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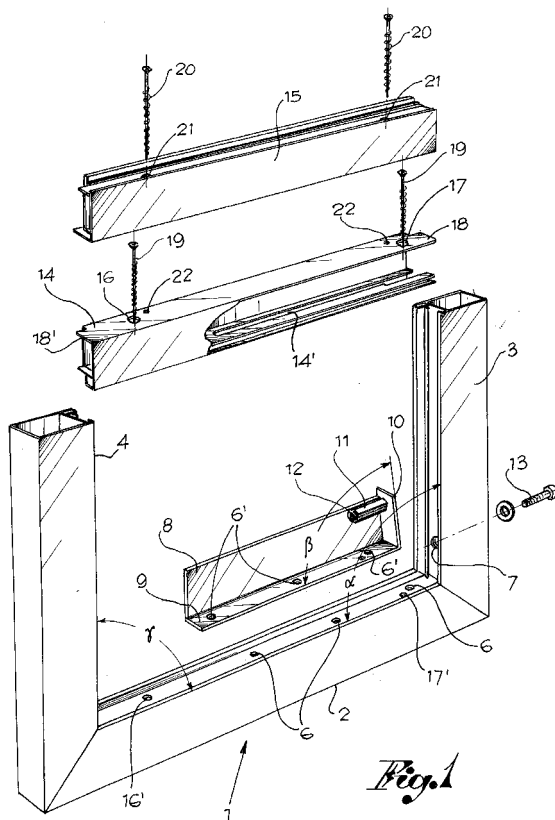
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(54) **PVC frame structure**

(57) This invention refers to a metal frame structure covered in PVC, such as for example a blind, comprising a base (2), two vertical uprights (3-4) and a plate or bracket (8) fastened in a removable way by means of screws to the profile section (5) of base (2). The plate or bracket (8) features a stop (9) for connecting to the base profile section (2) and a vertical upright (10) on which is fitted a sleeve or bush (11) featuring a threaded through hole (12). The structure also features one or two or more crosspieces (14-15, etc.) for fitting between the vertical uprights (3 and 4) of the frame and featuring a housing (14') for accommodating and hiding the plate or bracket (8).



EP 1 382 789 A2

Description

[0001] The present invention consists of a frame structure to which have been fitted reinforcement parts connecting up the single parts of the frame.

State of the Art

[0002] It is well known that one of the most frequent problems, serious enough to affect the good operation of frames with one or more shutters, consists of the fact that the weight of the moving frame and its filling produces, in time, deformations of the corners, inasmuch as these are required to contrast the moments generated by the weights of the masses making up the frame. Such deformations are called corner yielding.

[0003] Corner yielding leads to changes in the shape of moving frames and, therefore, to difficulties in moving these in relation to the coupling clearances with other moving or fixed parts; it also determines no less important aesthetic faults, the frame being a crucial part of the aesthetics of a building.

[0004] What has been so far described is especially noticeable in the case of blinds where the filling does not cooperate successfully with the corners in contrasting the moments generated by the weight and is further enhanced in the case of the frame being made of PVC, as this is an elastic material with a tendency to yield under the action of sunlight and consequent increase in temperature.

Aim and scope of the invention

[0005] The aim of the present invention is to eliminate the aforementioned problems by adopting a frame structure in which new configurations and arrangements of parts have been made, such as to make it more effective and safe as regards its use.

[0006] Such aim will nevertheless appear more evident by making reference to the attached drawing, which is approximate and not limiting, where:

Fig. 1 represents an exploded view of the lower part of the shutter structure; and

Fig. 2 represents in longitudinal section the detail of the shutter corner created by connecting the lower side to the vertical side on which are fitted the devices that permit rotation.

[0007] In agreement with a general form of embodiment, the blind is provided at least with a metal reinforcement part and comprises a base, two vertical uprights and a plate or bracket fastened in a removable way by means of screws to the base structure.

