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DESCRIPTION

Technical Field

5 [0001] The present invention relates to the assembly of two boards end to end and transversely relative to one another, and its application to the manufacture of a frame, and in particular a casing for a closing element of the door, window or bay window type.

Prior art

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[0002] In the field of building, it is typical to manufacture, and install in openings, casings that are positioned at the interface between the carcass (opening in a wall or in a partition) and a closing element of the window, bay window or door type. Generally, each casing includes three boards that are assembled end to end and at a right angle, so as to form a U-shaped casing that is open in the lower part and that extends over only three sides of the closing element, or four boards that are
15 assembled end to end and at a right angle, so as to form a closed casing, which surrounds the closing element over its entire periphery.

[0003] At this time, to manufacture this type of casing, the assembly of the boards is an end-to-end assembly of the pegged type using dowels, which requires the installer to take the measurements of the opening on the worksite beforehand, and to provide these measurements to the plant
20 manufacturing the boards so that the boards are manufactured in the plant at the correct length.

[0004] Next, the boards are conveyed to the worksite, where they are assembled end to end and at a right angle by the installer using dowels and by gluing, in order to form the casing. This type of assembly is not robust, since the boards, once assembled, are not perfectly maintained relative to
25 one another and tend to move angularly relative to one another. Furthermore, this type of assembly is relatively tedious for the installer to carry out.

[0005] Once the casing is assembled, the installer places the casing in the opening around the closing element of the window or door type. Lastly, in a final finishing step, the installer attaches a decorative finishing frame, more commonly called doorframe, around the closing element, for
30 example using staples.

[0006] International patent application WO 00/66867 also proposes a prefabricated casing suitable for being placed in an opening in which the boards of the casing are assembled using assembly

brackets respectively positioned in each angle outside the casing. In this solution, each board comprises, on its outer face, a transverse assembly groove that extends parallel to the two transverse edges of the board. Each assembly bracket comprises two rigid arms that each end with a male assembly element in the form of a transverse hook. Once the two boards are positioned end to end and transversely relative to one another, with a transverse edge of one board oriented toward the inner face of the other board, the two boards can be assembled to one another using an assembly bracket positioned on the outside and in the angle of the two boards, the hooks of the bracket respectively being inserted in the transverse grooves of the two boards. Owing to a certain elasticity of the two arms of the bracket, the two hooks are kept by tension in the transverse grooves of the assembly bracket.

[0007] Advantageously, in this solution, the assembly brackets being positioned outside the casing, once the casing is mounted in an opening, they are not visible.

[0008] However, like for the aforementioned solution with end-to-end assembly of the pegged type, disadvantageously, this solution disclosed in international patent application WO 00/66867 requires the installer to take the measurements of the opening on the worksite beforehand, and to provide these measurements to the plant manufacturing the boards so that the boards are manufactured in the plant at the correct length. Furthermore, disadvantageously, this assembly solution does not allow an adjustment of the position of the boards during the installation, for example in order to correct any errors in measurement-taking or to allow a better adaptation of the casing in the opening.

[0009] Brackets have also been proposed, for example in patent application US 2012/0240494, for assembling boards at a right angle. These assembly brackets are advantageously positioned on the outside of the boards. However, restrictively, these assembly brackets can be implemented only with boards whereof the transverse edges are cut at 45° and are positioned in contact with one another to form a right angle, and unlike the solution of international patent application WO 00/66867, these assembly brackets cannot be used to assemble two boards end to end and transversely relative to one another, with a transverse edge of a board oriented toward the inner face of the other board.

[0010] French patent application FR 2,621,657 has also proposed an assembly system according to the preamble of claim 1. This document proposes to assemble two boards at a right angle using assembly brackets. However, these assembly brackets are positioned on the inside of the boards.

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Aims of the invention

[0011] The present invention aims to propose a novel solution that allows the assembly of two boards end to end and transversely relative to one another with a transverse edge of one board oriented toward the inner face of the other board, and which in particular addresses the previously described drawbacks inherent to international patent application WO 00/66867.

5 [0012] The assembly solution of the invention also aims to propose a novel solution that allows the assembly of two boards end to end and transversely relative to one another with a transverse edge of one board oriented toward the inner face of the other board, in which the assembly means of the boards are hidden by the boards and are not visible from the inside of the angle formed by the boards.

[0013] More specifically, the assembly solution of the invention also allows a robust and fast
10 assembly of the boards.

[0014] The assembly solution of the invention can advantageously be used to manufacture window, door or bay window casings, but is not limited to this application alone.

Brief description of the invention

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[0015] A first subject matter of the invention thus relates to a set including at least two boards, and at least one assembly means of the two boards, as defined in claim 1.

[0016] A second subject matter of the invention relates to an assembly as defined in claim 8.

[0017] A third subject matter of the invention relates to the use of an aforementioned assembly as
20 casing in an opening, and in particular as door, window or bay window casing.

[0018] A fourth subject matter of the invention also relates to a method for assembling two boards of the aforementioned set, as defined in claim 11.

[0019] The invention also relates to a method for manufacturing and installing a door, window or bay window casing, as defined in claim 12.

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Brief description of the figures

[0020] The features and advantages of the invention will appear more clearly upon reading the following detailed description of several specific variant embodiments of the invention, which
30 specific variant embodiments are disclosed as non-limiting and non-exhaustive examples of the invention, and in reference to the appended drawings, in which:

- figure 1 is a perspective view showing an exemplary casing for a window ready to be installed in an opening of a wall;
- figure 2 shows a first variant embodiment of a set according to the invention comprising four boards, four assembly brackets and eight fastening screws, and allowing the manufacture of the casing of figure 1;
- figure 3 shows a variant embodiment of an assembly bracket;
- figures 4 to 9 illustrate the main assembly steps of two boards of the set of figure 2, using an assembly bracket and two fastening screws;
- figure 10 shows two boards of the set of figure 2 assembled using an assembly bracket and two fastening screws, the assembly bracket being shown in cutaway so as to show the positioning of the two fastening screws;
- figure 11 shows a variant embodiment implementing a shim in order to shim the assembly position of an assembly bracket relative to a board;
- figures 12 to 14 illustrate the main implementation steps of the shim of figure 11;
- figure 15 shows another variant embodiment of a set of the invention comprising two boards each comprising two assembly grooves, two assembly brackets (one bracket per groove), and four fastening screws (two fastening screws for each bracket);
- figure 16 is a perspective view showing the casing of figure 1, once installed in the opening of the wall;
- figure 17 shows a second variant embodiment of an assembly bracket;
- figure 18 is an enlargement of a board at an assembly groove of the board;
- figures 19 to 21 show a second assembly bracket variant with clamping notches on one flange and locking notches on the other flange;
- figure 22 shows a third assembly bracket variant with clamping notches on one flange and locking notches on the other flange;
- figures 23 and 24 illustrate the assembly operations of two boards end to end and perpendicular to one another using an assembly bracket according to the second or third variant embodiment.
- figure 25 illustrates an adjustment of the longitudinal position of one board relative to the other;
- Figure 26 is a cross-sectional view of a board and an assembly element of an assembly bracket, said assembly element being elastically deformable and engaged with elastic clamping in the groove of the board;

- figures 27 to 30 respectively show four other assembly bracket variants;
- figures 31 and 32 show an eighth assembly bracket variant.

Detailed description

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[0021] Figure 1 shows an exemplary embodiment of a finishing casing C designed to be mounted in the opening O of a wall P receiving a window F. This casing C is obtained by assembling elements of the set shown in figure 2.

[0022] In reference to figure 2, the set for the construction of the casing C includes four boards 1, 1', 1'' 1''', four assembly brackets 2, and eight fastening screws 3 (two fastening screws 3 per assembly bracket).

[0023] Each board 1, 1', 1'' 1''' forms a rectangular parallelepiped with thickness e , with length L and with width l . The two opposite boards 1 and 1'' are identical, as are the two opposite boards 1' and 1'''.

[0024] Each board 1, 1', 1'' 1''' includes a main inner face 10, a main outer face 11, two opposite longitudinal edges 12 that extend in the longitudinal direction (length) of the board, and two opposite transverse edges 13 that extend transversely to the longitudinal edges and that correspond to the width of the board. The face 11 of each board, called assembly face, comprises a longitudinal assembly groove 14 that extends longitudinally between the two transverse edges 13 over the entire length L of the board. In the specific illustrated example, the groove 14 is preferably centered on the width of the board. In another variant, the groove 14 can be off-centered by contribution to the median longitudinal axis of the board. In this example, said assembly face of the board corresponds to the outer face 11 of the board, and the longitudinal assembly groove 14 is an outer groove.

[0025] The boards 1, 1', 1'' 1''' can be made from any material, and preferably from any material that can be sawed manually. The boards 1, 1', 1'', 1''' are for example made from rough sawn timber, laminated wood, or plastic.

[0026] The boards 1, 1', 1'' 1''' can advantageously be obtained by cutting each board in one or several standard boards of greater length manufactured in the plant to the correct length L , and potentially to the correct width l . In practice, the installer of the casing takes the measurements of the opening O on the worksite, in order to determine the correct length L and the correct width l of each board, then cuts the boards on the worksite to the correct length and, if applicable, the correct width l , for example using a hand saw, from one or several longer standard boards that were

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manufactured in series in the plant. One thus advantageously avoids a custom manufacturing of each board 1, 1', 1'' 1''' in the plant.

