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(54) **Anchoring device, particularly for doors**

(57) An anchoring device (1), particularly for doors comprising a jamb (2), composed of two vertical posts (3), which can be arranged against an optional subframe (7), and a cross-member and at least two joint coverings (4a, 4b), characterized in that it is constituted by a rigid insert (8), which can be inserted at a first seat (12) provided along part of the thickness of one of the two joint coverings (4a, 4b) so as to affect a second seat (14) for accommodating a hinge (13), the hinge being associable, by way of adapted first screws (18), with the rigid insert (8), and in that it is constituted by a rigid profile (20), which can be interposed, with the interposition of at least one spacer (21), between the subframe (7) and the jamb, the rigid profile (20) having one or more tabs (22) which protrude in the direction of one of the posts (3) and being associable with the subframe (7).

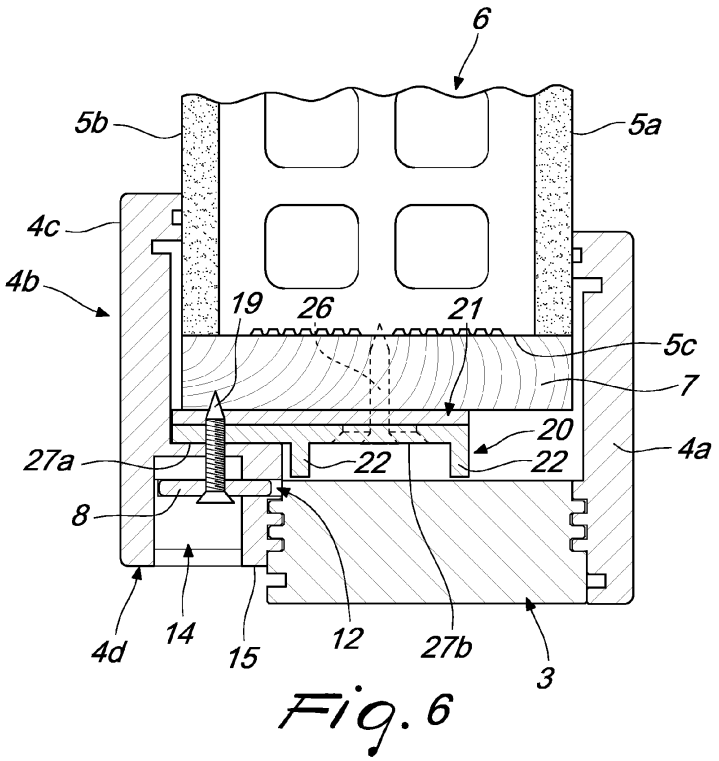

Fig. 6

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Description

[0001] The present application relates to an anchoring device, particularly for doors.

[0002] Nowadays the provision of doors involves obtaining a jamb, which is composed of two vertical posts and a cross-member, and which subsequently can be arranged against a subframe that in turn was previously installed in a compartment in which the door is to be hung.

[0003] The door leaf (or the door) is joined to the jamb, specifically to the post on the hinge side, by means of concealed hinges.

[0004] The jamb is usually anchored to the subframe by way of screws or spikes.

[0005] Such method of provision ensures that all the weight of the door leaf and the forces that are created during its movement are borne by the screws that fix the hinges to the jamb, with consequent subsequent settling which alters the functionality of the door.

[0006] The weight of the door leaf varies according to the size, type, model, and the material of which it is made, and it increases further if for example a glass pane is associated with the door leaf.

[0007] During installation, furthermore, in order to seek to prevent or limit the settling to which a door is usually subject in the first months of use, it can be possible to try to adjust the hinges to hold the door leaf slightly more raised in the lower part on the "handle side" so as to compensate the gradual lowering that will manifest over time.

[0008] Furthermore, for particularly heavy door leaves, additional hinges must necessarily be installed which make it possible to distribute the weight thereof more evenly over the jamb and at the same time further increase the overall cost of the door.

[0009] Confirmation that slight settling still occurs can be had when, approximately 6 months after installation, a careful eye can note that the door leaf has undergone a slight lowering on the handle side owing to the hanging and the actual operation of the door, given that the movable weights must find their normal balance at the points of movement.

[0010] The hinges thus achieve their equilibrium by placing the upper hinges under traction and the lower hinges under compression.

[0011] In some cases, if the lowering has been greater than expected, it is necessary to intervene further in order to try to correct this slight irregularity.

[0012] In the known art, furthermore, the wooden jamb is fixed directly to the subframe, usually by way of screws or spikes or polyurethane foam.

[0013] During this step, the installation technician is required to scrupulously abide by a number of contrivances in order to ensure the operation of the door and in order to achieve a correct installation, with consequent increase of the installation time and with the possibility of making errors in any case, which presage possible problems that could arise over time.

[0014] The principal contrivances that the installation of a door can require are thus many in number, such as centering the jamb by width and depth with respect to the subframe, creating a slight inclination of the door leaf with respect to the floor in order to obtain, in the underlying part, more air on the handle side (thus compensating any settling over time), verifying that there is no twisting in the cross-member (i.e. it is necessary to sight the door leaf and the jamb in order to achieve a perfect closure that rests against the gasket), and distributing air evenly between the jamb and the door leaf.

[0015] The aim of the present invention is to solve the above mentioned technical problems, eliminating the drawbacks in the cited known art, by providing a device that makes it possible to achieve an optimal installation of the door or door leaf irrespective of the weight that the latter may have.

[0016] Within this aim, an object of the invention is to provide a device that makes it possible to carry out, without particular contrivances and without intervening in the adjustment of the hinges, the installation of the door leaf in a rapid and optimal manner.

[0017] Another object of the invention is to enable the installation of particularly heavy door leaves without resorting to the use of additional hinges.

[0018] Another object of the invention is to enable the installation of a door leaf while enabling the latter to remain in a stable position over time.

[0019] Another object of the invention is to enable the installation technician to achieve the optimal and correct installation of the door leaf or door in a short time without having to adopt particular contrivances.

[0020] Another object of the invention is to provide a device that is structurally simple and low cost and can be made with the usual conventional plants.

[0021] This aim and these and other objects which will become better apparent hereinafter are achieved by an anchoring device, particularly for doors comprising a jamb, composed of two vertical posts, which can be arranged against an optional subframe, and a cross-member and at least two joint coverings, **characterized in that** it is constituted by a rigid insert, which can be inserted at a first seat provided along part of the thickness of one of said two joint coverings so as to affect a second seat for accommodating a hinge, said hinge being associable, by way of adapted first screws, with said rigid insert, and in that it is constituted by a rigid profile, which can be interposed, with the interposition of at least one spacer, between said subframe and said jamb, said rigid profile having one or more tabs which protrude in the direction of one of said posts and being associable with said subframe.

[0022] Further characteristics and advantages of the invention will become better apparent from the detailed description of a particular, but not exclusive, embodiment, illustrated by way of non-limiting example in the accompanying drawings, wherein:

Figure 1 is a first partially sectional perspective view of a device according to the invention;
Figure 2 is an exploded view of the device;
Figure 3 is a second partially sectional perspective view of the device according to the invention;
Figure 4 is a view of a detail of the device according to the invention;
Figure 5 is a partially sectional side view of the device according to the invention;
Figure 6 is a sectional view taken along the line VI-VI of Figure 5;
Figure 7 is a front view of the rigid profile applied to the subframe;
Figure 8 is a sectional view taken along the line VIII-VIII of Figure 7;
Figure 9 is a sectional view taken along the line IX-IX of Figure 7;
Figure 10 is a sectional view taken along the line X-X of Figure 1;
Figures 11 to 14 are views of a further embodiment of the device according to the invention.

[0023] In the embodiments illustrated, individual characteristics shown in relation to specific examples may in reality be interchanged with other, different characteristics, existing in other embodiments.