[0008] This plate or bracket is provided with a first stop surface suitable for resting on the base of the structure and a plate upright featuring a second surface suitable at least for a gradual or predefined stop cooperating with

at least one vertical upright of the frame structure. Said second surface of the plate upright defines an angle below 90° hexadecimal with the first stop surface.

[0009] In agreement with another form of embodiment, the plate or bracket features a stop for connecting to the base structure and a plate upright onto which is fitted a sleeve or bush with a threaded through hole. The vertical upright defines an angle β below 90° hexadecimal.

[0010] Advantageously, the plate upright is provided with a threaded hole suitable for receiving the part that protrudes from the frame vertical upright of a screw or tie rod so as to prompt said frame upright towards or in gradual stop against the plate upright.

[0011] Preferably, the frame structure is made from PVC with at least one metal part.

[0012] In accordance with a preferred embodiment, the frame structure also comprises one or two or more crosspieces to be fitted between the vertical uprights and the frame uprights and featuring a housing for accommodating and hiding the plate or bracket.

[0013] In the drawings, 1 globally indicates a moving section of a frame, for instance, a blind in PVC with metal reinforcement or core. This clearly features a base side 2 and two vertical uprights 3 and 4. It can be supposed that side 3 is the upright to which are fitted the devices for rotating the shutter.

[0014] The top surface of the base side 2 and relevant metal core 5 feature a series of holes 6. In the same way, on the vertical upright 3, the profile section features a through hole 7. In agreement with this invention, a plate or bracket 8 is fitted featuring a stop 9 with a series of holes 6' and a plate upright 10 forming angle $\beta < 90^\circ$ with stop 9. On the plate upright 10 is a sleeve or bush 11 featuring a threaded through hole 12.

[0015] When assembling the structure, the stop 9 is secured to base 2 by means of screws 6" in holes 6-6', while the plate upright 10 is secured to frame upright 3 by a screw or tie rod 13 interacting with the threaded hole 12 of sleeve 11.

[0016] The frame in question also features two crosspieces 14 and 15 to be fitted between the vertical uprights 3 and 4. More in detail, crosspiece 14 features a housing 14' for receiving and hiding the plate or bracket 8, and two side surfaces 18 and 18' that coincide with the bottom part of uprights 3 and 4. The crosspiece 14 also features at least two through holes 16 and 17 intended to receive the same number of screws 19 for fastening to base 2. Said screws engage holes 16' and 17' made in base 2 and relevant metal core 5. The crosspiece 15 is in turn made to be fitted between the vertical uprights 3 and 4 and to be fastened on crosspiece 14 by means of screws 20 passing through holes 21 and intended to engage holes 22 made in crosspiece 14.

