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(54) A window frame panel assembly for a roof window.

(57) A window frame panel assembly for arrangement in an inclined roof surface comprises opposed parallel side plates (1, 2) as well as top and bottom members (3, 4) of plate material. The vertical side plates (1, 2) have parallel first and second longitudinal side edges (1a, 1b) and end edges (1c, 1d) comprising a first part (5, 6) at right angles to a first longitudinal side edge (1a) and, on the remainder of the width of the side plate (1, 2) a second part (7, 8) inclined with respect to the opposite longitudinal side edge, said second parts diverging against said second side edge to form angles therewith corresponding to the roof inclination. The top and bottom members (3, 4) are formed as curved or bent plate profiles of a cross-sectional shape corresponding to respective ones of the opposed end edges (1c, 1d) of the side plates (1, 2).

After assembling, the side plates and top and bottom members (1-4) of the panel assembly into a rectangular frame structure adaption to the actual roof thickness may be performed by cutting-off from said members at the external side of the panel assembly.

A window frame panel assembly for a roof window

The invention relates to a window frame panel assembly for arrangement in an inclined roof surface, comprising opposed parallel side plates for arrangement in
5 vertical planes at right angles to said roof surface and top and bottom members formed of plate material for arrangement between the side plates at right angles to said vertical planes.

When mounting roof windows in inclined roof sur-
10 faces, it has hitherto been necessary to adapt the frame or panel assembly individually by handycraft production dependent on the dimensions of the actual roof construction.

It is the object of the invention to provide a
15 panel frame assembly, which is suitable for prefabrication and may be supplied with side plates and top and bottom members in a kit, which can easily be assembled in situ and can be quickly mounted by offering a simple possibility for adaption to usual roof thicknesses and
20 inclinations.

According to the invention, this is accomplished in that each plate has parallel first and second longitudinal side edges to be positioned outwardly and inwardly, respectively, when mounting the frame assembly
25 in said roof surface, whereas opposite end edges of each side plate each comprise a first part at right angles to said first side edge and on the remainder of the width of the side plate a second part inclined with respect to said second side edge, said second parts of
30 the end edges of each side plate diverging against said second side edge to form an angle therewith corresponding to the inclination of said roof surface, said top and bottom members being formed as curved or bent plate profiles of a cross-sectional shape corresponding to
35 respective ones of said opposed end edges of the side plates.

With this design, adaption to the actual roof thickness may be performed after assembly of the side plates and top and bottom members of the assembly to a mainly rectangular frame by cutting-off from said plates and members from the side to be positioned outwardly when subsequently mounting the assembly within the part of the width of the frame assembly, in which the surfaces of the top and bottom members facing each other are parallel.

- 10 In order to obtain an optimum light area, a preferred embodiment of the frame panel assembly is designed so that said second parts of the opposed end edges of each side plate form an angle of substantially 90° with each other. Thereby, when mounting the frame panel assembly, the aesthetically attractive effect is additionally obtained that the underside of the internal part of the top member facing the roof room in question extends substantially horizontal, whereas the internal part of the bottom member extends substantially vertical.
- 20 In a symmetric design of the side plates, by which said second parts of the opposed end edges of each side plate form equal angles with said second side edge, the frame panel assembly according to the invention will be suitable for roof inclinations between approximately
- 25 40° and 50° .

As another possibility, the side plates may be designed asymmetrically in that said second parts of the opposed end edges of each side plate form angles of different size with said second side edge. Thereby, the same design of the frame panel assembly may be used for two mutually complementary roof inclinations, such as 30° and 60° .

In the accompanying drawings,

Fig. 1 shows an embodiment of a window frame panel assembly according to the invention prior to assembling;

Fig. 2 illustrates adaption of the frame panel assembly to an actual roof thickness; and

Fig. 3 shows another embodiment of the side plates of the frame panel assembly.

As shown in Fig. 1, a frame panel assembly according to the invention comprises two opposed parallel side plates 1 and 2 for arrangement in vertical planes at right angles to an inclined roof surface, as well as a top member 3 and a bottom member 4. In order to obtain an aesthetically attractive effect, these panel members are preferably made of wood plate.

Each of the side plates 1 and 2 has a first longitudinal side edge 1a and a second longitudinal side edge 1b, which are parallel and adapted for arrangement outwardly and inwardly, respectively, when mounting the panel assembly in a roof surface, as well as opposed end edges 1c and 1d. At the longitudinal side edge 1a, the end edges 1c and 1d are formed with first parts 5 and 6 extending at right angles to the longitudinal side edge 1a through, for instance, a portion of $1/3$ to $1/2$ of the total width of the side plate 1.

On the remainder of the width of the side plate 1, the end edges 1c and 1d have inclined parts 7 and 8, respectively, diverging against the other longitudinal side edge 1d and forming angles therewith corresponding to the inclination of the roof surface.