[0024] With reference to the figures, the reference numeral 1 designates an anchoring device, particularly for door leaves or doors (not shown) comprising a jamb 2 which is composed of two vertical posts 3 and a crossmember (not shown).

[0025] At least two joint coverings 4a, 4b are associated laterally with the post 3 and connect the post 3 to the faces 5a, 5b of a wall 6.

[0026] An optional subframe 7 is associated with the surface 5c of the wall 6 that is directed toward the post 3.

[0027] The joint covering 4b is L-shaped so as to form a first wing 4c and a second wing 4d, the latter being arranged on a plane which is parallel to the surface 5c of the wall 6.

[0028] The device 1 is constituted by a rigid insert 8, such as a metal lamina, which in plan view has a polygonal shape, preferably the shape of an isosceles trapezoid so as to form a longer parallel side 9 and a shorter parallel side 10; a recess 11 is provided on the shorter parallel side 10, approximately centrally.

[0029] The rigid insert 8 is insertable at a first seat 12 provided along part of the thickness of the free end of the second wing 4d of the joint covering 4b.

[0030] This joint covering 4b is furthermore adapted to accommodate one of the two bodies 13a, 13b of an adapted hinge 13 at a second seat 14 provided on the surface 15 thereof that is directed away from the subframe 7.

[0031] The second seat 14 is thus arranged at right angles to the first seat 12 and has such a depth as to mutually connect such first and second seats.

[0032] The body 13a of the hinge 13 can be accommodated furthermore at the recess 11 provided on the rigid insert 8 once the latter has been inserted into the first seat 12.

[0033] At the rigid insert 8 there is, in a region which is adjacent to the recess 11, a pair of first holes 16a, 16b and of second holes 17a, 17b respectively for first screws 18 and second screws 19.

[0034] The first screws 18 are adapted to allow the connection of the bodies of the hinge 13 to the rigid insert 8, while the second screws 19 are adapted to lock the rigid insert 8 at the joint covering 4b.

[0035] The device 1 is further constituted by a rigid profile (which acts as an assembly guide) designated with the reference numeral 20, which is plate-shaped and can be arranged, with the optional interposition of at least one spacer 21, between the subframe 7 and the jamb 3.

[0036] The rigid profile (or assembly guide) 20 has one or more tabs 22, mutually identical and suitably spaced, which protrude in the same direction as one of the posts 3.

[0037] Advantageously, at least one of the tabs 22 protrudes at a lateral end of the rigid profile 20.

[0038] The rigid profile 20, the function of which is to act as an assembly guide, is associable at the subframe 7 and has at least one pair of third holes 23a, 23b and a transverse slot 24, all of which are advantageously provided at the interspace between two of the tabs 22.

[0039] One or more slots or millings 25a, 25b are provided at the spacer 21, substantially at a distance approximately equal to the distance between the pairs of third holes, such slots or millings being obtained starting from a lateral edge of the spacer 21 and having a same inclination.

[0040] At the transverse slot 24 it is possible to arrange an adapted third screw 26 which is adapted to make it possible to level the rigid profile 20.

[0041] The use of the invention is the following: the transverse slot 24 is used to carry out a pre-fixing of the rigid profile 20 to the subframe 7; such first connection enables the rigid profile 20 to freely slide on the subframe 7 and its position to thus be adjusted.

[0042] Once the correct position of the rigid profile 20 is defined, by way of a normal spirit level, the assembly guide is fixed by inserting the third screws 26 into the third holes 23a, 23b.

[0043] With the rigid profile 20 thus installed, the jamb 2 is then installed.

[0044] Once the jamb 2 is installed, it is made integral with the rigid profile 20 by installing at least one of the second screws 19 in one of the second holes 17a, 17b; the second screw 19 will thus pass through the rigid insert 8 and the joint covering 4b and will be fixed at the rigid profile 20 at a flat region 27a and/or 27b of the rigid profile 20 that is adjacent to one of the tabs 22.

[0045] The fixing of the hinge 13 occurs by way of the first screws 18 which pass through the rigid insert 8 and the joint covering 4b.

[0046] The rigid profile 20, which is advantageously made of aluminum, creates a base for supporting the

jamb and gives the right distance to maintain so that the joint covering will be adequately supported on the wall.

[0047] In practice it has been found that the invention has fully achieved the intended aim and objects, a device having been obtained that makes it possible to achieve an optimal installation of the door or door leaf irrespective of the weight that the latter may have, the optimal and rapid installation being achievable without particular contrivances or ability on the part of the installation technician and without intervening in the adjustment of the hinges.

[0048] The stability of the door leaf over time is further achieved without resorting to the use of additional hinges.

[0049] In fact what is created, thanks to the presence of the rigid profile 20 and of the rigid insert 8, is a stable connection between jamb and hinges and furthermore there is an optimal distribution of the force exerted by the screws over a large surface and not at a specific point, as occurs with a traditional installation.

[0050] In conclusion, the following are obtained: a mechanically joined jamb, internal reinforcement in the profile on the hinge side, a greater weight distribution of the door leaf on the jamb, better and stronger anchoring of the hinges on the jamb with respect to fixing directly to the subframe as in the known art, simplification of the installation, better leveling of the door leaf because it is conditioned by the assembly guide which is stably prefixed and made level with the subframe, more uniform distribution of spaces and of air, a correct installation and hence a better guarantee of operation over the years, less settlement over time because the hinge, the rigid insert, the rigid profile, and the wall create a single body.

[0051] In a possible different embodiment, the subframe 7 can be omitted, achieving the related connections to the wall 6 by way of adapted means.

[0052] In Figures 11 to 14, another embodiment is shown in which a rigid insert 108, such as a metal lamina, is illustrated which has a quadrangular or rectangular shape in plan view, on a longitudinal side 109 of which a recess 111 can be provided, starting from the perimetric rim, which affects part of its thickness.

[0053] The rigid insert 108 is insertable at a first seat 112 provided along part of the thickness of the free end of the second wing 104d of the joint covering 104b.

[0054] Preferably the seat 112 is open in the direction of the rigid profile 120, the subframe 107 and the wall 106.

[0055] The second wing 104d of the joint covering 104b is further adapted to accommodate the body 113a of the hinge 113 at a second seat 114 provided on the surface 115 thereof that is directed away from the subframe 107.

[0056] The body 113a of the hinge 113 can be accommodated furthermore at the recess 111 provided on the rigid insert 108 once the latter has been inserted into the first seat 112.

[0057] The rigid insert 108 is coupled to the rigid profile 120 by way of the second screws 119 while the rigid profile 120 is coupled to the subframe 107 by way of third screws 126 in the absence of the spacer.

[0058] This solution also achieves the intended aim and objects, further making it possible to improve the fixing system by making it more practical, facilitating the mounting of the inserts, ensuring a higher precision of assembly and providing a better distribution of the weight that bears on the hinge and on the jamb.

[0059] Naturally the materials used as well as the dimensions of the individual components of the invention may be more relevant according to specific requirements.

[0060] The various means of achieving certain different functions certainly need not coexist only in the embodiment shown, but may be present in many embodiments, even if not shown.

[0061] The characteristics indicated above as advantageous, convenient or similar, may also be missing or be substituted by equivalent characteristics.

[0062] The disclosures in Italian Patent Application No. TV2012A000123 from which this application claims priority are incorporated herein by reference.

[0063] Where technical features mentioned in any claim are followed by reference signs, those reference signs have been included for the sole purpose of increasing the intelligibility of the claims and accordingly, such reference signs do not have any limiting effect on the interpretation of each element identified by way of example by such reference signs.

