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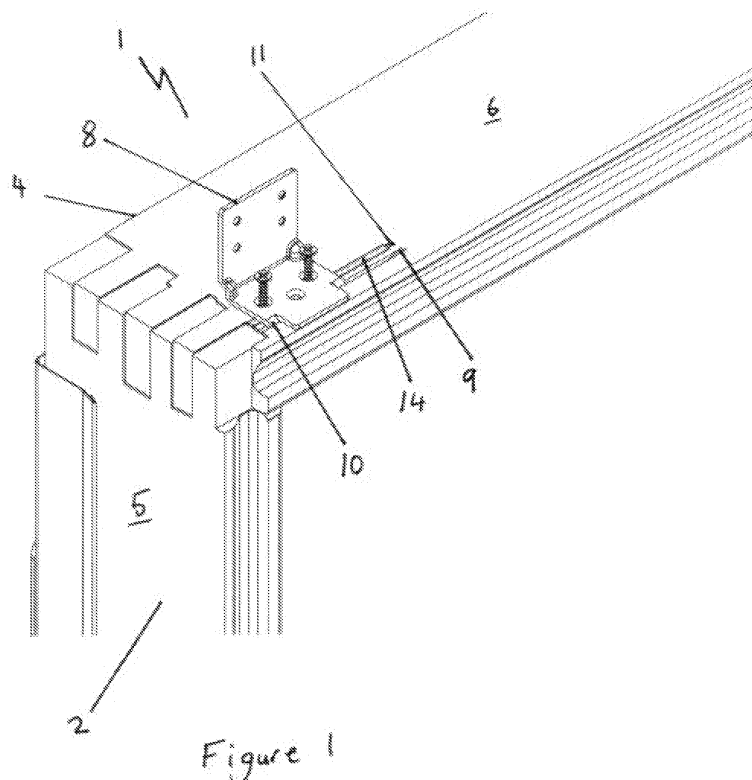
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(54) **An arrangement for mounting a roof window**

(57) An arrangement (1) for installing a roof window (2) at variable depths relative to the planar surface of the roof structure (3) having a roof window (2) with a roof window frame (4), said window frame (4) comprises two side members (5), a top member (6) and a bottom member (7). At least two mounting brackets (8) and a variable depth guide arrangement operable between the roof win-

dow frame (4) and each mounting bracket (8) is provided. The variable depth guide arrangement has at least two spaced apart mounting members (10) and one locating member (9) or at least two spaced apart locating members (9) and one mounting member (10) with the at least two spaced apart locating members (9) having barrier elements (14) mounted therein.



Description

[0001] The present invention relates to an arrangement for mounting a roof window and in particular to an arrangement for mounting a roof window to accommodate different types of tiles and slates and mounting roof windows at variable depths relative to the main plane of the roof.

[0002] Roof windows are often mounted on an inclined surface of a roof to provide skylights into the working and living space of buildings. An opening must be made in the roof to allow a roof window frame to be structurally mounted onto the roof rafters or support structures associated with the rafters. A difficult aspect for the person installing a roof window centers around calculating the distance the roof window frame should protrude out of the inclined surface of the roof in order to sit in flush alignment with the type of roof covering material to be used on the job. Additionally, in view of various types of battens and other roof structure components, an installer is often required to adjust the depth of the roof window frame relative to the roof. When this position is accurately worked out, the installer still has to measure and locate mounting brackets on the frame of the roof window to ensure the roof window protrudes by the required distance. All of this work has to be done on the roof of a building taking into account the particular structural peculiarities of each job. A variety of roof covering materials are available with slates having a depth of 4, 5 or 6 mm requiring the roof window frame to be mounted at one depth relative to the roof. Slates having a depth of 7, 8, 9 or 10 mm and all tiles require the roof frame to be mounted at a second depth relative to the roof.

[0003] Several roof window mounting arrangements have been developed to ease the burden on persons installing roof windows and to allow roof windows to be mounted at different positions/depths relative to the roof. The earliest technologies used mounting brackets with spikes spaced apart horizontally in use for engagement with vertically spaced apart longitudinal grooves cut into the side members of the roof window frame. The longitudinal grooves were spaced apart along the depth of the window frame to allow a range of locations for insertion of the spikes of the mounting brackets. This positional adjustment of the mounting brackets allowed the roof window to be set into the roof at variable depths. Further mounting arrangements provide longitudinal slots in the mounting bracket allowing the installer to adjust the position of the mounting bracket by sliding the bracket along the fixing members via the slot. Other technologies provide a mounting bracket with longitudinal markings having a graduated scale. This allows the installer to select the position that the mounting bracket is fixed to the roof window by screwing fixing members into the mounting bracket at the required position of the graduated scale.

[0004] It is an object of the present invention to provide a novel arrangement to allow roof windows to be mounted to the roof at various depths to accommodate alignment

between the roof window and the roof to accommodate different types of roof covering material for example.

[0005] Accordingly, the present invention provides an arrangement for installing a roof window at variable depths relative to the planar surface of the roof structure comprising a roof window having a roof window frame comprising two side members, a top member and a bottom member, at least two mounting brackets and variable depth guide means operable between the roof window frame and each mounting bracket, the variable depth guide means comprising at least two spaced apart mounting means and one locating means or at least two spaced apart locating means and one mounting means with the at least two spaced apart locating means having barrier means mounted therein.

[0006] Preferably, the locating means are female members and the mounting means are male members.

[0007] In one embodiment of variable depth guide means, the at least two spaced apart locating means are recesses having barrier means removably mounted therein and the mounting means is formed for insertion into the locating means.