Corresponding to these contours of the end edges of the side plates, the top member 3 and the bottom member 4 are formed as curved or bent plate profiles, the cross-sectional shape of which comprises two parts as shown at 9 and 10, forming an angle with each other corresponding to the angle between the two parts of the opposed end edges of the side plates 1 and 2. The top member 3 and the bottom member 4 may, as desired, be formed either with sharp edges or with a more or less curved transition between the parts 9 and 10.

As apparent from Fig. 1, the frame panel assembly may be supplied with the side plates 1 and 2, the top member 3 and the bottom member 4 in a kit so as to allow

assembling in situ of the parts. In order to facilitate assembling, the end portions of the side plates and the ends of the top and bottom members abutting thereagainst may be designed with pre-drilled bores, as shown at 11, 5 for receiving screws 12.

In the mounting of the frame panel assembly, the side plates 1 and 2 and the top and bottom members 3 and 4 are initially assembled into a mainly rectangular frame structure. As shown in Fig. 2, such a frame structure 13 may be adapted to the actual roof thickness by cutting-off from the side, at which the surfaces of the top and bottom members 3 and 4 facing each other, i.e. the parts 9, are substantially parallel. Subsequently, the frame structure 13 may be in a simple way inserted 15 into a pre-formed window opening, since the members of the frame panel assembly are dimensioned according to usual standard sizes of roof windows. After mounting, the frame panel assembly is finished by affixing frame strips as shown at 14 in Fig. 1. Since the side plates 20 1 and 2 are designed so that the inclined parts 7 and 8 of their end edges 1c and 1d form an angle of substantially 90° with each other, a great light area towards the interior of the roof room will be obtained in the symmetrical embodiment shown in Fig. 1, in which the 25 inclined parts 7 and 8 each form an angle of 45° with the inward longitudinal side edge 1b of the side plate. Moreover, at a usually occurring roof inclination between 40° and 50° , it is obtained that the internal part of the top member 3 will extend substantially horizontal, 30 whereas the internal part 10 of the bottom member 4 will extend substantially vertical.

In the modified embodiment in Fig. 3, the side plate 15 is designed asymmetrically, so that the inclined parts 16 and 17 of the end edges 18 and 19 form 35 angles of different size with the internal longitudinal side edge 20. Also in this embodiment, the angle between the inclined parts 16 and 17 is 90° .

With this design, the same frame panel assembly may be used for roffs having complementary inclinations by turning the side plates 15 upside down and interchanging the top and bottom members, which are not illustrated, but may be designed in the same way as in the embodiment shown in Fig. 1 as curved or bent plate profiles having a cross-sectional shape corresponding to the contours of the respective end edges 18 and 19.

The angles of different size between the parts 16 and 17, respectively, and the longitudinal side edge 20 are preferably in the ranges $20-45^{\circ}$ and $45-70^{\circ}$, respectively, so that one angle may, for instance, be approximately 30° and the other angle approximately 60° , as illustrated.

Thus, also in this embodiment, the above mentioned orientation of the internal parts of the top and bottom members may be achieved.

P A T E N T C L A I M S

1. A window frame panel assembly for arrangement in an inclined roof surface, comprising opposed parallel side plates (1, 2; 15) for arrangement in vertical planes at right angles to said roof surface and top and bottom members (3, 4) formed of plate material for arrangement between the side plates (1, 2; 15) at right angles to said vertical planes, characterized in that each side plate (1, 2; 15) has parallel first and second longitudinal side edges (1a, 1b; 20) to be positioned outwardly and inwardly, respectively, when mounting the frame assembly in said roof surface, whereas opposite end edges (1c, 1d; 18, 19) of each side plate (1, 2; 15) each comprise a first part (5, 6) at right angles to said first side edge (1a) and on the remainder of the width of the side plate (1, 2; 15) a second part (7, 8; 16, 17) inclined with respect to said second side edge (1b; 20), said second parts (7, 8; 16, 17) of the end edges (1c, 1d; 18, 19) of each side plate (1, 2; 15) diverging against said second side edge (1b; 20) to form an angle therewith corresponding to the inclination of said roof surface, said top and bottom members (3, 4) being formed as curved or bent plate profiles of a cross-sectional shape corresponding to respective ones of said opposed end edges (1c, 1d; 18, 19) of the side plates (1, 2; 15).

2. A window frame panel assembly as claimed in claim 1, characterized in that said second parts (7, 8; 16, 17) of the opposed end edges (1c, 1d; 18, 19) of each side plate (1, 2; 15) form an angle of substantially 90° with each other.

3. A window frame panel assembly as claimed in claim 1 or 2, characterized in that said second parts (7, 8) of the opposed end edges (1c, 1d) of each side plate (1, 2) form equal angles with said second side edge (1b).