Claims

1. An anchoring device (1), particularly for doors comprising a jamb (2), composed of two vertical posts (3), which can be arranged against an optional subframe (7), and a cross-member and at least two joint coverings (4a, 4b), **characterized in that** it is constituted by a rigid insert (8), which can be inserted at a first seat (12) provided along part of the thickness of one of said two joint coverings (4a, 4b) so as to affect a second seat (14) for accommodating a hinge (13), said hinge being associable, by way of adapted first screws (18), with said rigid insert (8), and **in that** it is constituted by a rigid profile (20), which can be interposed, with the interposition of at least one spacer (21), between said subframe (7) and said jamb, said rigid profile (20) having one or more tabs (22) which protrude in the direction of one of said posts (3) and being associable with said subframe (7).

2. The device according to claim 1, **characterized in that** a pair of joint coverings (4a, 4b) are associated laterally with said post (3) and connect said post (3) to the faces (5a, 5b) of a wall (6), said subframe (7) being associated with the surface (5c) thereof that is directed toward said post (3), said joint covering (4b) being L-shaped so as to form a first wing (4c) and a second wing (4d), the latter being arranged on a plane which is parallel to said surface (5c) of said wall (6).

3. The device according to claim 1, **characterized in that** said rigid insert (8), in plan view, has a polygonal shape, preferably the shape of an isosceles trapezoid so as to form a longer parallel side (9) and a shorter parallel side (10), a recess (11) being provided on said shorter parallel side approximately centrally.

4. The device according to one or more of the preceding claims, **characterized in that** said rigid insert (8) can be inserted at a first seat (12) provided along part of the thickness of the free end of said second wing (4d) of said joint covering (4b), the latter being adapted to accommodate one of the two bodies (13a, 13b) of an adapted hinge (13) at a second seat (14) provided on the surface (15) thereof that is directed away from said subframe (7), said second seat (14) being arranged at right angles to said first seat (12) and having such a depth as to mutually connect said first and second seats (12, 14).

5. The device according to one or more of the preceding claims, **characterized in that** said body (13a) of said hinge (13) can be accommodated at said recess (11) provided on said rigid insert (8) once said insert has been inserted into said first seat (12), at said rigid insert (8) there being, in a region which is adjacent to said recess (11), a pair of first holes (16a, 16b) and of second holes (17a, 17b) respectively for first screws (18) and second screws (19).

6. The device according to one or more of the preceding claims, **characterized in that** said first screws (18) are adapted to allow the connection of said bodies (13a, 13b) of said hinge (13) to said rigid insert (8), while said second screws (19) are adapted to lock said rigid insert (8) at said joint covering (4b).

7. The device according to one or more of the preceding claims, **characterized in that** it is constituted by a rigid profile (20), which is plate-shaped and can be arranged, with the interposition of a spacer (21), between said subframe (7) and said jamb (3), and **in that** said rigid profile (20) acts as an assembly guide.

8. The device according to one or more of the preceding claims, **characterized in that** said rigid profile (20) has one or more suitably spaced tabs (22), which protrude in the same direction as one of said posts (3), at least one of said second screws (19), when installed, passing through said rigid insert (8), said joint covering (4b), and the flat region (27a, 27b) of said rigid profile (20) that is adjacent to one of said tabs (22).

9. The device according to one or more of the preceding claims, **characterized in that** said rigid profile (20) is associable at said subframe (7) and has at least one pair of third holes (23a, 23b) and a transverse slot (24) which are provided advantageously at a flat region (27a and/or 27b) of the interspace between two of said tabs (22).

10. The device according to one or more of the preceding claims, **characterized in that** one or more slots or millings (25a, 25b) are provided at said spacer (21), substantially at a distance approximately equal to the distance between said pairs of third holes, said slots or millings being obtained starting from a lateral edge of said spacer (21) and having, or not, a same inclination, it being possible at said transverse slot (24) to arrange an adapted third screw (26) which is adapted to make it possible to level said rigid profile (20).

11. The device according to one or more of the preceding claims, **characterized in that** at least one of said tabs (22) protrudes at a lateral end of said rigid profile (20).

12. The device according to one or more of the preceding claims, **characterized in that** said rigid insert (108) has a quadrangular or rectangular shape in plan view, on a longitudinal side (109) of which a recess (111) can be provided, starting from the perimetric rim, which affects part of its thickness, said rigid insert (108) being insertable at a first seat (112) provided along part of the thickness of the free end of the second wing (104d) of the joint covering (104b).

13. The device according to one or more of the preceding claims, **characterized in that** said seat (112) is open in the direction of said rigid profile (120), said subframe (107) and said wall (106), said second wing (104d) of said joint covering (104b) being adapted to accommodate the body (113a) of said hinge (113) at a second seat (114) provided on the surface (115) thereof that is directed away from said subframe (107).

14. The device according to one or more of the preceding claims, **characterized in that** said rigid insert (108) is coupled to said rigid profile (120) by way of the second screws (119) while said rigid profile (120) is coupled to said subframe (107) by way of third screws (126).