[0008] Advantageously, the mounting bracket can not be mounted on the roof window frame until a positive decision has been made regarding which of the two spaced apart mounting means should be removed or which of the barrier means should be removed from which female member. In this way the person installing the roof window is forced into positively discriminating between at least two mounting means or at least two barrier means and so a selection must be made which will determine the depth at which the roof window is mounted onto the roof. This decision is determined by the depth of roof covering material used on the roof in one situation and can be determined by the type of battens used or other considerations which effect the depth that the roof window is to be mounted into the roof.

[0009] In one embodiment, the locating means is provided on the roof window frame and the mounting means is provided on the mounting bracket.

[0010] In a second embodiment, the locating means is provided on the mounting bracket and the mounting means is provided on the roof window frame.

[0011] In a third embodiment, the locating means is provided on a member fixable to the roof window frame and the mounting means is provided on the mounting bracket.

[0012] In a fourth embodiment, the mounting means is provided on a member fixable to the roof window frame and the locating means is provided on the mounting bracket.

[0013] Ideally, the mounting bracket has a roof window frame engaging portion for contacting the roof window frame and a roof engaging portion for contacting the roof.

[0014] Preferably, the roof window frame engaging portion has mounting means protruding there from for insertion into a recess when a barrier member has been removed.

[0015] Ideally, at least one pair of spaced apart recesses having a removable barrier member in each recess is provided on mutually opposing window frame components. Advantageously, the spaced apart recesses are provided on the external surfaces of the top, bottom and/or side members of the roof window frame.

[0016] Preferably, at least one pair of spaced apart recesses having a removable barrier member in each recess is provided on each window frame component.

[0017] Ideally, the pair of spaced apart recesses is provided by a pair of substantially parallel spaced apart longitudinal slots. It will of course be appreciated that the invention is in no way limited to recesses comprising longitudinal slots and that recesses of any shape or size can be used to accommodate the mounting means provided they engage with the mounting means to the degree required to carry out their intended purpose.

[0018] Preferably, the recesses are spaced apart the required distance to ensure the roof window sits in substantial alignment with the roof or roof covering material.

[0019] Ideally, the barrier members are provided with indicia means.

[0020] Preferably, the indicia means comprise a pair of different coloured barrier members. Advantageously, the barrier members with different colours indicate which slot is to be used with which roof covering material. The different colours provide an instantly recognizable visual cue to the person installing the roof window.

[0021] Alternatively, the recesses are provided with indicia means.

[0022] Ideally, the two recesses have different lengths. Advantageously, the recesses with different lengths indicate which recess is to be used with which roof covering material. The different lengths of the recesses provide an instantly recognizable visual cue to the person installing the roof window.

[0023] Alternatively, the mounting means are provided with indicia means. Advantageously, the indicia means indicate which mounting means is to be used with which roof covering material.

[0024] Preferably, the recesses are spaced apart laterally along the width of the component members of the roof window frame.

[0025] Ideally, the mounting means are spaced apart vertically in use.

[0026] Ideally, two pairs of recesses are provided on each component member of the roof window frame.

[0027] Preferably, one pair of recesses are provided on one component member proximal to one corner of the roof window and the other pair of recesses are provided on the same component member proximal another corner of the roof window frame.

[0028] Preferably, fixing means are provided for fixing the mounting bracket to the roof window and the roof.

[0029] Ideally, the mounting bracket comprises an angle bracket. Advantageously, the mounting bracket can be temporarily secured at a corner of the window frame for transport and storage.

[0030] Preferably, the angle bracket has a pair of plate members defining apertures for receiving the fixing means such as wood screws.

[0031] Ideally, the mounting bracket has stiffening means at the angle. Advantageously, the stiffening means increases the strength of the angle bracket.

[0032] Preferably, the mounting bracket is punched from a metal sheet.

[0033] Ideally, the mounting means comprise at least one tongue protruding from the roof window frame engaging portion of the mounting bracket.

[0034] Preferably, the mounting means comprises a pair of tongues protruding from opposing corners of the roof window frame engaging portion of the mounting bracket.

[0035] Ideally, the tongues bend away from the roof window frame engaging portion of the mounting bracket in the same direction as each other.

[0036] Preferably, the barrier members are provided by disposable plug inserts.

[0037] The invention will now be described with reference to the accompanying drawings which show by way of example only one embodiment of an arrangement for mounting a roof window to a roof in accordance with the invention. In the drawings:-

Figure 1 is a partial perspective view of an arrangement for mounting a roof window to a roof;

Figure 2 is a partial perspective view of a first embodiment of a locating arrangement;

Figure 3 is a second partial perspective view of an arrangement for mounting a roof window to a roof;

Figure 4 is a second partial perspective view of a first embodiment of a locating arrangement;

Figure 5 is a third partial perspective view of an arrangement for mounting a roof window to a roof;

Figure 6 is a fourth partial perspective view of an arrangement for mounting a roof window to a roof in a transport/storage position.

[0038] Referring initially to Figures 1 and 2, there is shown an arrangement indicated generally by the reference numeral 1 for mounting a roof window 2 to a roof 3, see Fig. 5. The arrangement 1 is provided to accommodate installing a roof window 2 at variable depths relative to the planar surface of the roof 3. The arrangement 1 has a roof window 2 with a roof window frame 4 made up of components being two side members 5, a top member 6 and a bottom member 7. The arrangement also has at least two mounting brackets 8 and preferably four mounting brackets 8. A variable depth guide arrangement is operable between the roof window frame 4 and each mounting bracket 8. The variable depth guide arrangement has locating members 9 and mounting members 10, the locating members 9 being provided by two spaced apart recesses 11 having barrier elements 14 removably mounted in the recesses 11. The mounting members 10 are formed for insertion into the locating

members 9.