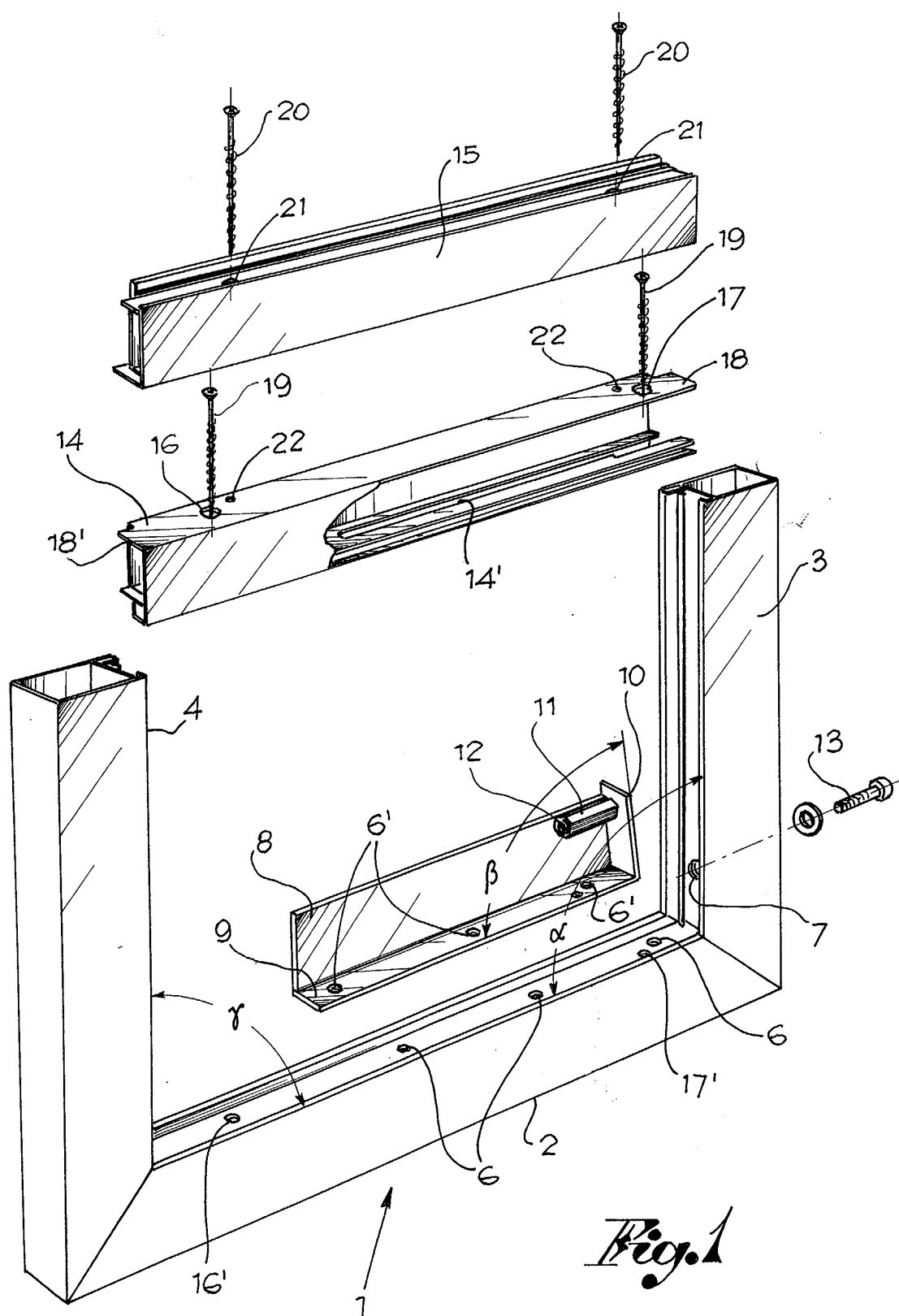
[0017] When assembling the frame, the plate or bracket 8 is fitted to the top surface of base side 2 and to the relevant metal core 5; the crosspieces 14 and 15, fitted between the uprights 3 and 4 are fastened to the

base and to the relevant metal reinforcement 5 (with screws 19) and reciprocally (with screws 20). By means of screw 13, the plate upright 10 of bracket 8 is placed in traction so the angle α defined between base 2 and vertical upright 3 is locked in the desired position. The interposition of crosspieces 14 and 15, whose hiding functions of plate 8 have already been mentioned, helps achieve the aim of the invention, forcing angle γ defined between the base 2 and upright 4 to be locked in position following the stop created between said vertical upright 4 and vertical upright 3 due to interposition of crosspieces 14 and 15.

[0018] It should be noticed that the number of brackets 8 and/or crosspieces 14 and 15 can vary according to need, without however going outside the scope of the invention.