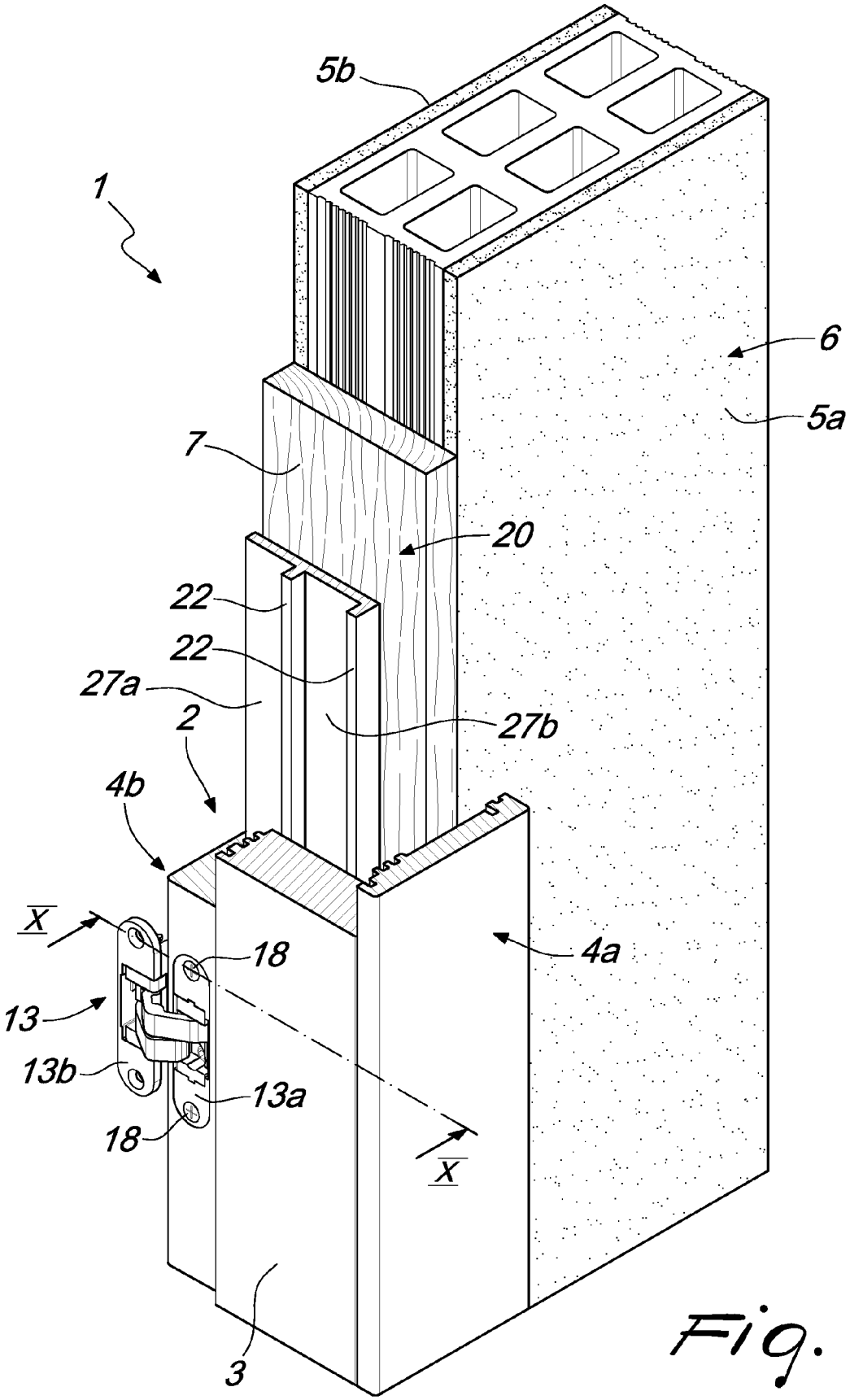
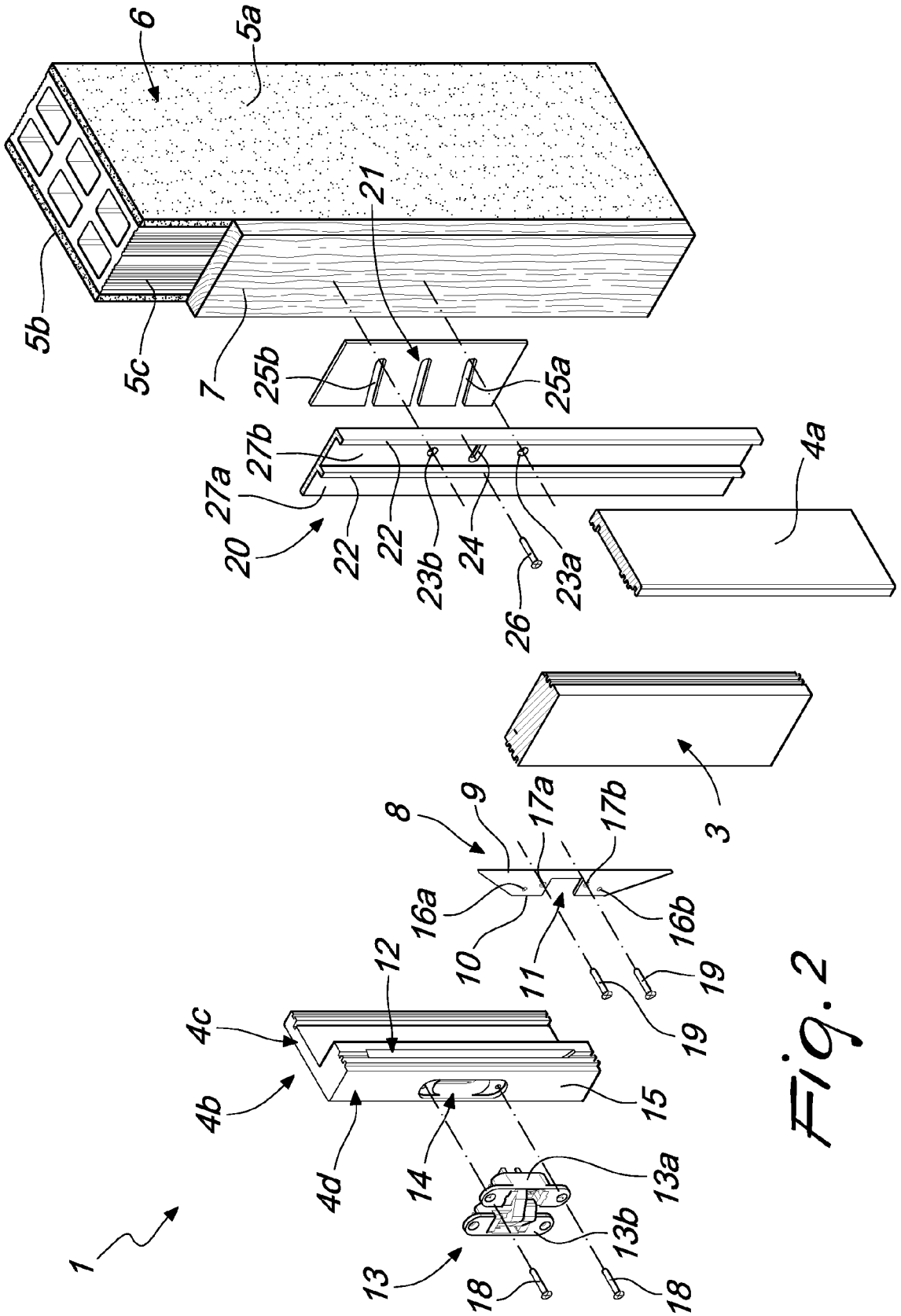


Fig. 1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17a
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Fig. 2