[0039] Advantageously, the mounting bracket 8 can not be mounted correctly on the roof window frame 4 until a positive decision has been made regarding which barrier element 14 should be removed from which recess 11. Alternatively, in the event that two spaced apart mounting members are provided on a mounting bracket and one locating member is provided on the window frame, the installer must make a decision as to which mounting member must be flattened or snapped off. In this way the person installing the roof window 2 is forced into positively discriminating between at least two barrier elements 14 or mounting members and so a selection must be made which will determine the distance the roof window 2 is set into the roof 3. This decision is determined by the depth of roof covering material used on the roof. In Figures 1 and 2, the barrier element 14 proximal to the edge of the roof window 2 has been removed to accommodate 7mm, 8mm, 9mm or 10mm slates or any tiles.

[0040] In the embodiment shown in the drawings, the locating members 9 are provided on the roof window frame 4 and the mounting members 10 are provided on the mounting bracket 8.

[0041] In a second embodiment not shown in the drawings, the locating members are provided on the mounting bracket and the mounting members are provided on the roof window frame. In a third embodiment not shown in the drawings, the locating members are provided on a member fixable to the roof window frame such as a prefixed plate and the mounting members are provided on the mounting bracket. In a fourth embodiment not shown in the drawings, the mounting members are provided on a member fixable to the roof window frame such as a prefixed plate and the locating members are provided on the mounting bracket.

[0042] Referring generally to Figures 3, 4 and 5 of the drawings, the mounting bracket 8 has a roof window frame engaging portion 15 for contacting the roof window frame 4 and a roof engaging portion 16 for contacting the roof 3. The roof window frame engaging portion 15 has mounting members 10 protruding from it for insertion into a recess 11 when a barrier element 14 has been removed. One pair of spaced apart recesses 11 having a removable barrier element 14 in each recess 11 is provided on mutually opposing window frame components 6 and 7. Advantageously, the spaced apart recesses 11 are provided on the external surfaces of the top 6, bottom 7 and/or side members 5 of the roof window frame 4. In figures 3 and 4, the barrier element 14 distal to the edge of the roof window frame 4 has been removed where 4mm, 5mm or 6mm slates are to be fitted to the roof. Whilst different depths of roof covering materials is provided as an example of a situation where a variable depth arrangement is required between the roof window frame and the roof, many other situations arise where the variable depth arrangement of the present invention can be used and the invention is in no way limited to use with different depths of roof covering tiles or slates.

[0043] In an alternative arrangement, one pair of spaced apart recesses 11 having a removable barrier element 14 in each recess 11 is provided on each window frame component 5, 6, 7. The pair of spaced apart recesses 11 is provided by a pair of substantially parallel spaced apart longitudinal slots 21, see Figure 4. It will of course be appreciated that the invention is in no way limited to recesses 11 comprising longitudinal slots 21 and that recesses 11 of any shape or size can be used to accommodate the mounting members 10 provided they engage with the mounting members 10 to the degree required to carry out their intended purpose. The recesses 11 are spaced apart the required distance to ensure the roof window 2 sits in substantial alignment with the roof covering material.

[0044] The barrier elements 14 are provided with an indicia arrangement and in the embodiment shown in the drawings, the indicia arrangement is provided by a pair of barrier elements 14 having a different colour. Advantageously, the barrier elements 14 with different colours indicate which longitudinal slot 21 is to be used with which roof covering material. The different colours provide an instantly recognizable visual cue to the person installing the roof window 2. Alternatively, the recesses 11 are provided with an indicia arrangement where the two recesses 11 have different lengths. Advantageously, the recesses 11 with different lengths indicate which recess 11 is to be used with which roof covering material. The different lengths of the recesses 11 provide an instantly recognizable visual cue to the person installing the roof window.

[0045] The recesses 11 are spaced apart laterally along the width of the component members 5, 6, 7 of the roof window frame 4. In another arrangement, two pairs of recesses 11 are provided on each component member 5, 6, 7 of the roof window frame 4 and this arrangement ensures the roof window frame is securely fixed onto the roof 3. One pair of recesses 11 are provided on one component member 5, 6, 7 proximal to one corner of the roof window 2 and the other pair of recesses 11 are provided on the same component member 5, 6, 7 proximal another corner of the roof window frame 4.

[0046] Fixing members 31, see Figure 6 are provided for fixing the mounting bracket 8 to the roof window 2 and the roof 3, see Figure 5. The mounting bracket 8 is an angle bracket 8. Advantageously, the mounting bracket 8 can be temporarily secured at a corner of the window frame 4 for transport and storage. The angle bracket 8 has a pair of plate members 32, 33 defining apertures 35, 36 for receiving the fixing members 31 such as wood screws. The mounting bracket 8 has stiffening members 37 at the angle and is punched from a metal sheet. Advantageously, the stiffening members 37 increase the strength of the angle bracket 8. The mounting members 10 have a pair of tongues 38 protruding from opposing corners of the roof window frame engaging portion 15 of the mounting bracket 8. The tongues 38 bend away from the roof window frame engaging portion 15 of the mount-

ing bracket 8 in the same direction. The barrier members 14 are provided by disposable plug inserts.