5 [0027] In reference to figure 3, each assembly bracket 2 is a rigid part, for example made from plastic, forming two flanges 20a, 20b at a right angle (figure 3/angle A between the two flanges 20a and 20b equal to 90°). Each flange 20a, 20b includes two opposite longitudinal edges 20, a transverse edge 201 located opposite the junction J between the two flanges 20a, 20b, and an assembly face 21. In the specific example of figure 3, the assembly faces 21 correspond to the inner faces of the angle of the bracket 2.

10 [0028] Each flange 20a, 20b of the bracket 2 includes a through hole 23 in the vicinity of the junction J between the two flanges 20a, 20b. Each flange 20a, 20b is further provided, on its inner assembly face 21, with a male assembly element 24 projecting relative to the inner face 21. The inner faces 21 of the two flanges 20a, 20b in bracket form define an assembly angle A smaller than 180°, and in the specific illustrated example, substantially equal to 90°. These two flanges 20a, 20b serve as a rigid connecting bridge between the two male assembly elements 24.

15 [0029] In the illustrated example, the bracket 2 being made in a single monobloc part, for example obtained by molding, each male projecting assembly element 24 is an integral part made from the same material as the flanges 20a, 20b.

20 [0030] Each male assembly element 24 is more specifically an elongated element with length L1, which extends longitudinally from a point positioned at a distance d_1 from the other flange, preferably but not necessarily to the transverse edge 201 of the flange supporting the male assembly element 24. The two male assembly elements (24) thus extend lengthwise in two transverse directions. For at least one of the male assembly elements 24, the distance d_1 is greater than the thickness e of a board.

25 [0031] Each through hole 23 of a flange is positioned between the junction J of the two flanges 20a, 20b and the male assembly element 24 supported by the same flange, at a distance d_2 from the junction J that is less than the thickness e of a board.

[0032] Each male assembly element 24 includes, on the front face, a longitudinal undercut 24a designed to later receive a fastening screw 3. This longitudinal undercut 24a is aligned with the through hole 23 of the other flange of the bracket.

30 [0033] Each male assembly element 24 is dimensioned relative to the assembly grooves 14 so as to be able to be engaged in an assembly groove during the mounting of the casing C, for example with an engagement clearance that is just sufficient to allow a guided longitudinal sliding of the male

assembly element 24 along the assembly groove 14 or without clearance with a sufficient clamping to secure the male assembly element 24 in place by clamping in the groove 14, while allowing a forced longitudinal sliding of the male assembly element 24 in the groove 14

5 [0034] The assembly operations of the casing C of figure 1 from the set of parts of figure 2 will now be described in detail. It is considered hereinafter that the installer of the casing C has cut the boards 1, 1', 1'', 1''' beforehand to the correct length L , and if necessary to the correct width l .

[0035] In reference to figure 4, in order to assemble the two boards 1 and 1' at a right angle, one of the male assembly elements 24 is first engaged in the groove 14 of the board 1', by inserting it into the groove (figure 4 – Insertion arrow I) via one of the ends of the groove 14. Then, the bracket 2 is
10 slid longitudinally along the groove 14 into the assembly position of figure 4.

[0036] It will be noted that the groove 14 is profiled such that once the male assembly element 24 is engaged in the groove 14 via the end of a board, it is locked in translation by the groove 14 in the direction D transverse to the mounting face 11 of the board, so as to avoid a disengagement of the male assembly element 24 outside the groove 14 in this transverse direction D. In the variant of
15 figure 4, this is obtained by providing a groove 14 width l_1 (figure 4) at the mounting face 11 of the board that is small enough relative to the maximum transverse dimension l_2 of the male assembly element 24 to obtain said locking of the male assembly element 24 in the groove.

[0037] In this assembly position of figure 4, the assembly face 21 of the flange 20a of the bracket 2, which supports the male assembly element 24 engaged in the groove 24, is positioned flat against
20 the mounting face 11 of the board 1'. The groove 14 in combination with the male assembly element 24 make it possible to lock the translation of the bracket 2 relative to the board 1' on the one hand transversely to the plane of the mounting face 11 of the board 1', and on the other hand in both transverse directions perpendicular to the longitudinal direction X of the boards 1', while allowing a guided translation of the bracket 2 along the groove 14'. As a result, once engaged in the groove
25 14 of the board 1', the bracket 2 has a single degree of translational freedom along the groove 14.

[0038] In the assembly position of figure 4, the assembly face 21 of the other flange 20b of the bracket 2 is positioned at a distance E (figure 5) from the end of the board 1' that is substantially equal to the thickness e of the board 1. To shim this spacing E, it is for example possible to use a gauge or a shim with thickness e , said shim more specifically being able to be made up of a piece of
30 board.

[0039] In reference to figure 5, once the bracket 2 has been slid to its assembly position, the flange 20a of the bracket 2 is attached to the board 1' using a fastening screw 3 that is screwed into the

undercut 24a (figures 6 and 10) of the male assembly element 24 of the flange 20a and in the bottom 14a of the groove 14 of the board 1'. This fastening screw 3 is inserted into the space between the bottom 14a of the groove 14 of the board 1' and the undercut 24a (figure 10) of the male assembly element 24 of the flange 20a of the bracket 2, while being passed through the through hole 23 of the flange 20b of the bracket. Preferably, to facilitate the penetration of the threaded shank 3b of the fastening screw 3 in the bottom of a groove 14, the bottom 14a of the groove 14 comprises a V-shaped longitudinal undercut 14b (figure 5 and figure 18).

[0040] The section of the through orifice 23 of the flange 20b is greater than the section of the head 3a of the fastening screw 3, so as to allow the passage of the head 3a of the fastening screw 3 through the flange 20b. The fastening screw 3 is screwed so that the head 3a of the screw 3 is positioned between the flange 20b of the assembly bracket 2 and the transverse edge 13 of the board 1' (figures 5 and 10).

[0041] Once the bracket 2 is attached to the board 1', the other board 1 is positioned at a right angle relative to the board 1' as illustrated in figure 5, that is to say, with one of the transverse edges 13 of the board 1 oriented toward the assembly face 21 of the flange 20a of the assembly bracket, and the board 1 is moved in the direction Z parallel to the assembly face 21 of the flange 20b of the bracket, so as to engage the male assembly element 24 supported by the flange 20b of the bracket in the groove 14 of the board 1. Next, the board 1 is slid in the direction Z relative to the male assembly element 24 until the transverse edge 13 of the board 1 is positioned in planar contact with the assembly face 21 of the flange 20a of the bracket 2 (figure 6).

[0042] Next, in reference to figures 8 to 10, the bracket 2 is attached with the board 1 using a fastening screw 3, which is passed through the through hole 23 of the flange 20a of the bracket 2 (figure 8), and which is screwed in the undercut 24a (figure 10) of the male assembly element 24 of the flange 20b of the bracket 2 (figure 10) and in the bottom of the groove 14 of the board 1. The section of the through orifice 23 of the flange 20a is smaller than the section of the head 3a of the fastening screw 3, so as to lock the head 3a of the fastening screw 3 against the face 22 of the flange 20a of the bracket (figure 9).

[0043] Once these operations are complete, the two boards 1 and 1' are assembled end to end and at a right angle using the assembly bracket 2, which is positioned as reinforcement of the angle formed by the two boards 1 and 1', with the flanges 20a; 20b of the bracket 2 positioned flat respectively against the mounting faces 11 of the two boards 1 and 1', and with the male assembly elements 24 of the assembly bracket 2 respectively engaged in the assembly grooves 14 of the two

boards 1; 1'. Once the two boards 1 and 1' are assembled, the transverse edge 13 of the board 1' is oriented and in contact with the inner face of the other board 1. This assembly is robust, easy and fast to perform, and the two boards are perfectly oriented at a right angle relative to one another.

[0044] To manufacture the casing C with four sides of figure 1, these assembly operations of two boards with the other boards 1'' and 1''' are reiterated three times (assembly of the two boards 1 and 1''; assembly of the two boards 1''' and 1; assembly of the two boards 1''' and 1'').

[0045] In another variant, the casing C could also form a U and include only three sides formed by the boards 1, 1' and 1''.

[0046] Figures 11 to 14 show a variant embodiment, in which a shim 15 with thickness e is used, comprising a groove 16, a cutout 17 in its transverse edge 18 at the groove 16 of the board so as to leave a free passage through the shim 15 for the passage of a male fastening element 24 for a bracket 2 and the passage of a screw 3.

[0047] In this variant, the board 1' and the shim 15 are first positioned at a right angle and end to end, as illustrated in figure 12, then the male assembly element 24 of the flange 20a of the bracket 2 is engaged in the groove 14 of the board 1', by passing it through the end cutout 17 of the shim 15 in the longitudinal direction X of the board 1'. Then the engagement of the bracket 2 is continued by sliding it in the longitudinal direction X of the board 1' until the male assembly element 24 of the flange 20b of the bracket 2 is completely engaged in the groove 14 of the board 1, as illustrated in figure 13.

[0048] Next, once the bracket 2 is engaged on the board 1' and shimmed in the assembled position by the shim 15, it suffices to attach the bracket 2 to the board 1' using a fastening screw 3 (figure 14) in a manner comparable to that previously described, but this time by passing the fastening screw 3 (figure 14) not only through the through hole 23 of the flange 20b of the bracket, but also through the end cutout 16 of the shim 15.