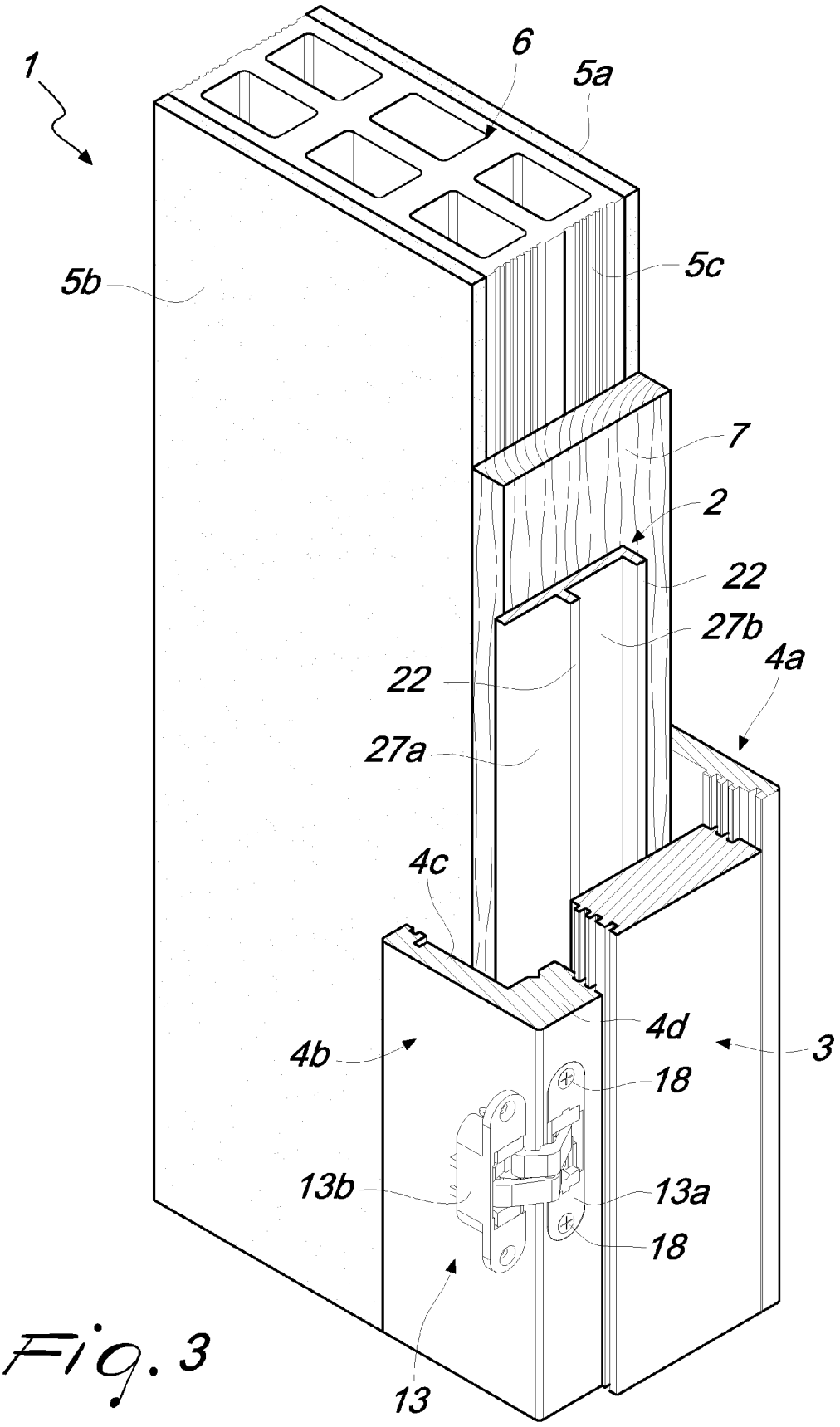


Fig. 3

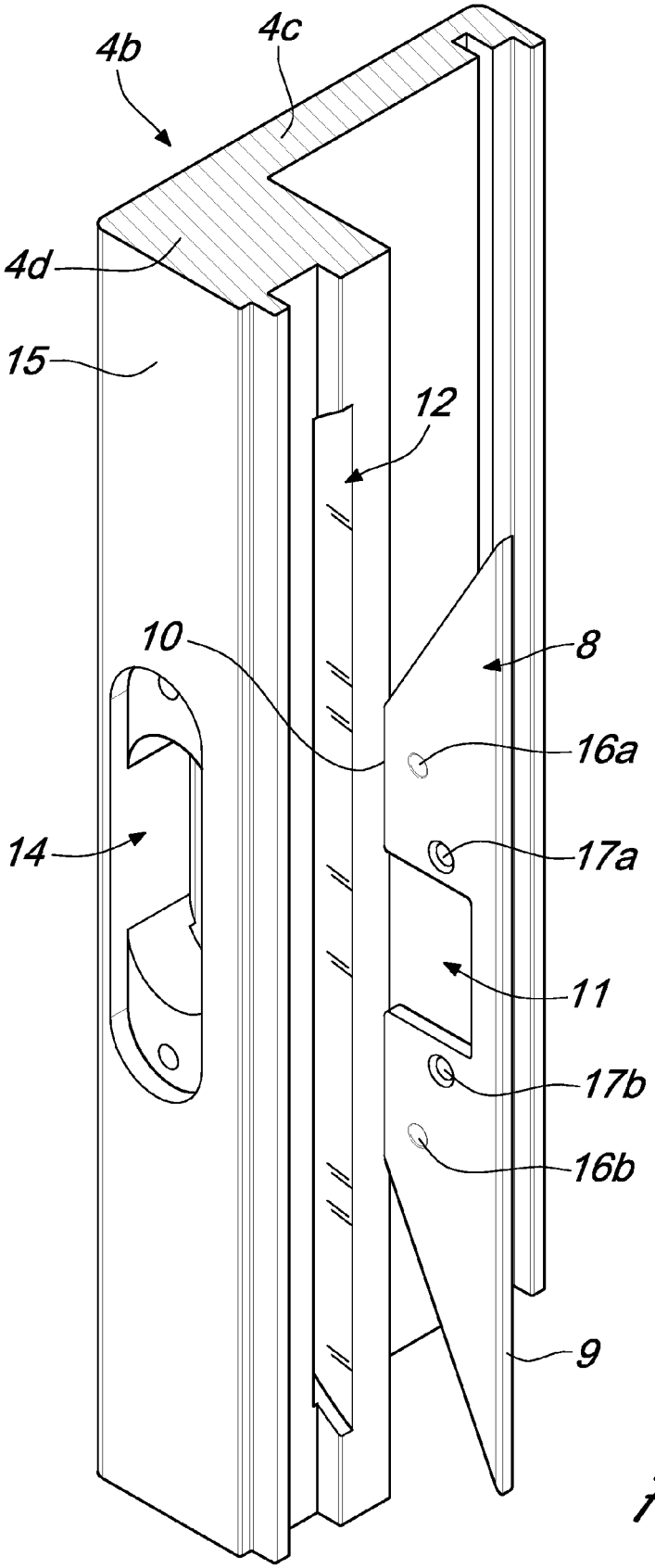
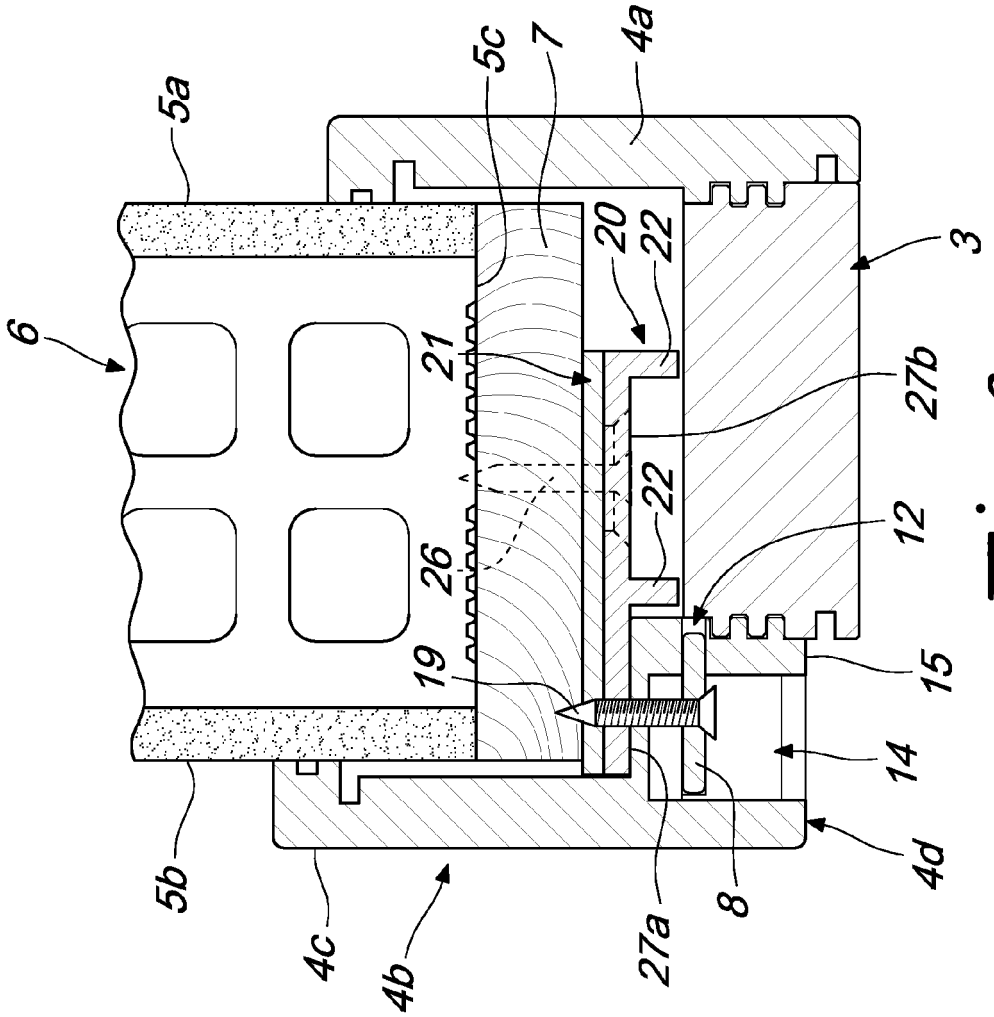


Fig. 4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4b
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Fig. 6