[0047] In use, and referring initially to figure 6, the mounting bracket 8 can be temporarily secured at a corner of the window frame 4 for transport and storage. The angle bracket 8 has a pair of plate members 32, 33 defining apertures 35, 36 for receiving the fixing members 31 such as wood screws to fix the mounting bracket 8 in position for transport. When the roof window 2 is ready to be mounted on a roof 3, the installer removes the wood screws 31 from the apertures 35 and takes the mounting bracket 8 away from the corner of the roof window frame 4. The installer is now confronted with barrier elements 14 located in both recesses 11. The fitting instructions provide the installer with the information that the barrier element 14 proximal to the edge of the roof window frame 4 coloured blue for example must be removed if 7mm, 8mm, 9mm or 10mm slates or any type of tiles are to be fitted to the roof 3 as shown in Figures 1 and 2. Alternatively, if 4mm, 5mm or 6mm slates are to be fitted to the roof, the barrier element 14 distal to the edge of the roof window frame 4 coloured red for example must be removed as shown in Figures 3 and 4. The installer removes the relevant barrier element 14 with a screw driver or the likes and locates the roof window frame engaging portion 15 of the mounting bracket 8 onto the correct position of the roof window frame 4 by locating the tongues 38 into the longitudinal slot 21 with the barrier element 14 removed. The wood screws 31 are now screwed into the roof window frame 4 via apertures 36 to fasten the mounting bracket 8 securely to the roof window 2, see Figures 1 and 3. The installer repeats this procedure at each location of the roof window frame 4 where mounting brackets 8 are to be fixed and the roof window 2 is set into the opening created in the roof 3, see Figure 5. The installer then screws additional wood screws 31 in to the apertures 35 of each mounting bracket 8 to fix the roof window 2 securely to the roof 3.

[0048] The features disclosed in the foregoing description or the following drawings, expressed in their specific forms or in terms of a means for performing a disclosed function, or a method or a process of attaining the disclosed result, as appropriate, may separately, or in any combination of such features be utilised for realising the invention in diverse forms thereof as defined in the appended claims.

Claims

1. An arrangement (1) for installing a roof window (2) at variable depths relative to the planar surface of the roof structure (3) comprising a roof window (2) having a roof window frame (4) comprising two side members (5), a top member (6) and a bottom member (7), at least two mounting brackets (8) and variable depth guide means operable between the roof window frame (4) and each mounting bracket (8),

the variable depth guide means comprising at least two spaced apart mounting means (10) and one locating means (9) or at least two spaced apart locating means (9) and one mounting means (10) with the at least two spaced apart locating means (9) having barrier means (14) mounted therein.

2. An arrangement (1) for installing a roof window (2) as claimed in claim 1, wherein the locating means (9) are female members and the mounting means (10) are male members.
3. An arrangement (1) for installing a roof window (2) as claimed in claim 1 or claim 2, wherein the variable depth guide means has at least two spaced apart locating means (9) provided by recesses (11) having barrier means (14) removably mounted therein and the mounting means (10) is formed for insertion into the locating means (9).
4. An arrangement (1) for installing a roof window (2) as claimed in any one of the preceding claims, wherein the locating means (9) is provided on the roof window frame (4) and the mounting means (10) is provided on the mounting bracket (8).
5. An arrangement (1) for installing a roof window (2) as claimed in any one of claims 1 to 3, wherein the locating means (9) is provided on the mounting bracket (8) and the mounting means (10) is provided on the roof window frame (4).
6. An arrangement (1) for installing a roof window (2) as claimed in any one of claims 1 to 4, wherein the locating means (9) is provided on a member fixable to the roof window frame (4) and the mounting means (10) is provided on the mounting bracket (8).
7. An arrangement (1) for installing a roof window (2) as claimed in any one of claims 1 to 3 and 5, wherein the mounting means (10) is provided on a member fixable to the roof window frame (4) and the locating means (9) is provided on the mounting bracket (8).
8. An arrangement (1) for installing a roof window (2) as claimed in any one of the preceding claims, wherein the mounting bracket (8) has a roof window frame engaging portion (15) for contacting the roof window frame (4) and a roof engaging portion (16) for contacting the roof (3) wherein the roof window frame engaging portion (15) has mounting means (10) protruding therefrom for insertion into a recess (11) when a barrier member (14) has been removed.
9. An arrangement (1) for installing a roof window (2) as claimed in any one of claims 3, 4, 6 or 8, wherein at least one pair of spaced apart recesses (11) having a removable barrier member (14) in each recess

(11) is provided on mutually opposing window frame components.

10. An arrangement (1) for installing a roof window (2) as claimed in claim 9 wherein at least one pair of spaced apart recesses (11) having a removable barrier member (14) in each recess (11) is provided on each window frame component. 5
11. An arrangement (1) for installing a roof window (2) as claimed in any one of claims 3 to 10, wherein the pair of spaced apart recesses (11) is provided by a pair of substantially parallel spaced apart longitudinal slots 21. 10
12. An arrangement (1) for installing a roof window (2) as claimed in any one of claims 3 to 11, wherein the recesses (11) are spaced apart the required distance to ensure the roof window (2) sits in substantial alignment with the roof (3) or roof covering material. 15 20
13. An arrangement (1) for installing a roof window (2) as claimed in any preceding claim, wherein the barrier members (14), the recesses (11) or the mounting means (10) are provided with indicia means. 25
14. An arrangement (1) for installing a roof window (2) as claimed in claim 13, wherein the indicia means comprise a pair of different coloured barrier members (14) or two recesses (11) having different lengths or indicia means on the mounting means (10). 30
15. An arrangement (1) for installing a roof window (2) as claimed in any preceding claim, wherein the at least two spaced apart mounting means (10) are vertically spaced apart in use. 35