[0049] To finish the assembly, the shim 15 is removed, and the other board 1 is assembled with the board 1' using the bracket 2 and a fastening screw 3 in a manner comparable to that previously described in reference to figures 7 to 10.

[0050] In the context of the invention, the boards may comprise several (at least two) assembly grooves 14. As an example, figure 15 shows another variant embodiment in which each board 1, 1' comprises two assembly grooves 14, and the boards 1, 1' can be assembled end to end at a right angle using two assembly brackets 2.

[0051] In another variant, the two assembly brackets 2 of figure 15 could be replaced by a single assembly bracket, each flange 20a, 20b of which is provided with two male assembly elements (one male assembly element 24 per assembly groove 14).

5 [0052] In all of the variants illustrated in the appended figures, each assembly groove 14 of the board extends longitudinally over the entire length of the board, which advantageously allows the installer himself to cut each board to the desired length from at least one longer board. In another variant, it is possible to implement boards comprising, at each end, a shorter assembly groove 14 that extends longitudinally from the end of the board over a length smaller than the total length L of the board.

10 [0053] The invention is not limited to the end-to-end assembly of two boards at a right angle, but can more generally be used to assemble two boards end to end transversely relative to one another with an angle A between the two boards that is not necessarily equal to 90° , and that is between 0° and 180° (A not, however, being able to be equal to 0° or to 180°), and preferably between 45° and 135° . In this case, the transverse edges 13 of the boards can for example be beveled so as to obtain this angle A different from 90° . The angle A between the two flanges 20a and 20b of the assembly brackets will be adapted accordingly.

[0054] It should also be noted that in the case of an assembly at a right angle, the transverse edges 13 of the boards are not necessarily flat, but can also be beveled in a complementary manner (for example at 45°) so as to be able to form a right angle.

20 [0055] In the variant embodiments that are illustrated in the appended figures, the brackets 2 are provided so as to be engaged on the outer part of the angle formed by the boards, which is important when manufacturing a window or door casing C.

[0056] The invention is not, however, limited to the manufacture of a casing for framing a window or a door, but can apply to any transverse and end-to-end assembly of two boards.

25 [0057] In another variant illustrated in figure 17, each flange 20a, 20b of the bracket comprises a male assembly element 24 that is deformable, preferably elastically. More specifically, each male assembly element 24 forms a jaw with two clamping lips 24b, which delimit a longitudinal housing between them 24c for the threaded shank 3b of a fastening screw, and which are able to be separated from one another, preferably elastically. During the screwing of the fastening screw 3 in this male assembly element 24, the threaded shank 3b of the screw 3 is screwed in the longitudinal housing 24c, and causes a slight separation of the two clamping lips 24b, which allows a locking by clamping
30 of the male assembly element 24 in the corresponding assembly groove 14 of a board.

[0058] In another variant, the male assembly element 24, for example that of figure 17, can be elastically deformable so as to obtain an elastic engagement of the male assembly element 24 in the groove 14. More specifically, the separation when idle of the two clamping lips 24b of the male assembly element 24 is for example slightly greater than the maximum width of the groove 14, and the insertion of the assembly element 24 into the groove 14 is done by exerting a force on the two clamping lips 24b bringing them closer together. Once the assembly element 24 is forcibly engaged in the groove 14, the two clamping lips 24b move elastically away from one another, causing an elastic clamping of the male assembly element 24 in the groove. Using an elastically deformable male assembly element 24 advantageously makes it possible to avoid the use of fastening screws 3 in order to secure the assembly bracket 2 in place relative to the boards. The groove 14 and the elastically deformable male assembly element 24 can be designed to allow an elastic longitudinal engagement of the male assembly element 24 in the groove 14 by the end of the board, as previously described, and/or can be designed to allow an elastic engagement of the male assembly element 24 in the groove 14 in a direction transverse, and in particular perpendicular, to the mounting face 11 of the board.

[0059] Figure 26 shows another variant of the male assembly element 24, which does not require the use of fastening screws, and the two clamping lips 24b of which are elastically deformable and are engaged with elastic clamping in a dovetail-shaped groove 14. Once engaged in the groove 14, the two clamping lips 24b are locked by the inclined walls 14c of the groove 14, which hinder the disengagement of the male assembly element 24.

[0060] Figures 19 to 22 show another variant embodiment of an assembly bracket 2', which does not require the use of fastening screws. Each flange 20a, 20b of this assembly bracket 2' supports a the male assembly element 24, which is preferably elastically deformable so as to obtain an elastic engagement of the male assembly element 24 in a groove 14 of a board 1 or 1'.

[0061] The male assembly element 24 of the flange 20b is provided with clamping notches 24d (figure 21) that make it possible to increase the friction between this male assembly element 24 and the walls of a groove 14 of a board, and thus the clamping of this male assembly element 24 in the groove 14, but without preventing the sliding in both longitudinal directions E and D (figure 23) of this male assembly element 24 in the groove 14 of a board.

[0062] The male assembly element 24 of the other flange 20a is provided with locking notches 24e (figure 20) that are oriented so as to allow the sliding of this male assembly element 24 in a groove 14 of a board in the engaging direction E of the male assembly element 24 in the groove 14, but

which allow a locking of the male assembly element 24 while preventing the sliding of the male assembly element 24 in a groove 14 in the opposite disengaging direction D.

[0063] More specifically, but not necessarily, the length L_a of the flange 20a of the bracket 2' is greater than the length L_b of the flange 20b, the difference in length being chosen so as to offset the thickness of the board 1 in the assembly (figure 24), such that the contact surface between the flange 20b and the board 1 is substantially identical to the contact surface between the flange 20a and the two boards 1' and 1.

[0064] Figure 22 shows another variant embodiment of an assembly bracket 2'', which differs from the assembly bracket 2' of figure 19 by the use of an assembly element 24 supported by the flange that extends to the other flange 20a.

[0065] In reference to figures 23 and 24, in order to assemble two boards 1 and 1' end to end, perpendicular to one another, using an assembly bracket 2' (or 2''), the following steps are for example taken.

[0066] The male assembly element 24 of the flange 20b of the assembly bracket 2' (or 2'') is engaged in the assembly groove 14 of the board 1, such that the assembly face 21 of the flange 20b of the bracket 2' (or 2'') is positioned flat against the assembly face 11 of the first board 1'. The longitudinal position of the bracket 2' (or 2'') along the groove 14 of the board 1 is adjustable, the clamping notches 24d of the flange 20b not preventing the forced sliding of the male assembly element 24 of the flange 20b in the groove 14 in one or the other of the engagement E or disengagement D directions. Preferably, the longitudinal position of the bracket 2' (or 2'') is adjusted along the groove 14 of the board 1, by causing the assembly element 24 of the flange 20b to slide in the groove 14 of the board 1 and in the engaging direction D (figure 23) until the other flange 20a of the bracket is in contact with the transverse end edge 13 of the board 1.

[0067] The second board 1' is positioned transversely, and in the case at hand perpendicularly, to the first board 1, the transverse edge 13 of the second board 1' being oriented toward the inner face 10 of the other board 1 supporting the assembly bracket, and the second board 1' or the first board 1 supporting the assembly bracket 2' (or 2'') is moved, so as to engage the male assembly element 24 supported by the flange 20a in the assembly groove 14 of the other board 1'. During this engagement, the second board 1' is slid relative to the male assembly element 24 engaged in the assembly groove 14 of the board 1, until the transverse edge 13 of the second board 1' is positioned in contact with the inner face 10 of the first board 1 (figure 24). The locking notches 24e of the

assembly element 24 of the flange 20a prevent the sliding of the male assembly element 24 in the groove 14 in the disengaging direction D.

[0068] In reference to figure 25, the assembly bracket of the invention also allows an adjustment of the longitudinal position of the board 1' relative to the board 1, so as for example to offset measurement and/or cutting errors of the boards during the assembly, or so as to adapt the assembly of boards as well as possible to the opening in which it is installed. For example, starting from the assembly of figure 24, by tapping on the inner face 10 of the board 1', the installer can very easily forcibly slide the board 1 and the assembly bracket longitudinally relative to the board 1 to bring them into the position of figure 25.

[0069] In the variant of figures 23 and 24, the boards 1 and 1' comprise a single assembly groove 14. In another variant, in a manner comparable to figure 15, each board 1 and 1' could comprise several assembly grooves, and could be assembled two by two by means of several assembly brackets 2' (or 2'').

[0070] Figures 27 and 28 show two other examples of assembly brackets 2A and 2B according to the invention in which the width (l) of the flanges 20a, 20b is smaller than that of the examples of the preceding figures.

[0071] Figure 29 shows an exemplary assembly bracket 2C according to the invention, in which the male assembly elements 24 are attached parts, which can be attached by screws V on the two respective flanges 20a, 20b of the assembly bracket, and which can be separated from the two flanges 20a, 20b.

[0072] Figure 30 shows an exemplary assembly bracket 2D according to the invention, in which the two flanges 20a, 20b of the assembly bracket are hinged relative to one another using a hinge 20c, so as to allow an adjustment of the internal assembly angle (A).

[0073] Figures 31 and 32 show an exemplary assembly bracket 2E according to the invention, in which the two flanges 20a, 20b of the assembly bracket are hinged relative to one another using a hinge 20d, which allows an adjustment of the internal assembly angle, but also a rotational pivoting of one flange 20a of the assembly bracket relative to the other flange 20b.