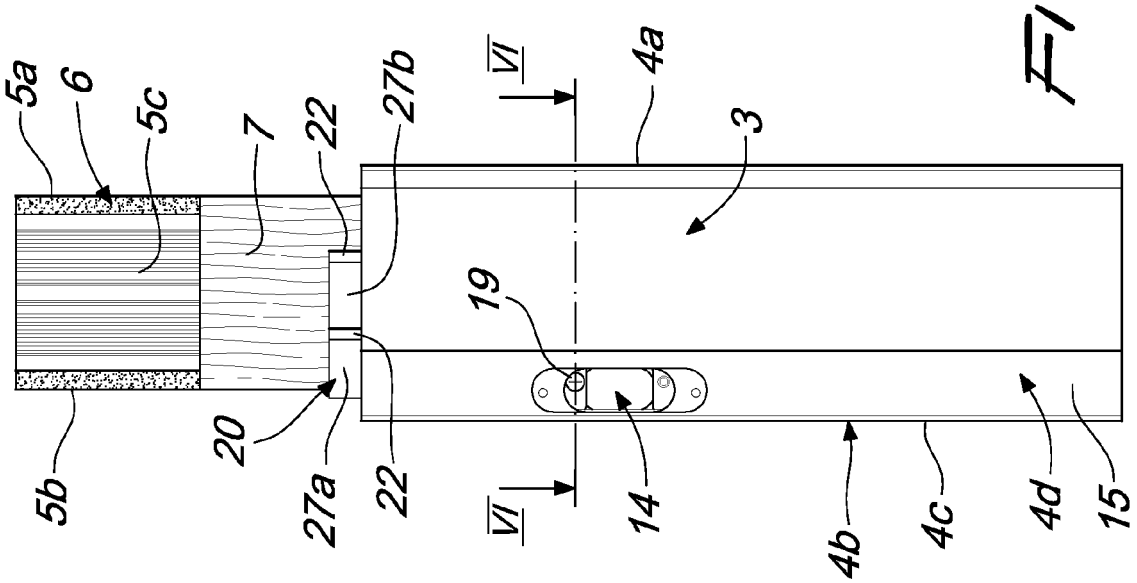
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Fig. 5