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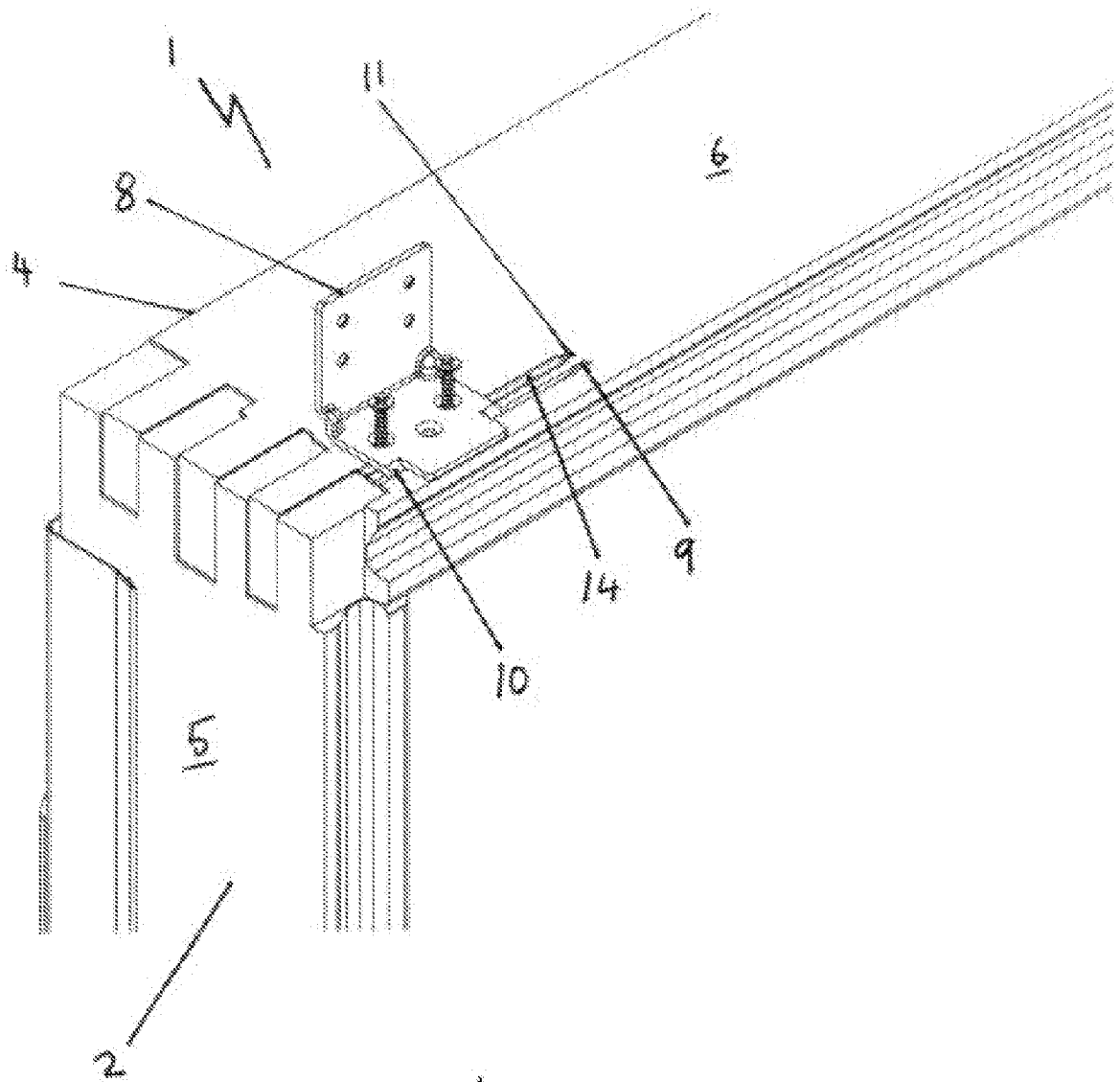