PATENTKRAV

1. Enhed, der omfatter mindst to plader (1; 1') og mindst ét middel til montering (2; 2'; 2"; 2A; 2B; 2C, 2D; 2E) af de to plader (1; 1'), hvor hver plade (1, 1') omfatter en indvendig flade (10), en udvendig flade (11), to langsgående kanter (12), der strækker sig langs pladens langsgående retning, og to tværgående kanter (13), der strækker sig på tværs af de langsgående kanter, hvilket monteringsmiddel gør det muligt at montere de to plader (1; 1') placeret ende mod ende og på tværs i forhold til hinanden, med en tværgående kant (13) af den ene (1') af pladerne (1, 1') orienteret mod den indvendige flade (10) af den anden plade (1), **kendetegnet ved, at** hver plade (1; 1') på den udvendige flade (11) omfatter mindst én langsgående, udvendig monteringsrille (14), der strækker sig i pladens langsgående retning, og monteringsmidlet omfatter mindst to han-monteringsselementer (24), der er forbundet eller egnede til at blive indbyrdes forbundet med en forbindelsesbro (20a/20b), og som er egnede til at blive indpasset henholdsvis i de to pladers to udvendige langsgående monteringsriller (14), hvori forbindelsesbroen omfatter to stive flanger (20a; 20b), hvis indvendige flader (21) definerer en indvendig monteringsvinkel (A) på mindre end 180°, hvori hvert han-monteringsselement (24) rager frem i forhold til den indvendige flade (21) af en flange af forbindelsesbroen, og hvori afstanden d_1 mellem mindst ét han-monteringsselement (24) båret af den ene (20a) af forbindelsesbroens flanger og den indvendige flade (21) af forbindelsesbroens anden flange (20b) er større end en plades tykkelse e .

2. Enhed ifølge krav 1, hvori han-monteringsselementerne (24) er tilpasset til blive indsat i henholdsvis de to pladers udvendige langsgående monteringsriller (14), således at de to indvendige flader (21) af forbindelsesbroens to flanger (20a; 20b) er i kontakt med henholdsvis de udvendige flader (11) af de to monterede plader.

3. Enhed ifølge et hvilket som helst af kravene 1 eller 2, hvori forbindelsesbroen danner et stift monteringsbeslag, hvis to flanger (20a; 20b) er faste i forhold til hinanden, eller danner et monteringsbeslag, hvis to flanger (20a; 20b) er sammenføjet med hinanden for således at muliggøre mindst én indstilling af den indvendige monteringsvinkel (A).

4. Enhed ifølge et hvilket som helst af de foregående krav, hvori mindst ét han-monteringsselement (24), og fortrinsvis hvert han-monteringsselement (24), kan indpasses med eller uden frirum i den tilsvarende langsgående udvendige rille (14) af en plade og kan

immobiliseres ved fastspænding i rillen (14).

5 **5.** Enhed ifølge krav 4, hvori mindst ét han-monteringsselement (24), og fortrinsvis hvert han-monteringsselement (24), er deformerbart for således at muliggøre en fastspænding af han-monteringsselementet (24) i den tilsvarende langsgående udvendige rille (14) af en plade (1; 1'), og fortrinsvis er elastisk deformerbart for således at muliggøre en elastisk fastspænding af han-monteringsselementet (24) i den tilsvarende langsgående udvendige rille (14) af en plade (1; 1').

10 **6.** Enhed ifølge et hvilket som helst af de foregående krav, hvori mindst ét han-monteringsselement (24), og fortrinsvis hvert han-monteringsselement (24), kan indføres i en monteringsrille (14) af en plade i en indføringsretning på tværs af pladens udvendige flade (11).

15 **7.** Enhed ifølge et hvilket som helst af de foregående krav, hvori mindst ét han-monteringsselement (24) omfatter fastspændingsindsnit (24d), der gør det muligt at øge friktionen mellem dette han-monteringsselement (24) og væggene af den monteringsrille (14), hvor det er indført, uden dog at forhindre en tvungen glidning af han-monteringsselementet (24) i de to langsgående retninger (E, D) langs rillen, og hvori mindst ét han-monteringsselement (24) omfatter blokeringsindsnit (24e), der, når først han-monteringsselementet (24) er indført i
20 en monteringsrille (14), forhindrer langsgående glidning af han-monteringsselementet (24) i monteringsrillen (14) i en indføringsretning (D), og fortrinsvis hvori et han-monteringsselement (24) omfatter fastspændingsindsnit (24d) og ikke omfatter blokeringsindsnit (24e), det andet han-monteringsselement (24) omfatter blokeringsindsnit (24e).

25 **8.** Montering, der er fremstillet ud af enheden ifølge et hvilket som helst af de foregående krav og omfatter mindst to plader (1; 1'), der er monteret ende mod ende og på tværs i forhold til hinanden, med en tværgående kant (13) af den ene (1') af pladerne (1; 1'), betegnet anden plade, orienteret mod den indvendige flade (10) af den anden plade (1), betegnet første plade, hvor monteringsmidlets (2; 2'; 2"; 2A; 2B; 2C, 2D; 2E) han-monteringsselementer (24)
30 henholdsvis er indført i de to pladers udvendige, langsgående monteringsriller (14), og hvor monteringsmidlets forbindelsesbro (2; 2'; 2"; 2A; 2B; 2C, 2D; 2E) er placeret uden for den indvendige vinkel dannet af de to plader (1; 1'), og fortrinsvis i kontakt med de to pladers (1; 1') udvendige flader (11).

9. Montering ifølge krav 8, der omfatter mindst tre plader (1; 1'; 1"), der er monteret ende mod ende og på tværs i forhold til hinanden, således at de danner en åben U-formet ramme, eller der omfatter mindst fire plader (1; 1'; 1"; 1'''), der er monteret ende mod ende og på tværs i forhold til hinanden, således at de danner en lukket ramme med fire sider.

5

10. Anvendelse af monteringen ifølge et af kravene 8 til 9 som ramme (C) i en åbning (O), og navnlig som dør-, vindues- eller lysningsramme.

11. Fremgangsmåde til montering af to plader (1 1') af enheden ifølge et hvilket som helst af kravene 1 til 7 omfattende placering af de to plader ende mod ende og på tværs i forhold til hinanden, med en tværgående kant (13) af den ene (1') af pladerne (1; 1'), betegnet anden plade, orienteret mod den indvendige flade (10) af den anden plade (1), betegnet første plade, og indføring af monteringsmidlets (2; 2'; 2"; 2A; 2B; 2C, 2D; 2E) han-monteringsselementer (24) henholdsvis i to af de to pladers udvendige, langsgående monteringsriller (14).

15

12. Fremgangsmåde til fremstilling og montering af en dør-, vindues- eller lysningskasse, **kendetegnet ved, at** der fremstilles en kasse (C) med tre eller fire sider ved anvendelse af monteringsfremgangsmåden ifølge krav 11 med tre (1; 1'; 1") eller fire plader (1; 1'; 1"; 1''') og mindst tre eller fire monteringsmidler, og anbringelse af kassen i en åbning (O) i en væg (P).