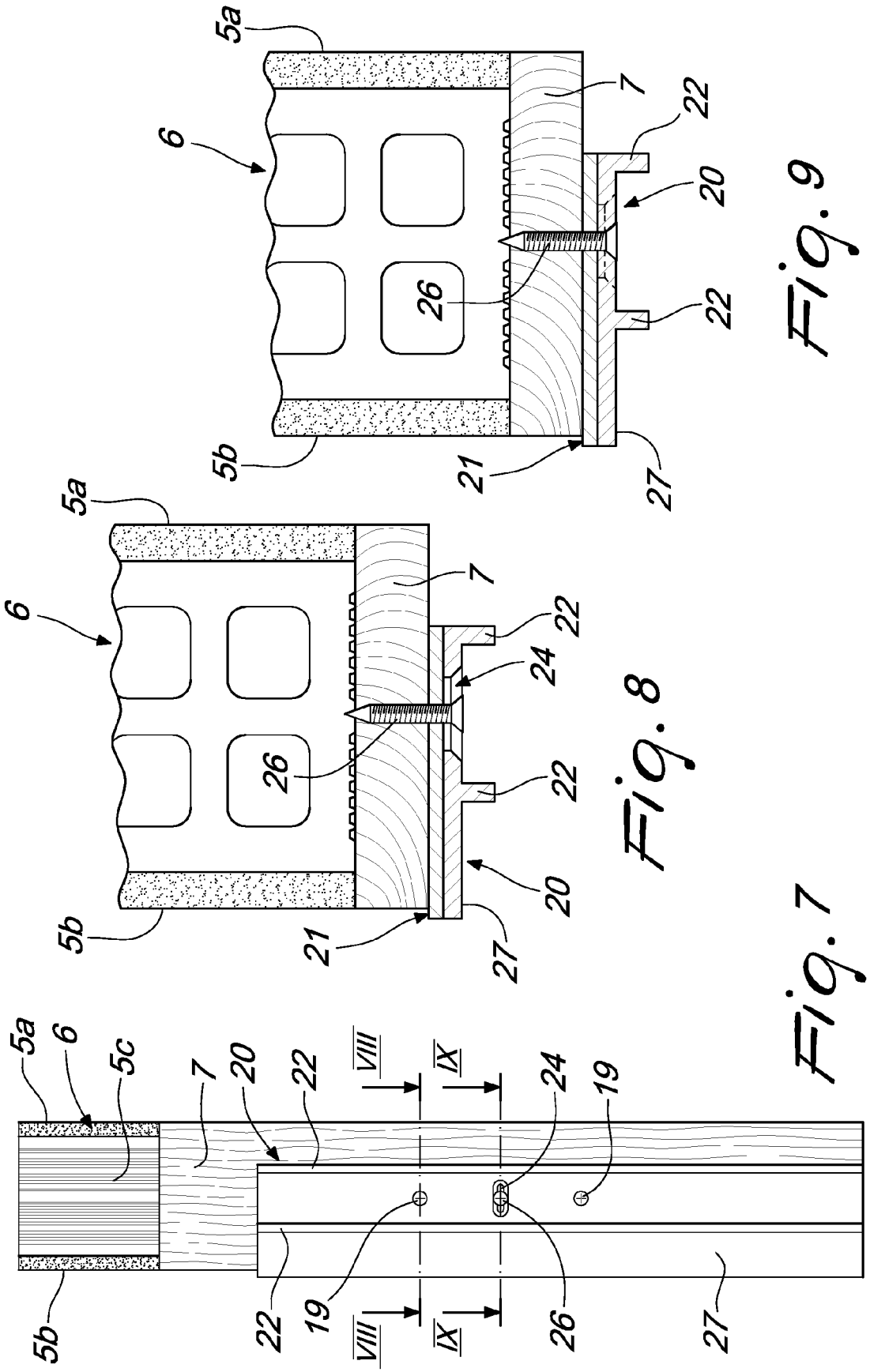


Fig. 7

Fig. 8

Fig. 9

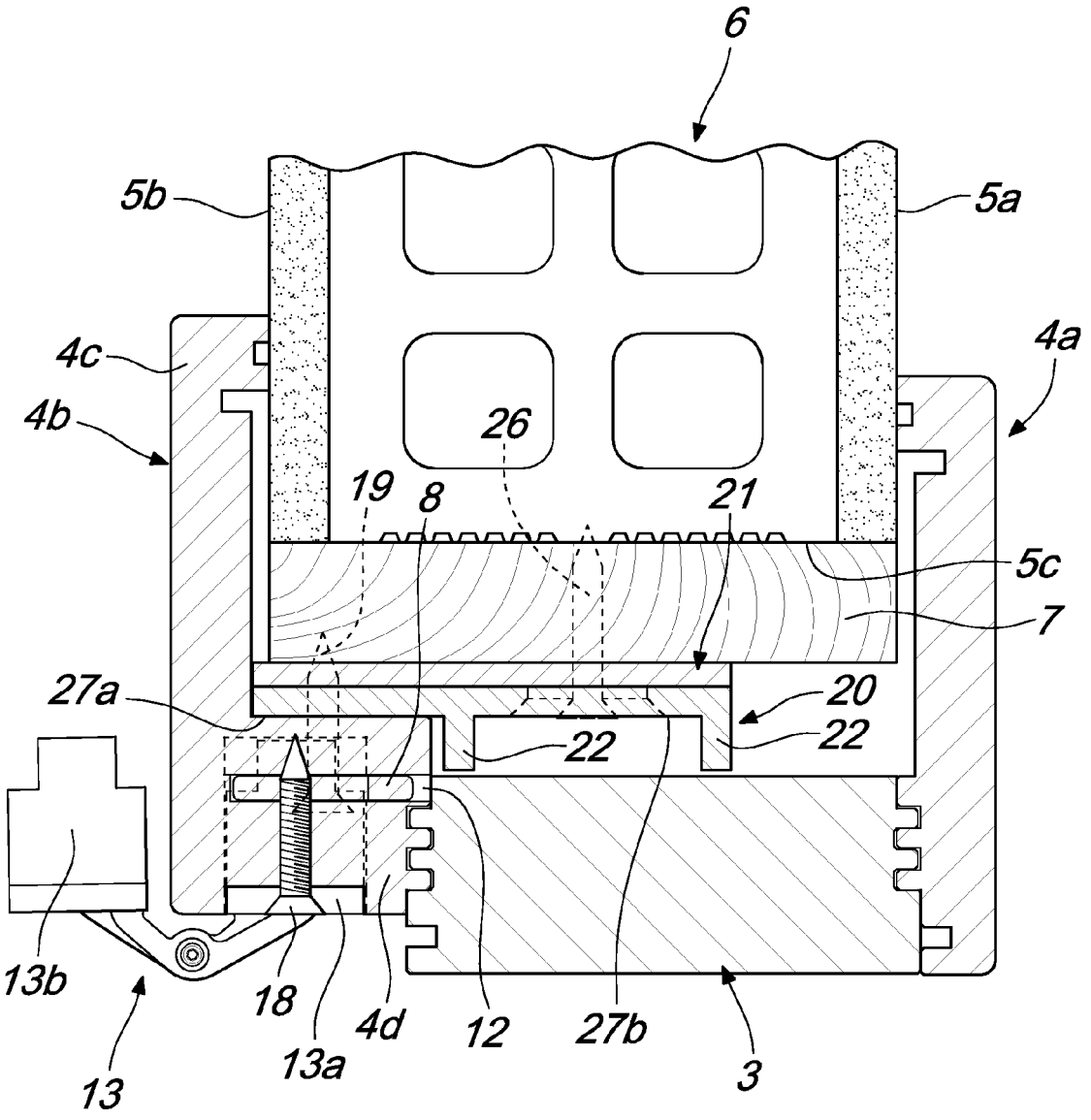
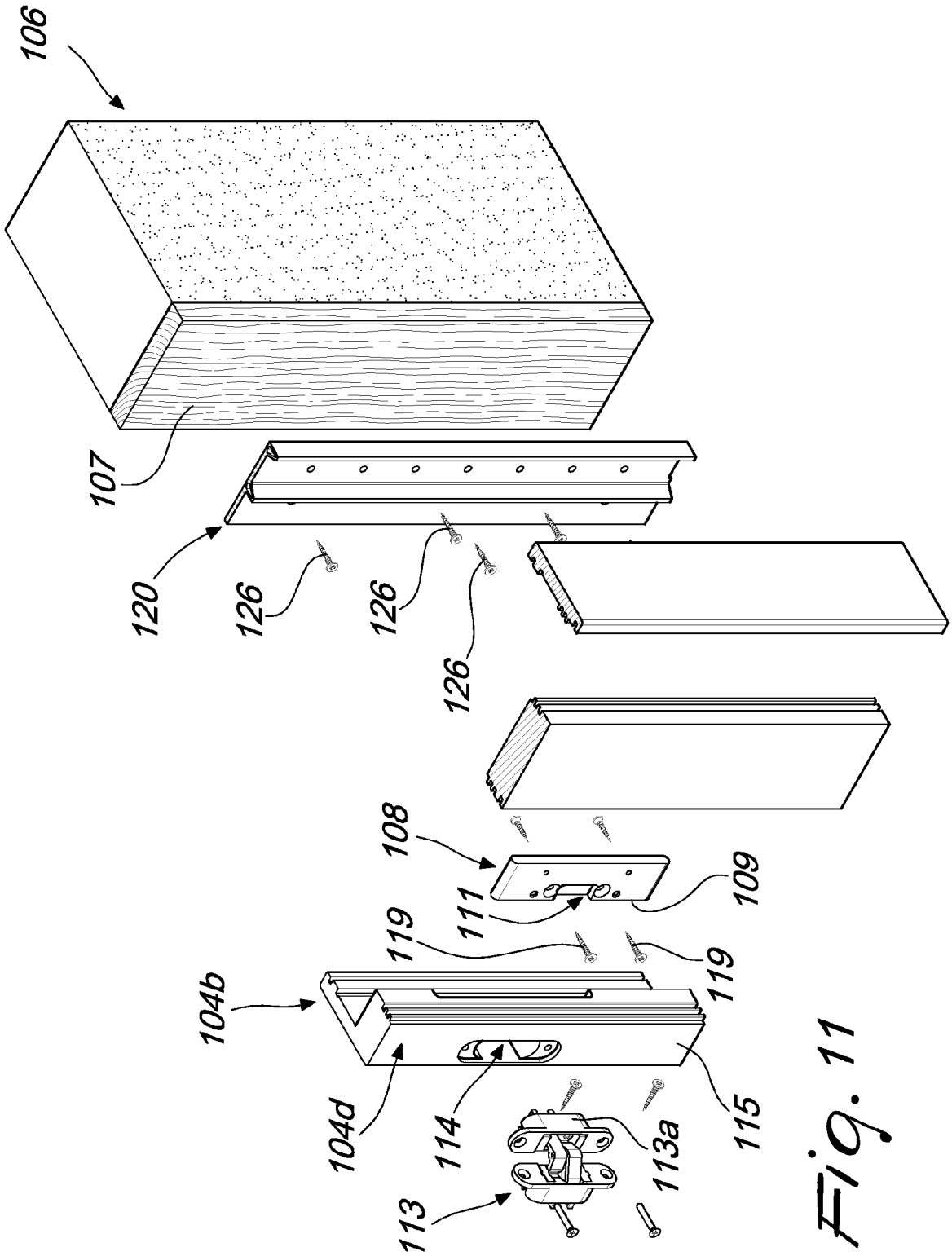


Fig. 10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104b
104d
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113a
115
113