Figure 1

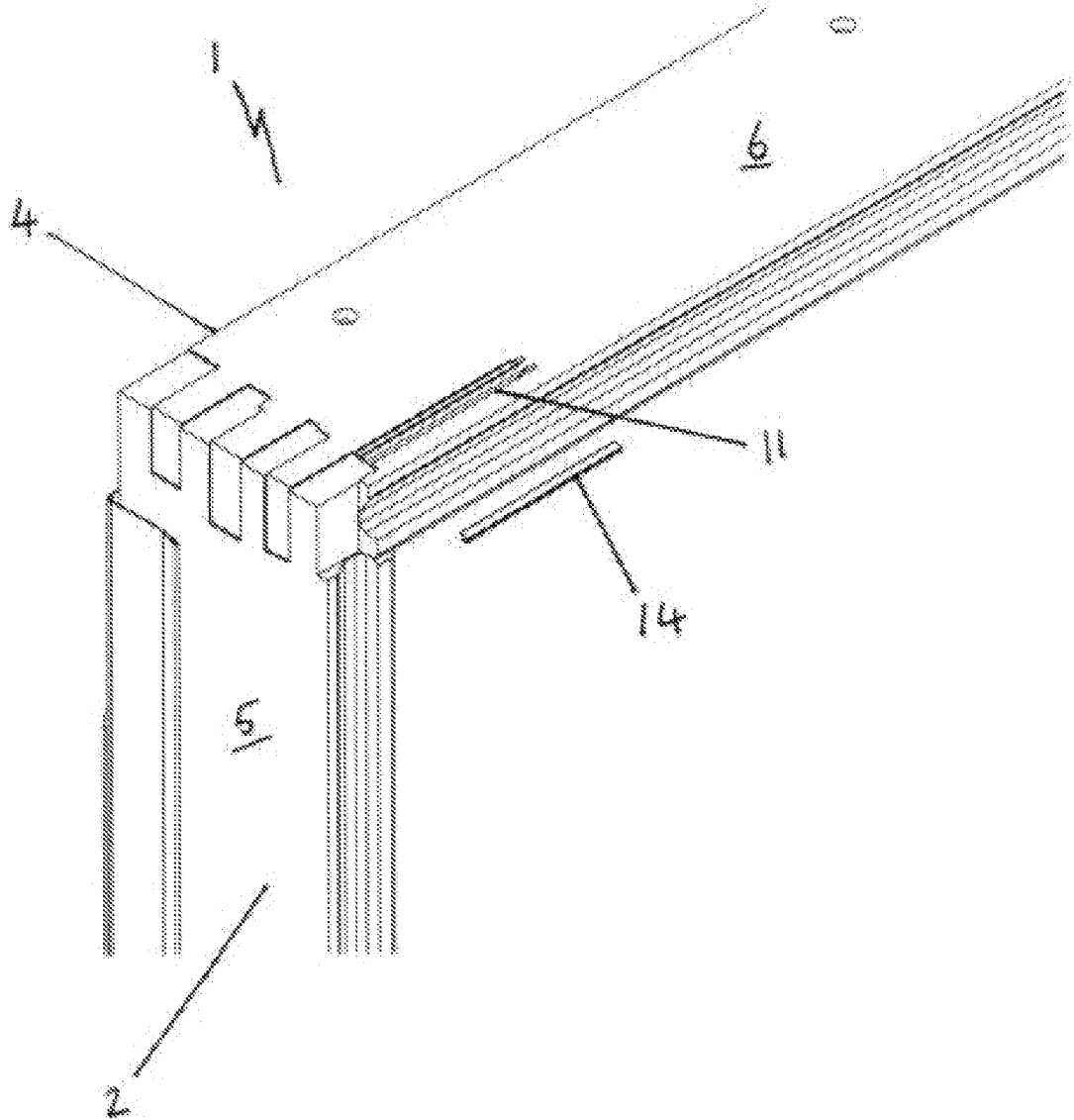


Figure 2

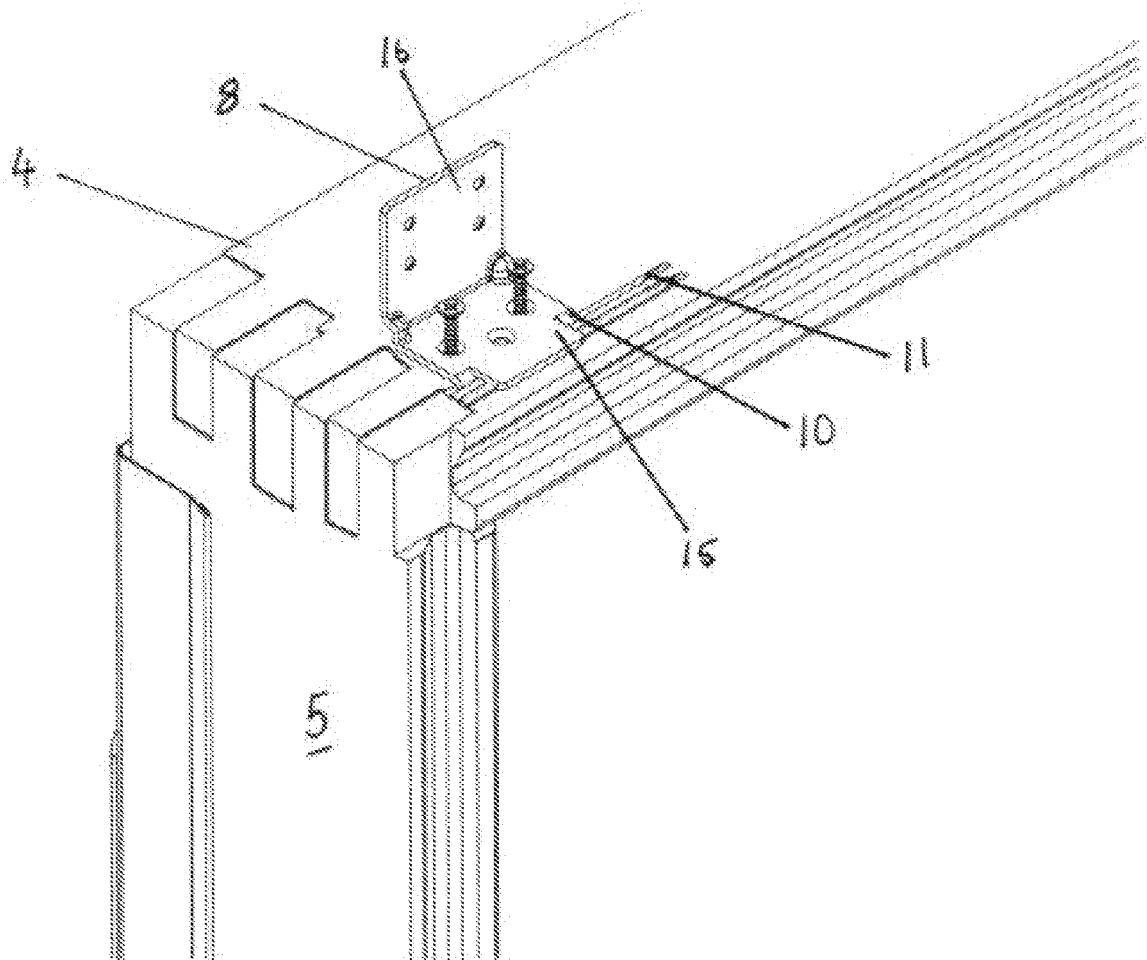