20

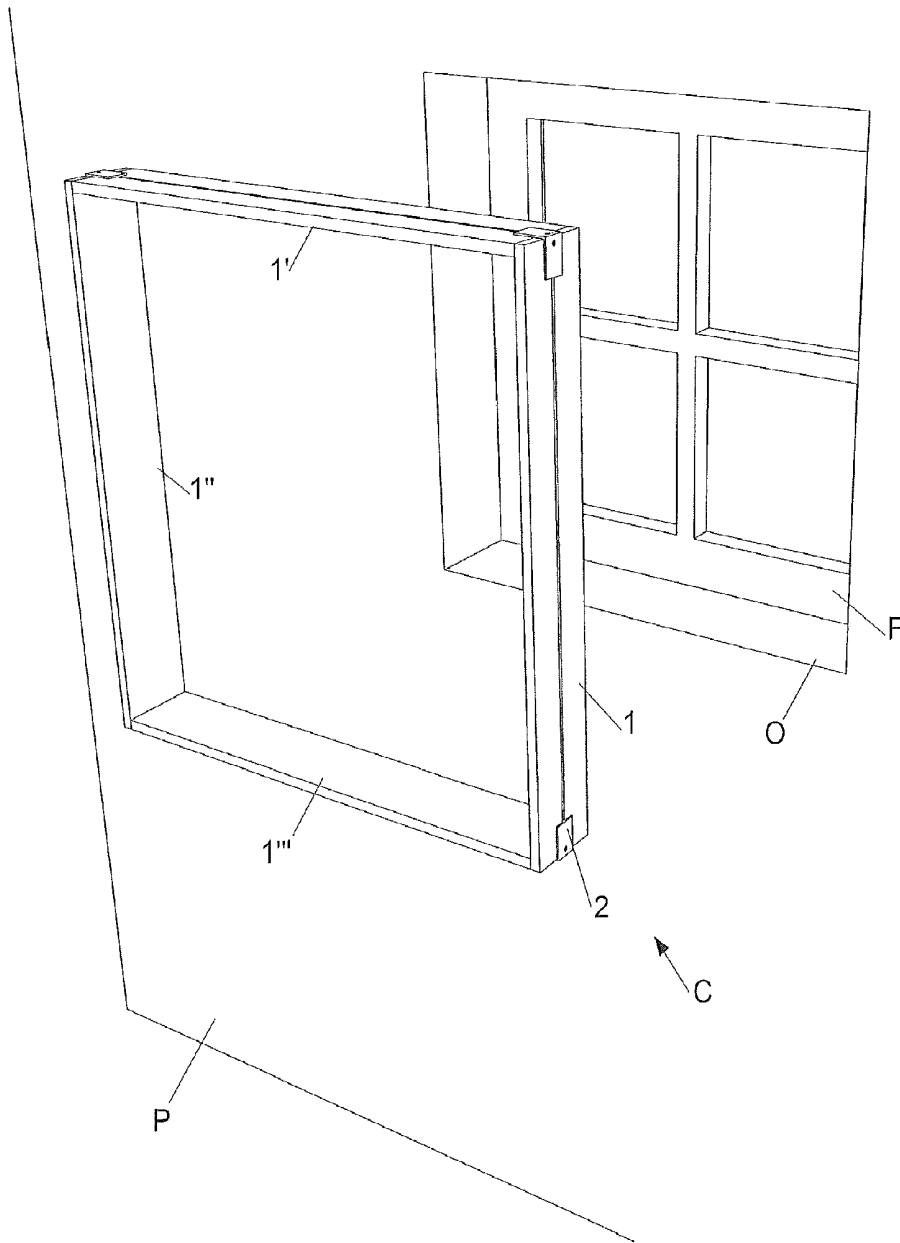


FIG.1

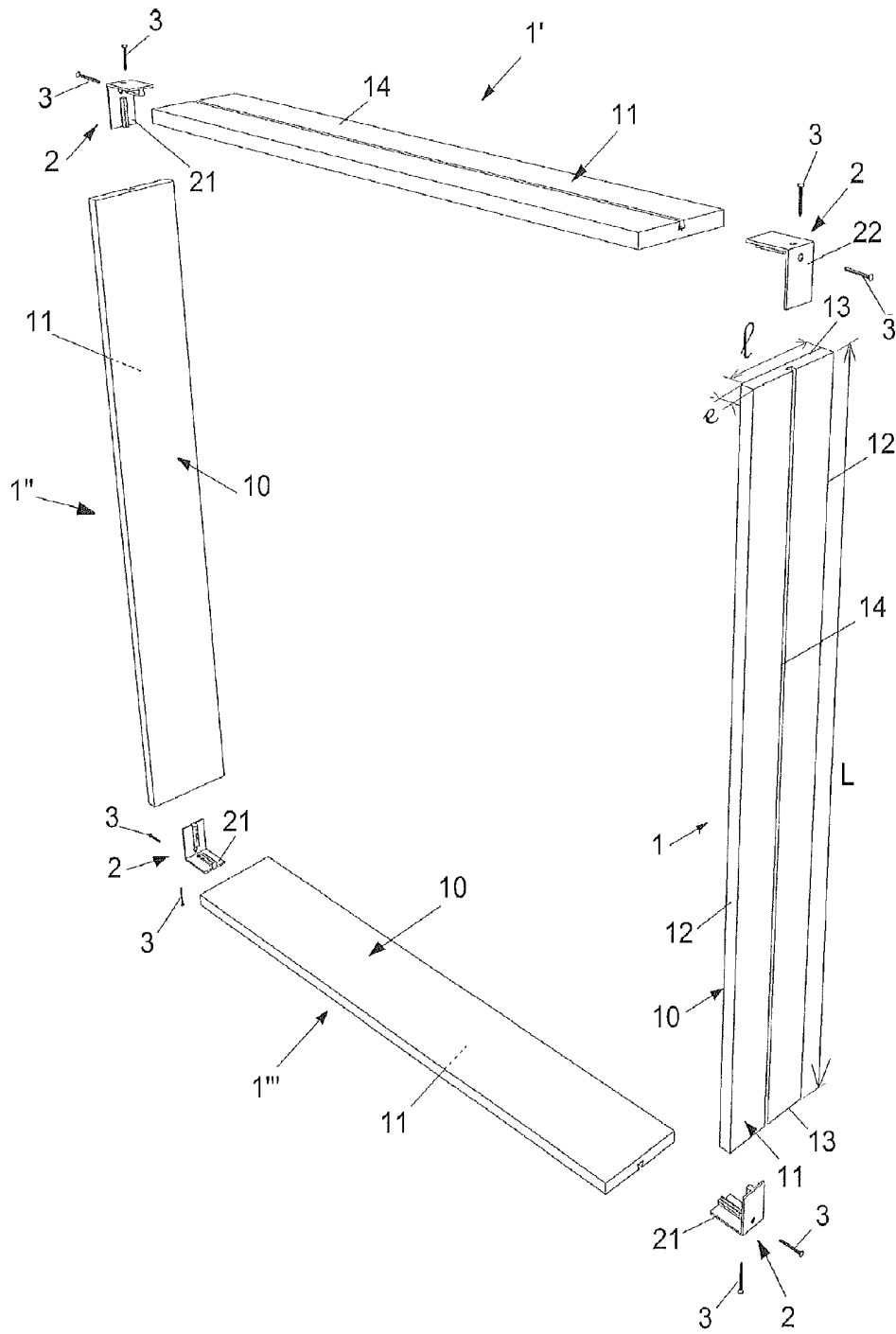
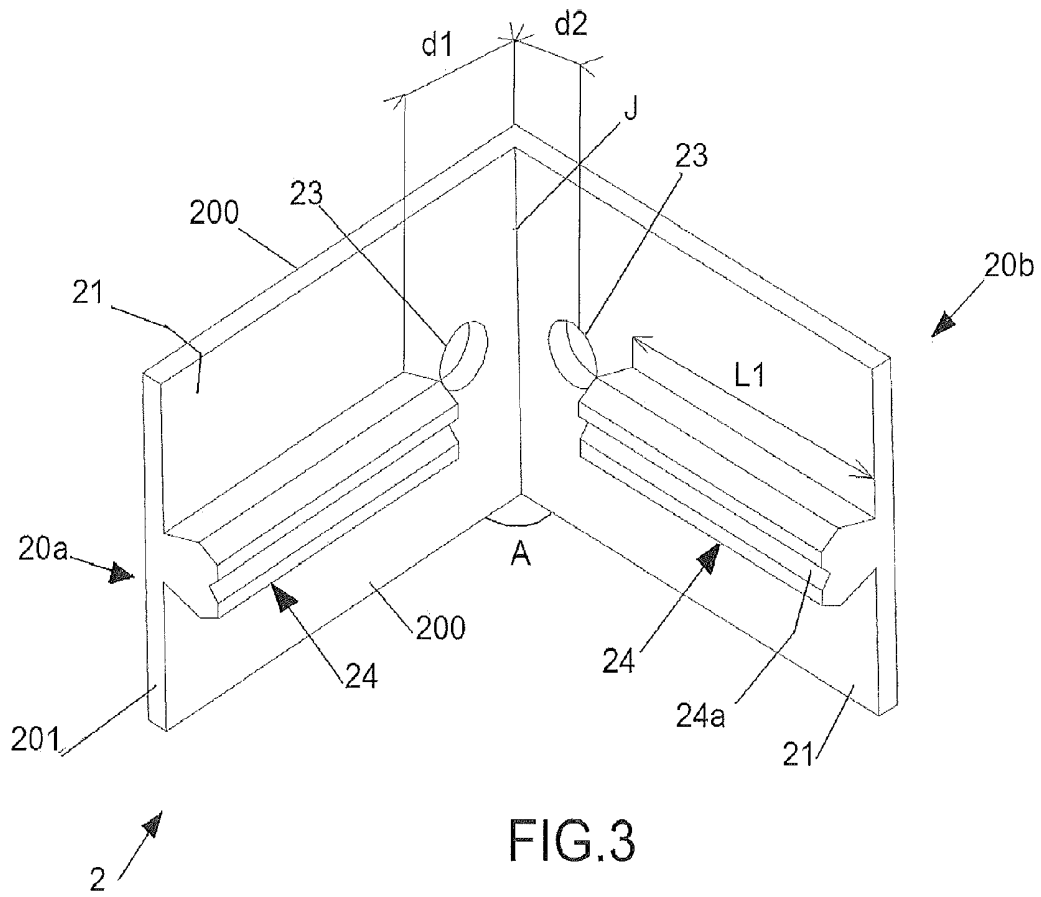


