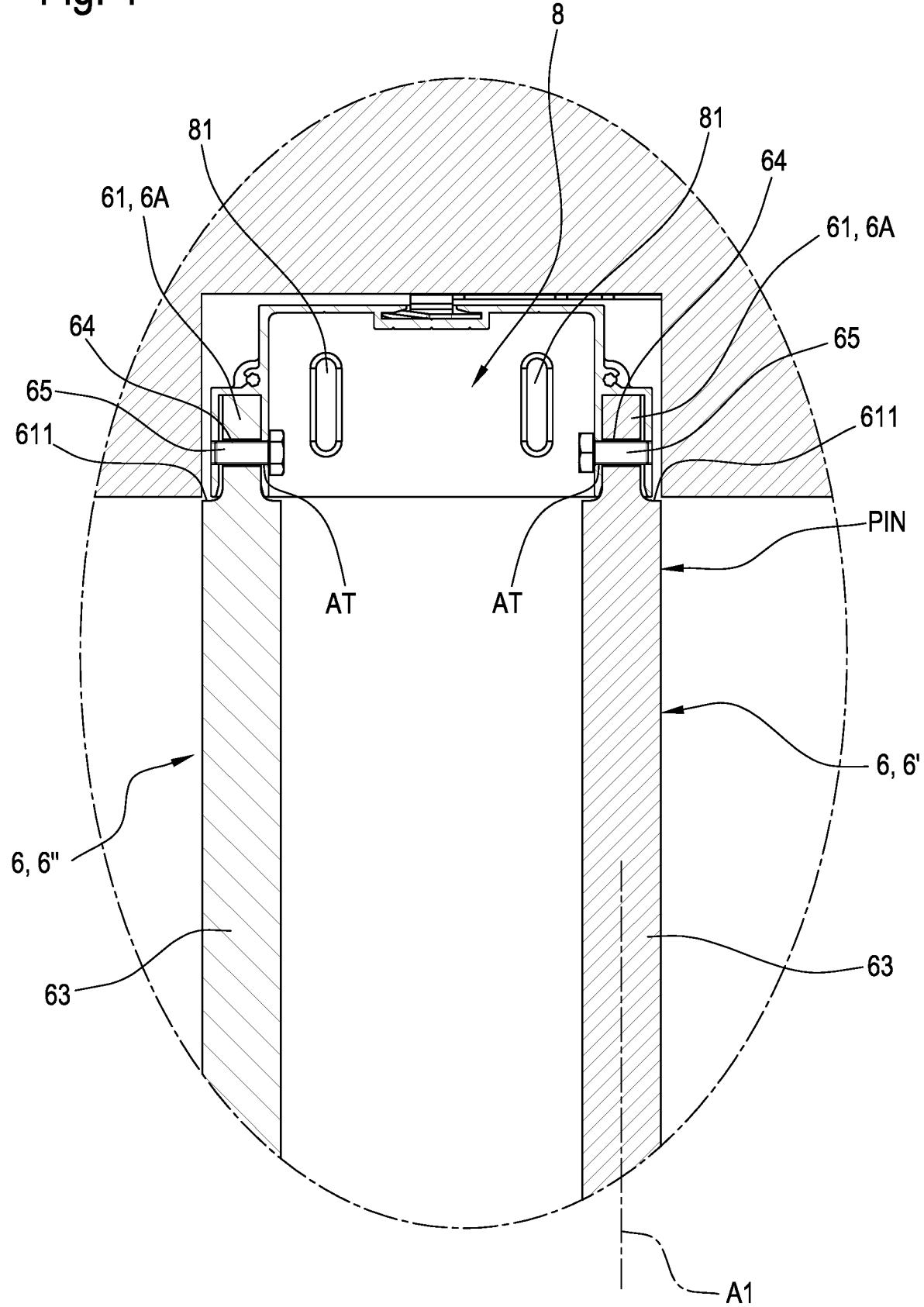


Fig. 5A

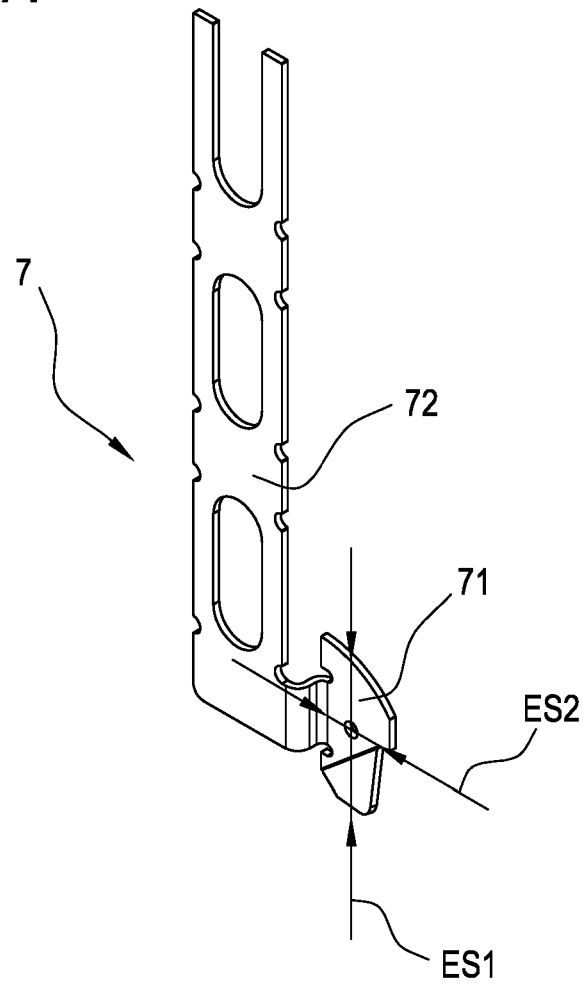
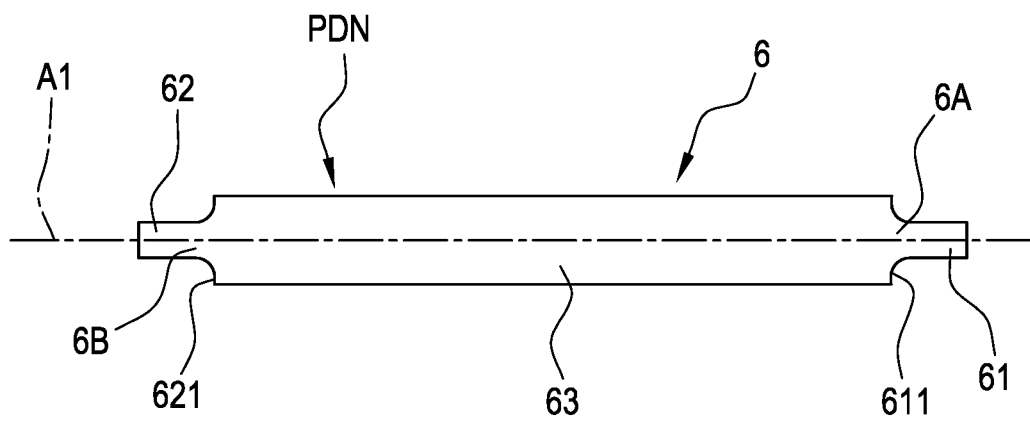


Fig. 5B





EUROPEAN SEARCH REPORT

Application Number

EP 24 21 2959

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	JP H03 15993 U (BUNKA SCHUTTER CO. LTD) 18 February 1991 (1991-02-18) * figure 6 * * page 1, lines 5, 10-15 * * page 4, line 1 - line 4 * -----	1-15	INV. E06B9/06 E06B9/302 E06B9/327
			TECHNICAL FIELDS SEARCHED (IPC)
			E06B
The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
Munich		4 December 2024	Cornu, Olivier
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- IT 102021000029378 [0006]
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