Figure 3

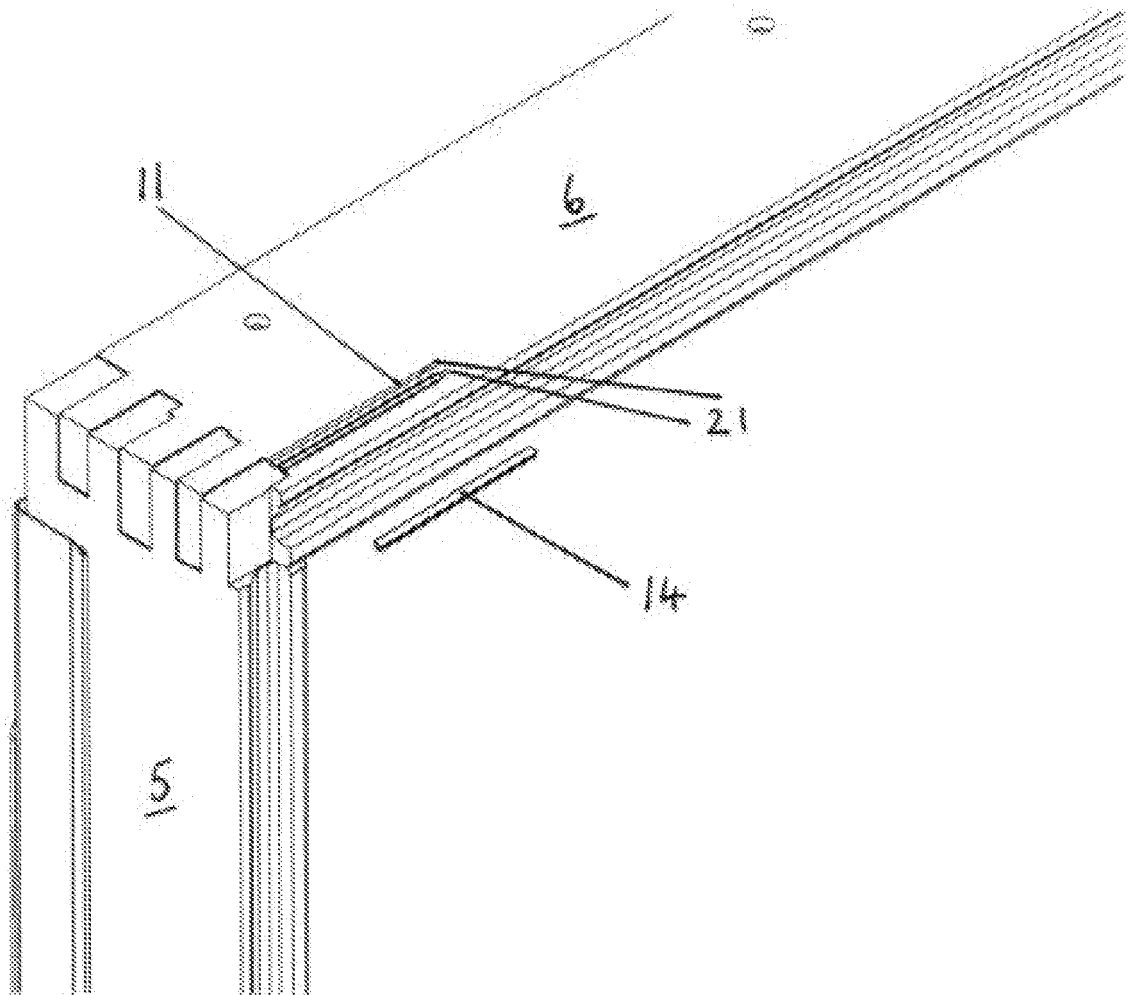


Figure 4