FIG.2



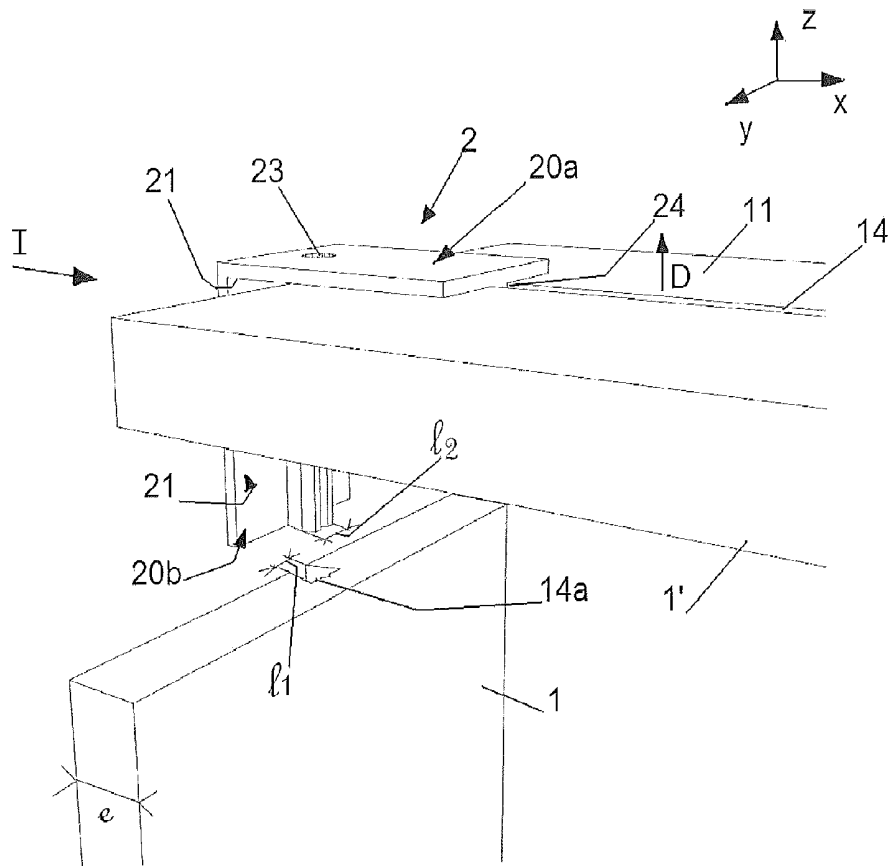


FIG.4

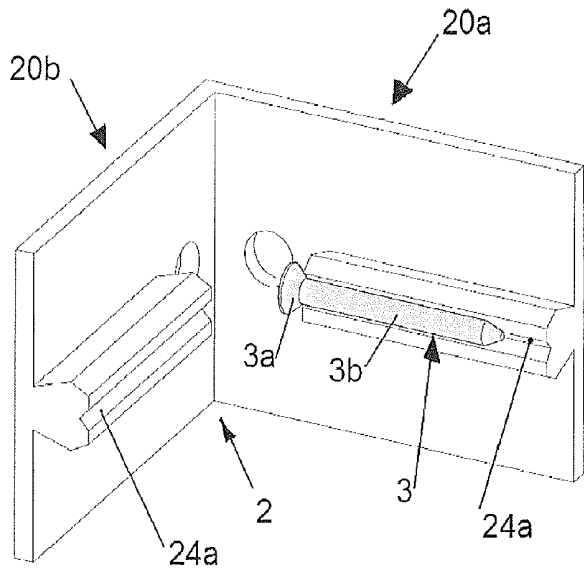


FIG. 6

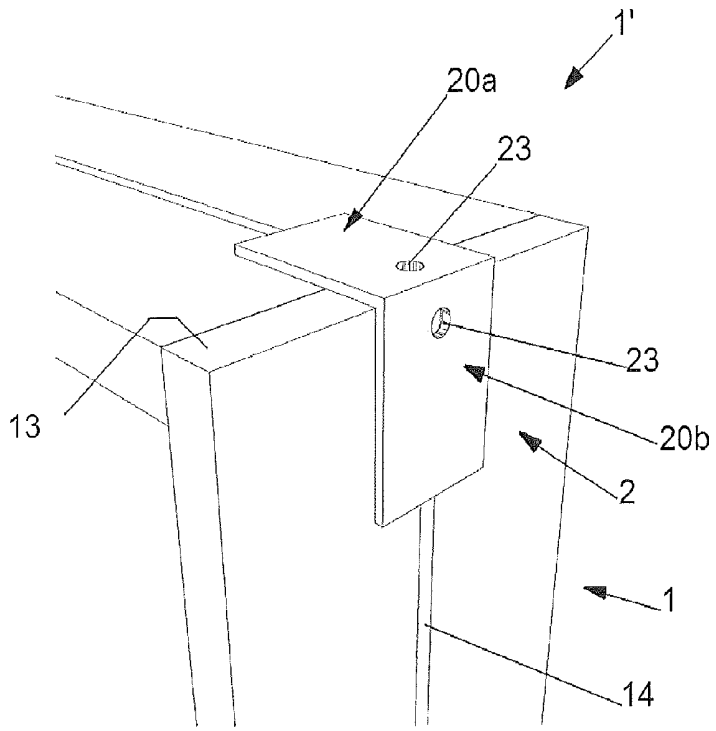


FIG. 7

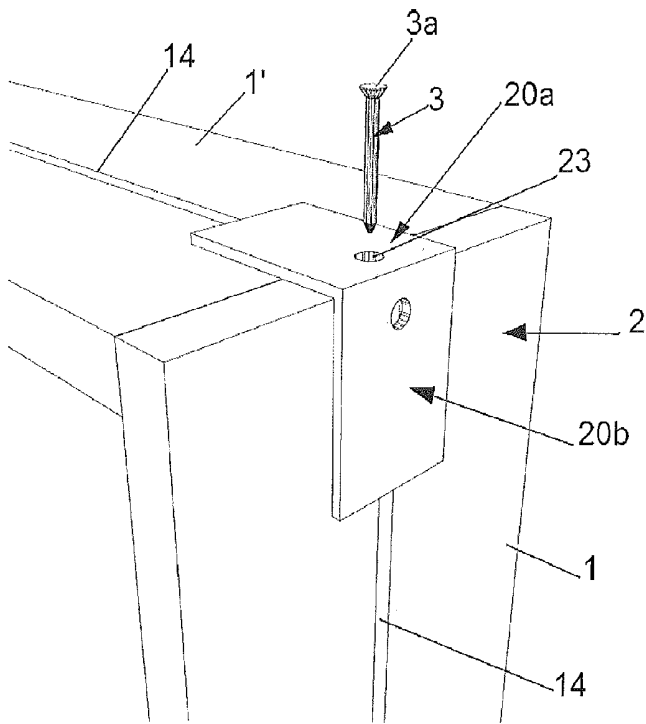


FIG. 8

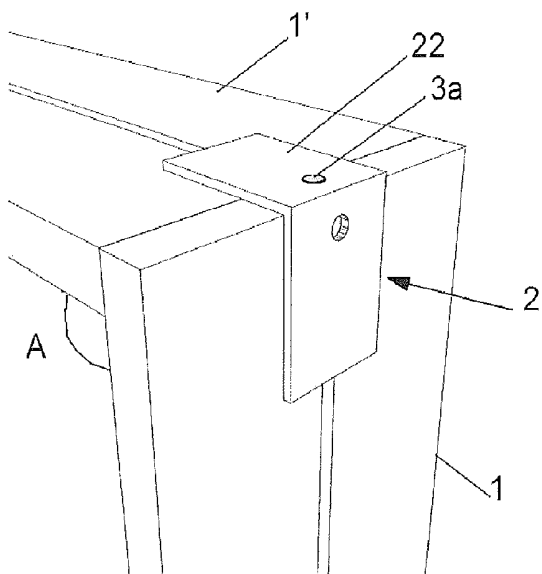


FIG. 9

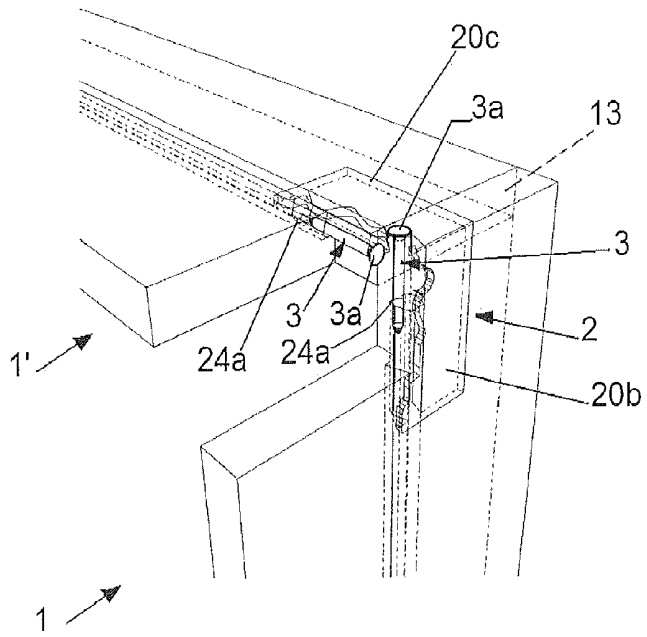


FIG. 10

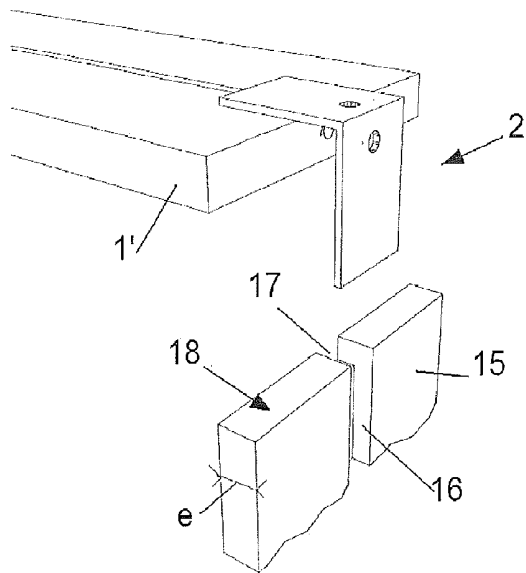


FIG. 11

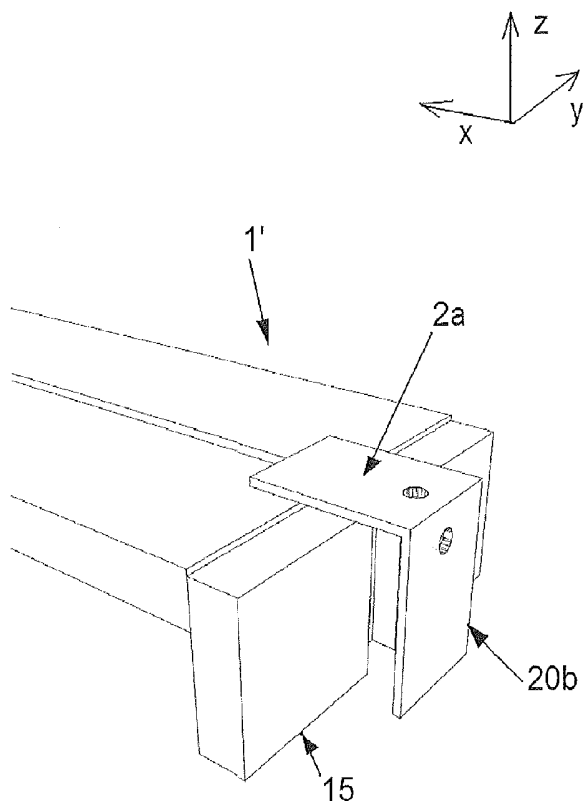


FIG. 12