Claims

1. Frame structure provided with at least one metal part, such as for instance a blind, comprising a base (2) and two vertical uprights (3-4), **characterised by** the fact that a plate or bracket (8) is provided fastened in a removable way by means of screws to the profile section (5) of base (2).
2. Frame structure according to claim 1, in which said plate or bracket features a first stop surface (9) suitable for resting on the base of the structure and of a plate upright (10) featuring a second surface suitable at least for a gradual or predefined stop cooperating with at least one vertical upright of the frame structure, said second surface of the plate upright defining with the first stop surface an angle below 90° hexadecimal.
3. Frame structure in accordance with claim 2, where the plate or bracket (8) features a stop (9) for connecting to the base profile section (2) and a plate upright (10) on which is fitted a sleeve or bush (11) featuring a threaded through hole (12), said vertical upright (10) defining with stop (9) an angle β below 90° hexadecimal.
4. Frame structure according to claim 2, where the plate upright features a threaded hole.
5. Frame structure according to claim 3 or 4, in which said threaded hole is suitable for receiving the part protruding from the vertical frame upright of a screw or tie-rod (13) so as to prompt said frame upright towards or in gradual stop against the plate upright.
6. Frame structure according to any one of the previous claims, **characterised by** the fact of being made of PVC with at least one metal part.
7. Frame structure according to any one of the previous claims, **characterised by** the fact that it is provided with one or two or more crosspieces (14-15, etc.) to be fitted between the vertical uprights 3 and 4 of the frame and featuring a housing (14') for accommodating and hiding the plate or bracket (8).



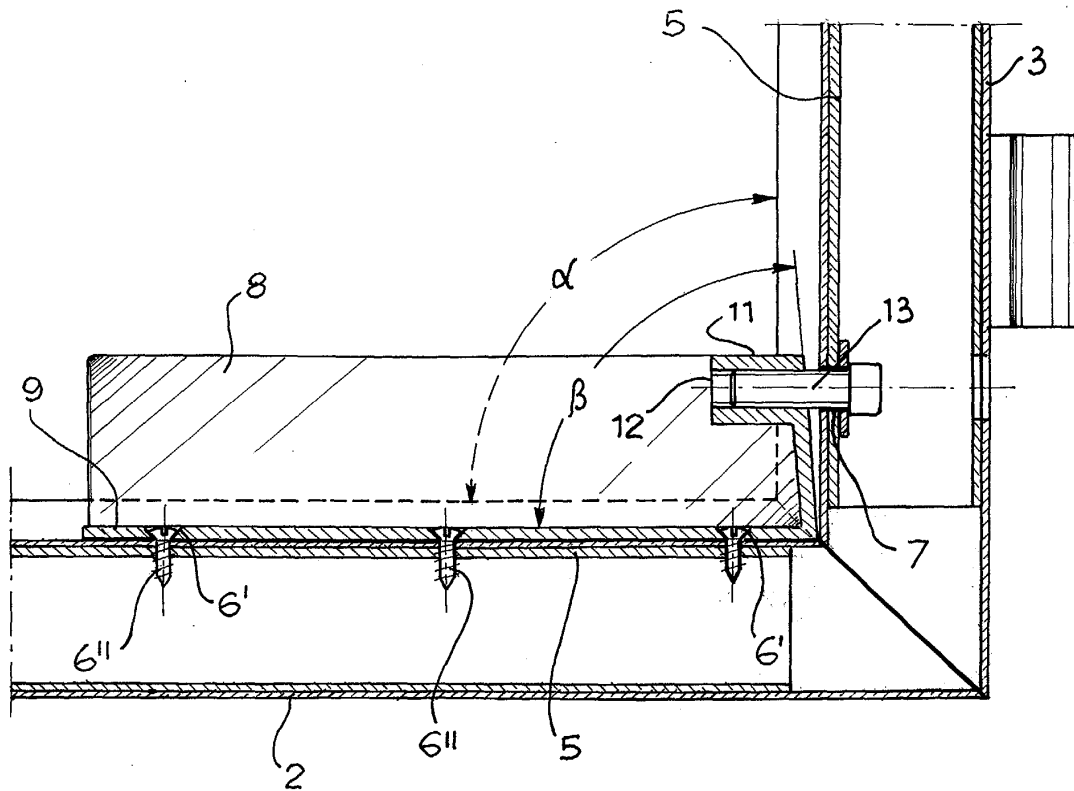


Fig. 2