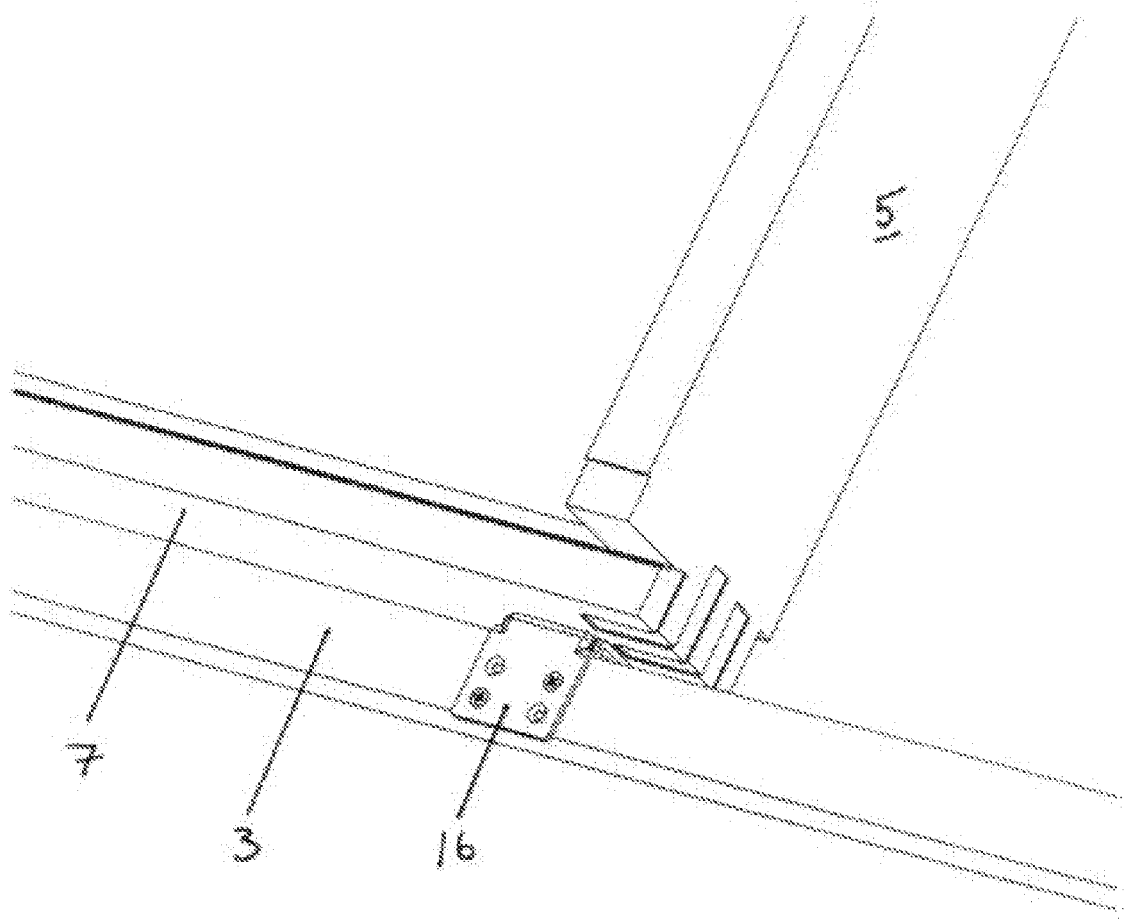


Figure 5

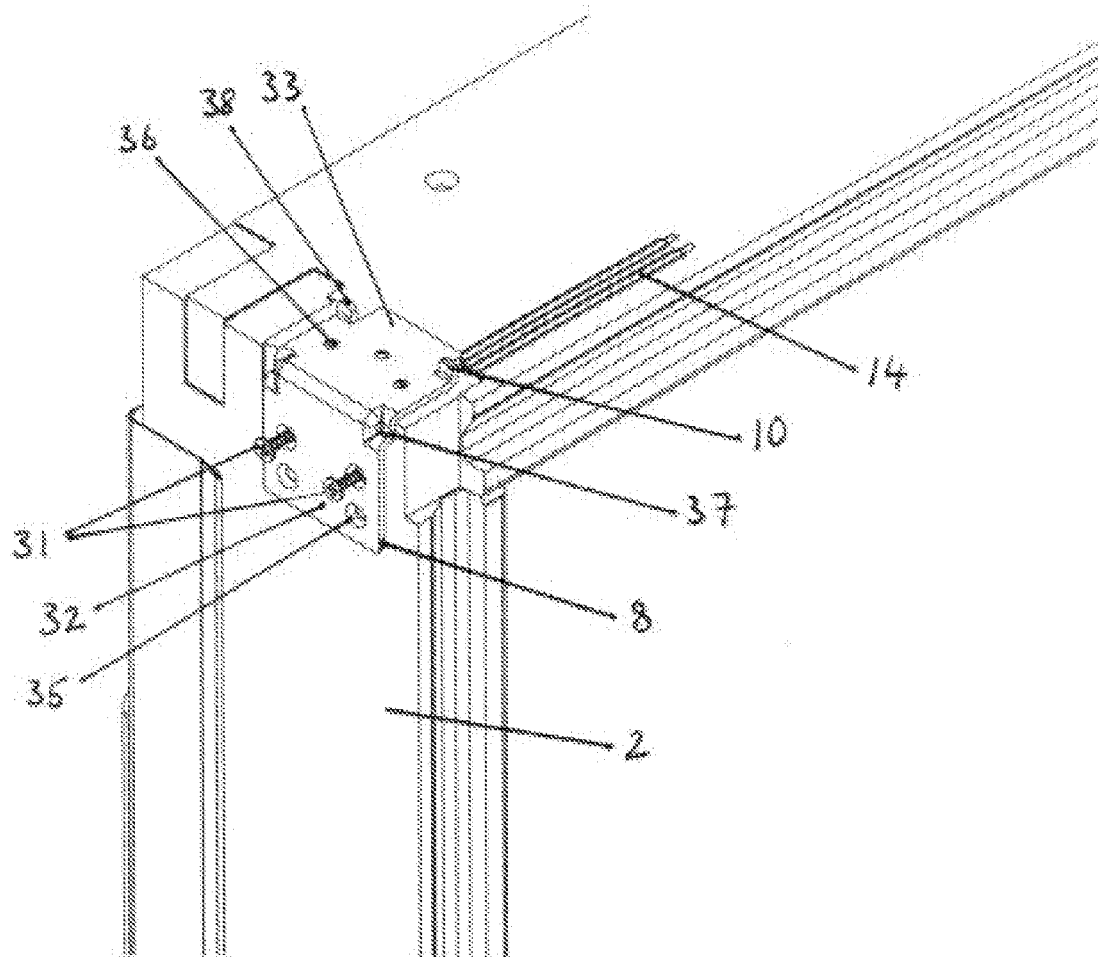


Figure 6