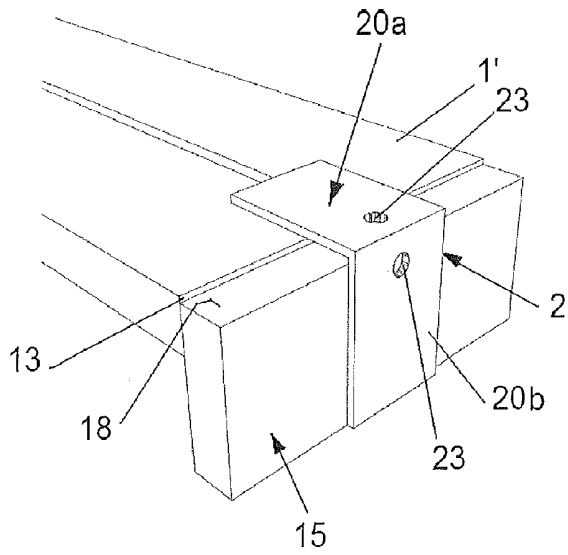


FIG.13

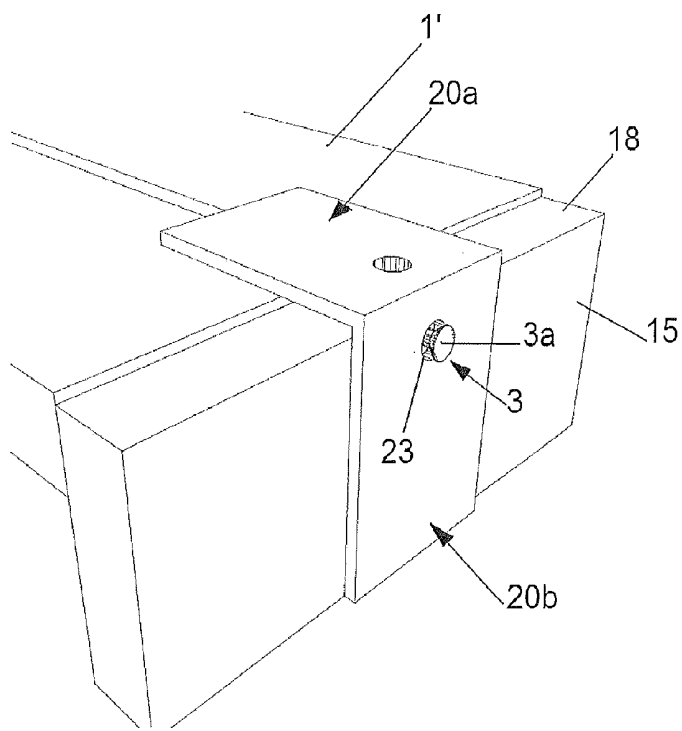


FIG.14

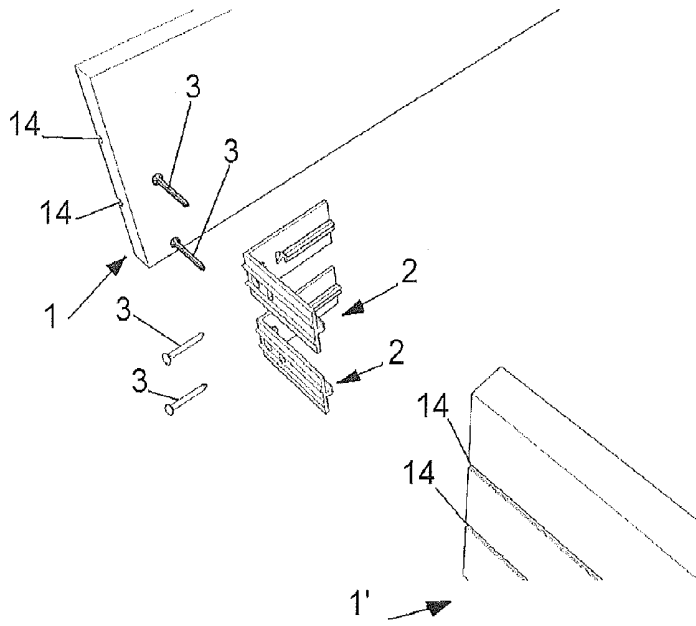


FIG.15

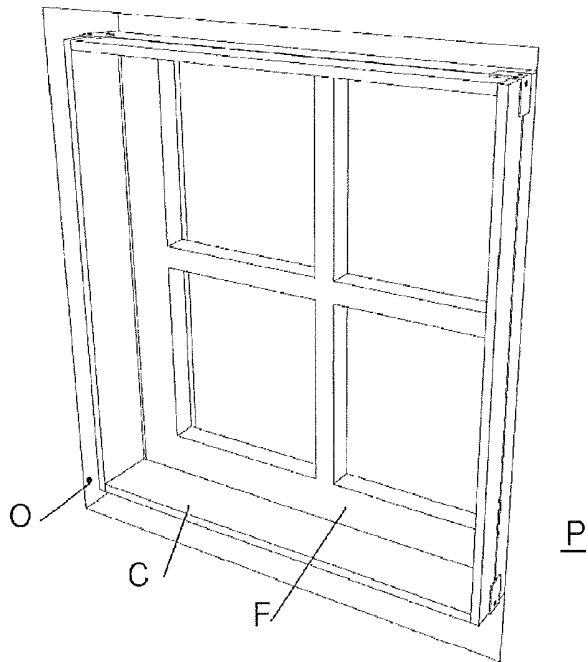


FIG.16

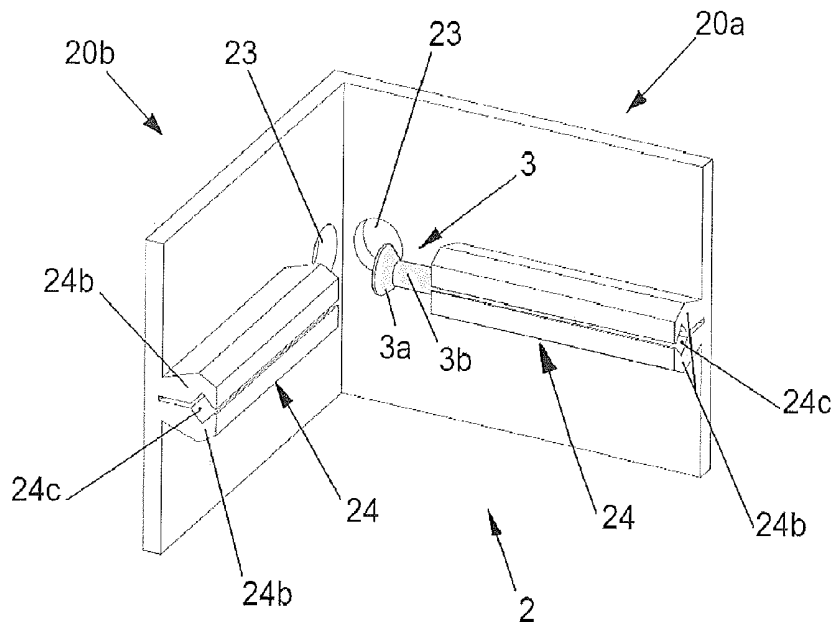


FIG.17

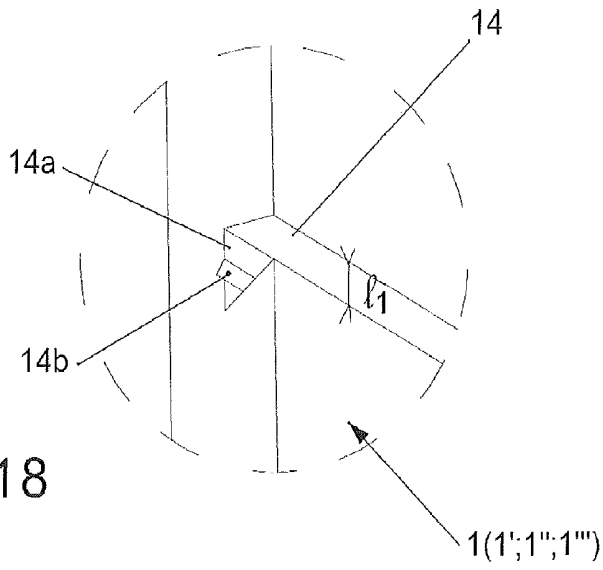


FIG.18

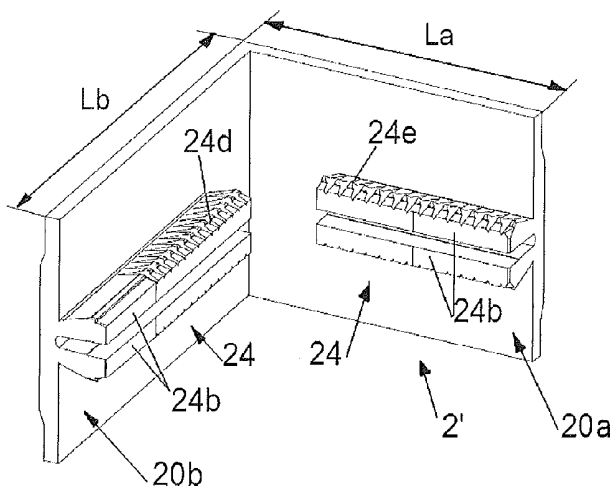


FIG.19

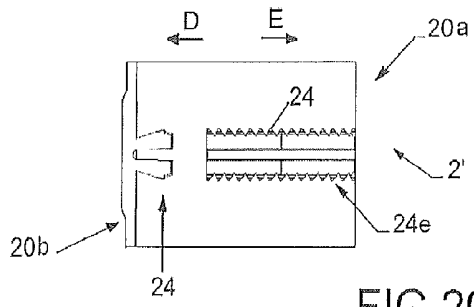


FIG. 20

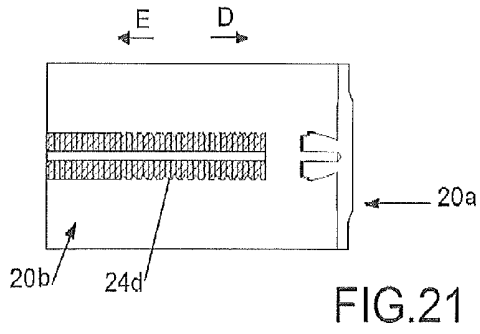