4. A window frame panel assembly as claimed in claim 2, characterized in that said second parts (16, 17; 7, 8) of the opposed end edges (18, 19) of each side plate (15) form angles of different size with said
5 second side edge (20).
5. A window frame panel assembly as claimed in claim 4, characterized in that said different angles are in the ranges $20-45^{\circ}$ and $45-70^{\circ}$, respectively.

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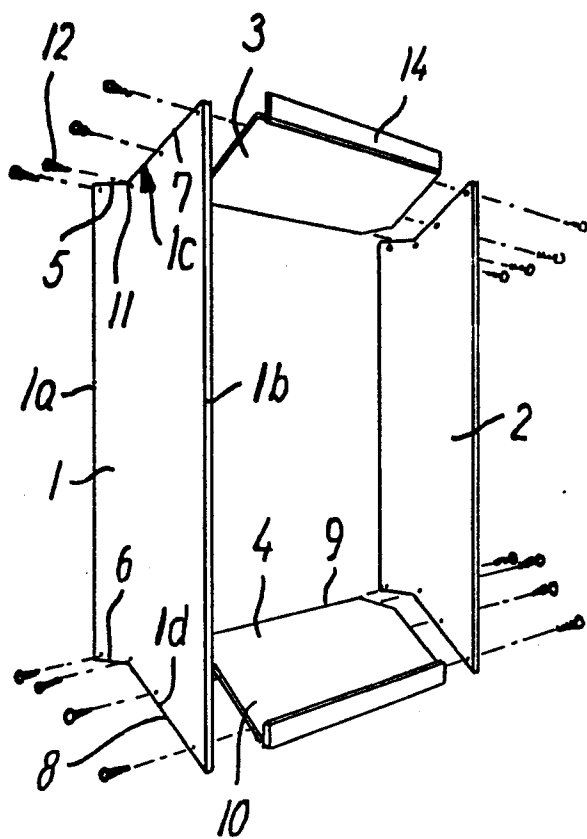


FIG. 1

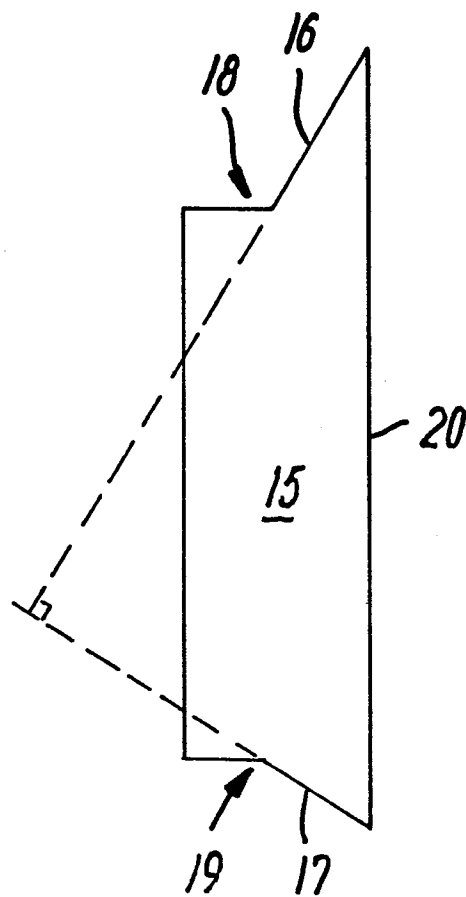


FIG. 3

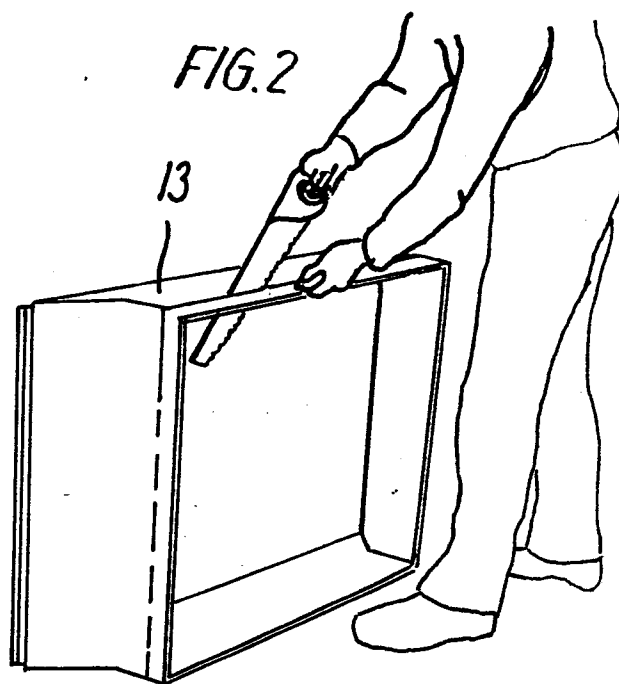


FIG. 2