Fig. 11

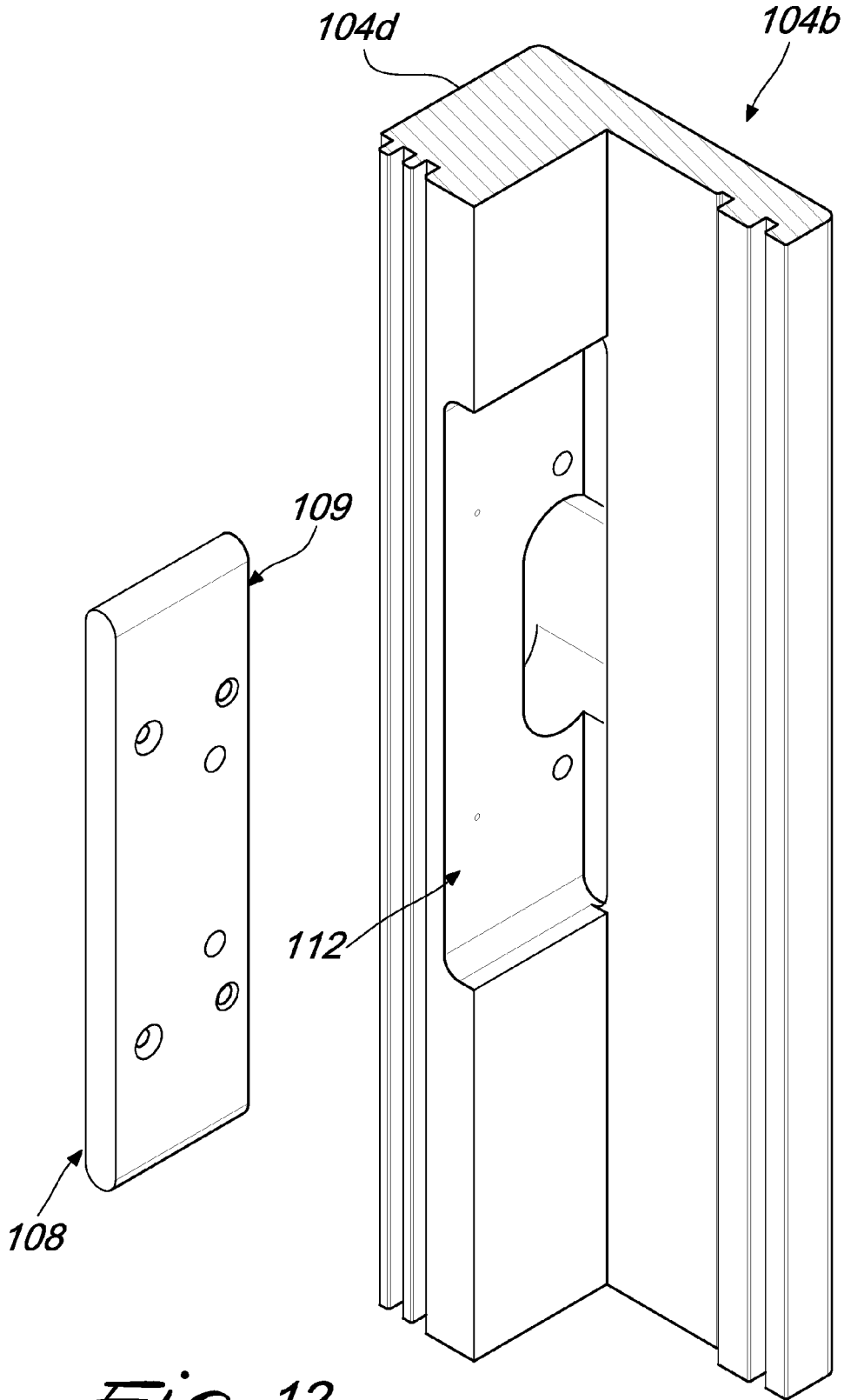

Fig. 12

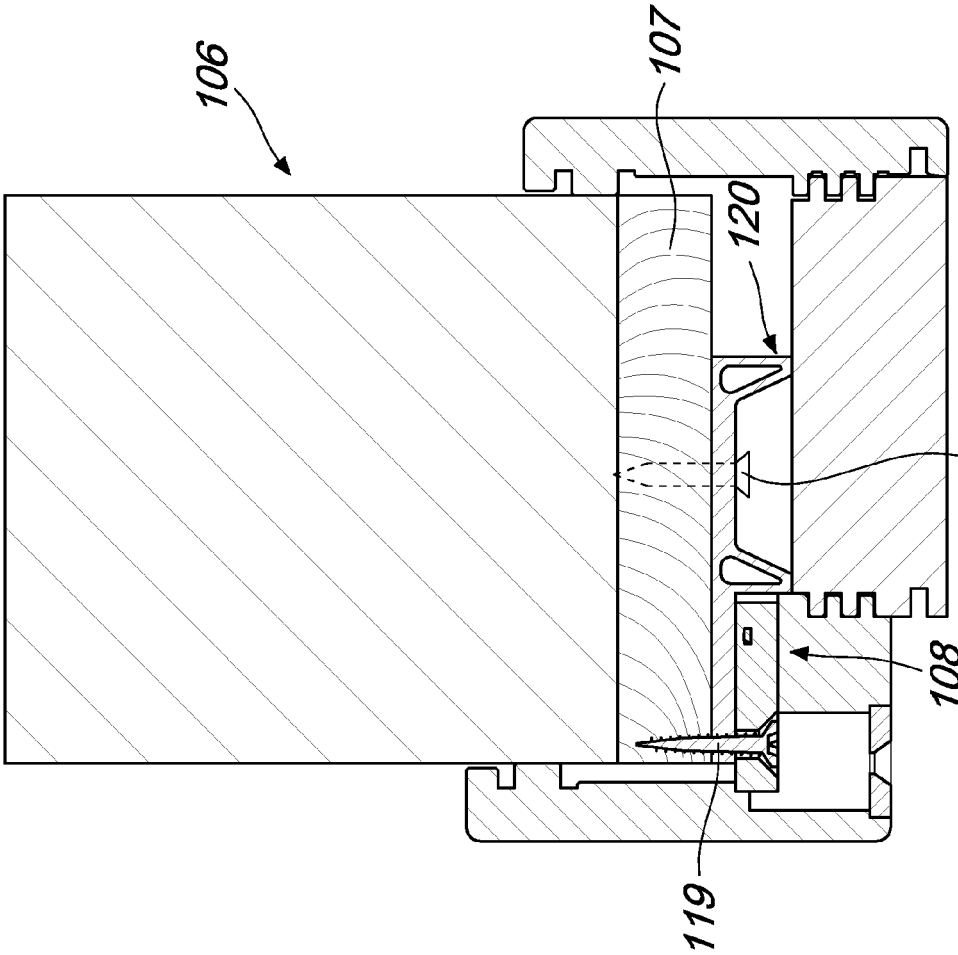

Fig. 14

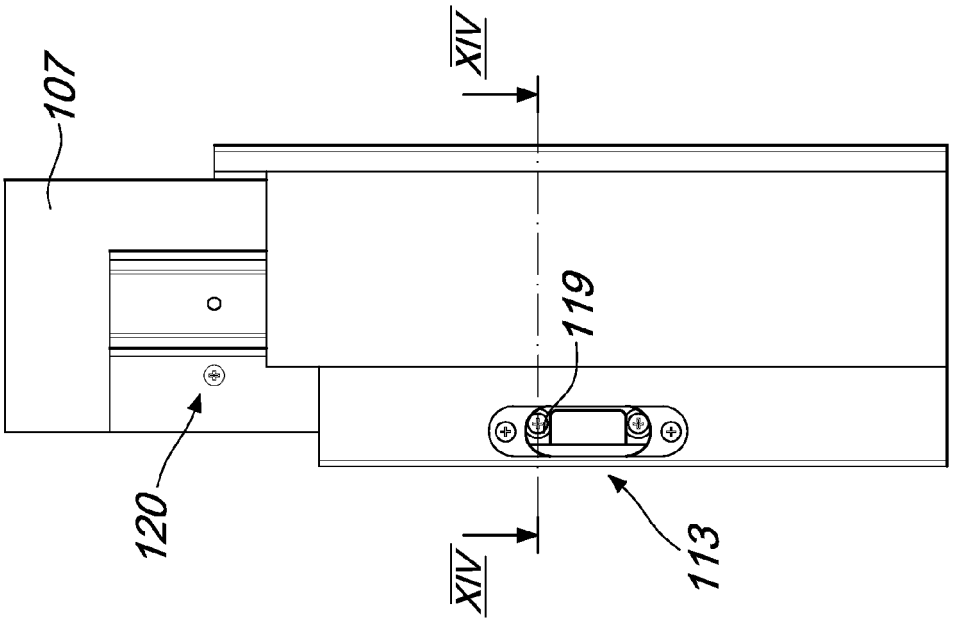

Fig. 13

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EUROPEAN SEARCH REPORT

Application Number
EP 13 17 3760

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	DE 202 19 687 U1 (PROMAT GMBH [DE]; SCHMID HOLZBAU GMBH & CO KG [DE]) 27 February 2003 (2003-02-27) * page 5, paragraph 2; figures 2,4,6 * -----	1-14	INV. E06B1/08
A	DE 296 02 431 U1 (KURZ EDWIN [DE]) 15 May 1996 (1996-05-15) * page 6 * -----	1-14	
A	DE 297 24 007 U1 (WINKLER KARL [DE]) 23 December 1999 (1999-12-23) * page 1, line 29 - page 2, line 14; figure 1 * -----	1-14	
			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
The Hague	13 August 2013	Jülich, Saskia

CATEGORY OF CITED DOCUMENTS

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REFERENCES CITED IN THE DESCRIPTION

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