FIG. 21

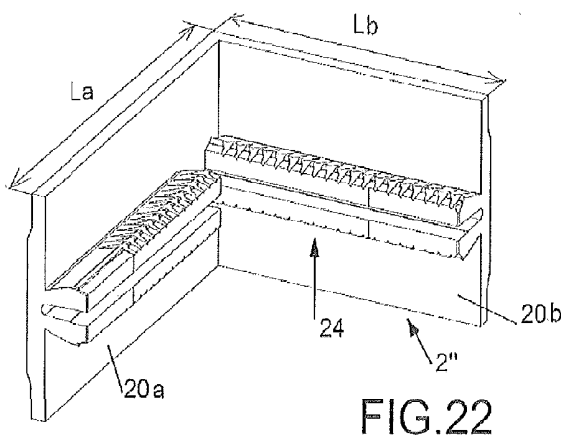
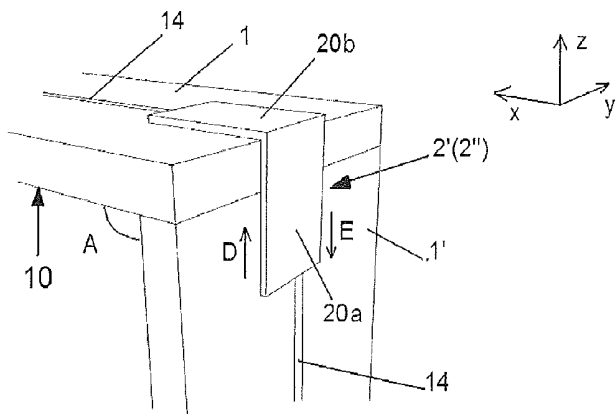
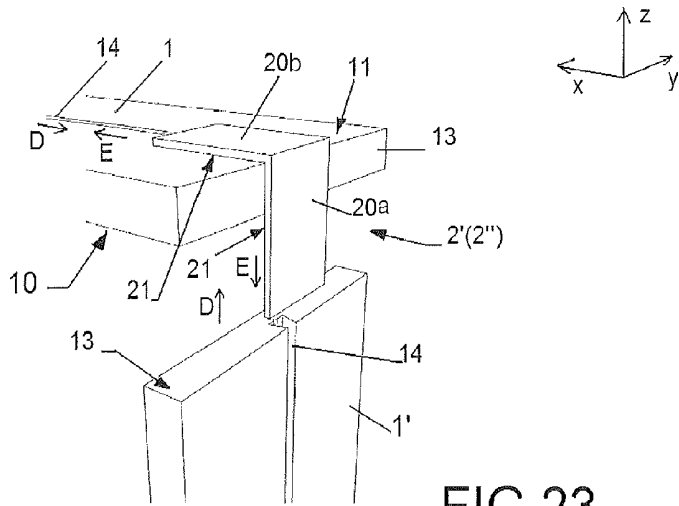


FIG. 22



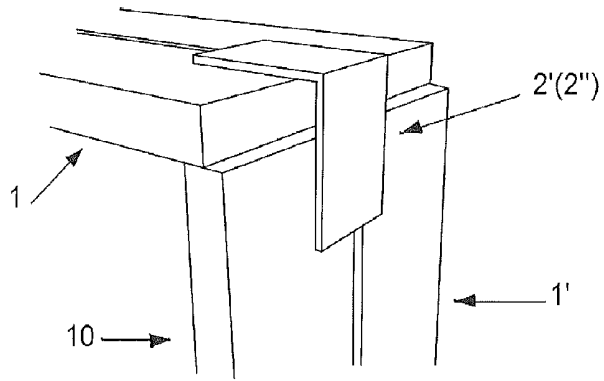


FIG. 25

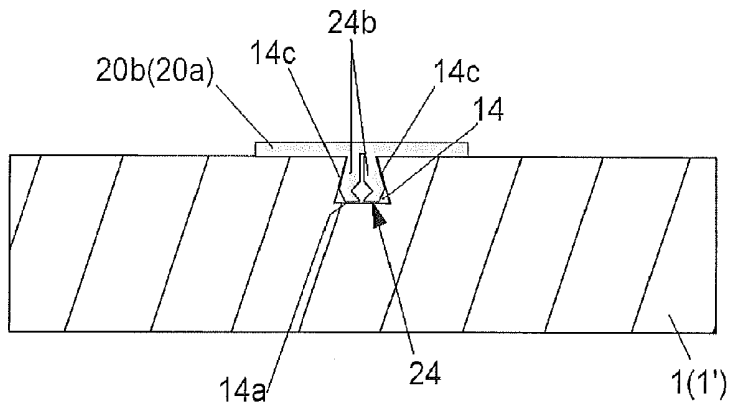


FIG. 26

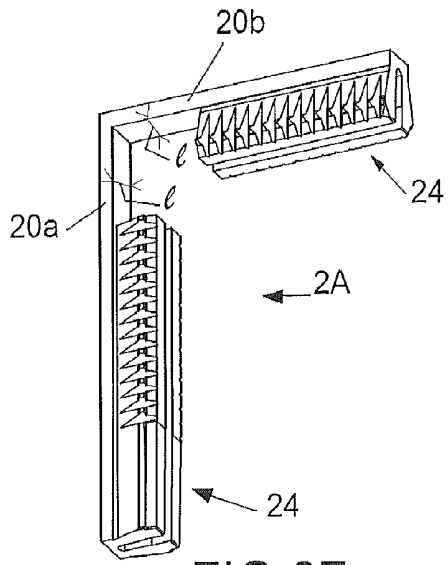


FIG. 27

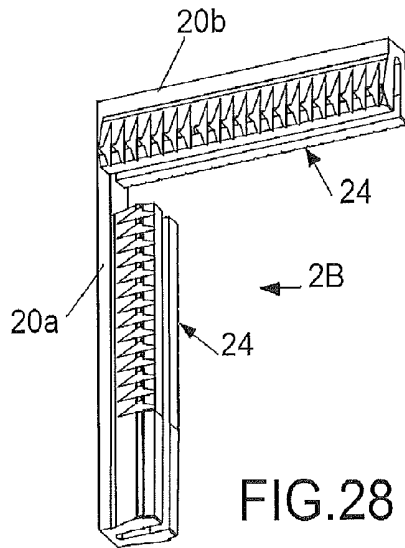


FIG. 28

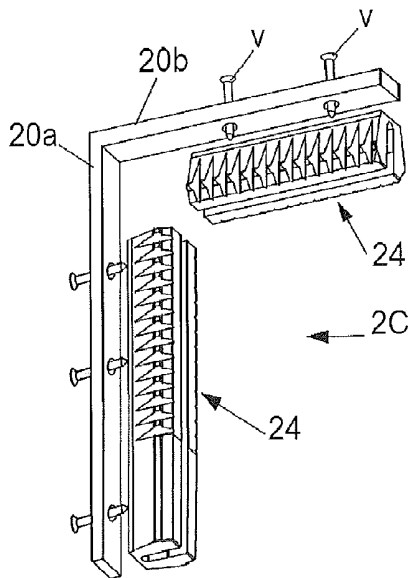


FIG. 29

