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(54) **ROOF WINDOW**

DACHFENSTER

FENÊTRE DE TOIT

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Description

[0001] The subject of the invention is a roof window.

[0002] Known are roof windows with a rectangular window frame and a rectangular sash frame, consisting of elements with straight longitudinal edges. The surfaces determined by the external upper edges and the internal bottom edges of the elements of the frame and the sash constitute flat planes, which are parallel to each other. Also the glass pane set in the frame of the sash, is flat. These windows are provided with flat protective elements, usually metallic ones at the sash frame and the window frame protruding above the roof surface. WO 95/28535-A1 discloses such a roof window, according to the preamble of claim 1.

[0003] The roof windows, together with their protective elements, are set on inclined flat roofs by means of angular assembly elements fixed by one arm to the external edge of the window frame and resting by the second arm on the rafters, battens, or roof boarding. The window frame protrudes slightly above the roof surface. The connection of the frame with the roofing is sealed by a flange or collar, the cross section of which is angular.

[0004] The sealing flange has a resting plane in form of a rectangular frame, with the internal perimeter according the external perimeter of the roof window frame. That flange consists usually of four moulded elements - one lower, two side ones, and one upper, with overlapping joints. Erection begins with the bottom element, then the two side elements are being set, and is completed by setting the upper element. The elements placed first are being covered by ones laid subsequently.

[0005] In the case of roofs being curved in the vertical section, perpendicular to the apex, the arranging of flat roof windows with suitable covers and a flange is demanding, and their joining with a convex or concave roof does not warrant proper usage and esthetical values.

[0006] The aim of the invention is providing a roof window with shields and a sealing flange for roof mounting, which in its vertical cross plane perpendicular to the apex has the form of an arch, and whose external window surface protrudes above the roof and is parallel to the roofing.

[0007] This aim is solved by a roof window according to claim 1 having a window frame and a glazed sash. The frame of the window and the sash frame consist each of four elements connected to form a closed perimeter loop, in which two opposite elements of each frame have their longitudinal edges straight, and the two remaining opposite elements of each frame have their upper, external edges curved, whereas the lower, inner longitudinal edges of these elements can be of any form. The frame of the sash holds a glass pane, the surface of which can also be arched, parallel to the upper, curved edges of the elements of the sash, or flat.

[0008] The sash is connected with the window frame by hinges fixed to the elements of the frame and the sash having their external, upper longitudinal edges curved or

on elements having their external, upper longitudinal edges straight.

[0009] The elements of the window frame and sash are shielded by formed protective elements made of sheet metal, the longitudinal edges of which are parallel to the longitudinal edges of the window elements being shielded.

[0010] The frame of the installed window sticks out a little above the surface of the roof, and its connection with the roofing is sealed by a multi-element sealing flange made of properly profiled sheet metal. The flange has a supporting surface in form of a frame with its inner perimeter corresponding to the outer perimeter of the window frame, the supporting surface being curved to form an arch, copying the form of the curved roof surface.

[0011] The supporting surface is connected with a four-walled casing having the inner perimeter fitting to the external perimeter of the roof window frame. The upper longitudinal edges of the casing copy the form of the inner edges of the window frame and the longitudinal bottom edges copy the form of the inner edges of the supporting surface frame. The sealing flange consists most frequently of four elements, a lower, two side ones, and one upper, connected by overlapping joints. Assembly starts by the bottom element, then the two side elements are put on, and finally the upper one is set. The flange element laid first is partly covered by the elements laid subsequently.

[0012] The roof window according the invention is presented in the drawings, of which Fig. 1 shows the view of the roof window with the sash turned open, together with the shielding elements and the sealing flange, while Fig. 2 shows the roof window in exploded view.

Example

[0013] The roof window has a frame 1 and a glazed sash 2. The frame of the window 1 and the frame of sash 2 consist each of four elements, two longer ones 1a and 2a, and two shorter ones 1b and 2b, connected together at right angles, forming a closed rectangular perimeter. All longitudinal edges of the elements 1b and 2b are straight, while the longitudinal edges of the longer elements 1a and 2a are curved. In the sash frame 2 is set the pane 3, the surface of which is parallel to the plane determined by the longitudinal, curved edges of the elements 1a and 2a. The frame of the sash 2 and the frame of the window 1 are connected by hinges set at half length of the elements 1a and 2a having curved longitudinal edges. The window frame 1 and the sash frame 2 are covered at the top and along the external sides by shielding elements made of profiled sheet metal, which, in the case of elements shielding the shorter elements 1b and 2b of the window frame 1 and sash 2, have all their longitudinal edges straight, whereas in the case of the longer elements 1a and 2a of the window frame 1 and the sash 2 they are curved.

[0014] The shielding elements with curved longitudinal

edges consist of the lower part 4 connected with the elements of 2a of the sash frame 2 below the hinges, and of the upper part 5 shielding the elements 2a above the hinges and connected with the elements 1a of the window frame 1, the bottom ends of the shielding elements 5 extending above the upper ends of the shielding elements 4. The window is provided with a sealing flange consisting of the upper element 6, two side elements 7, and the bottom element 8. Each element of the sealing flange has a supporting surface, correspondingly 6a, 7a, and 8a, adhering to the surface of the rafter framing, and a faying face 6b, 7b, and 8b abutting to the side face of the window frame 1 protruding above the external surface of the rafter framing. The longitudinal edges of the elements 6, 7, and 8 of the flange are parallel to the upper edges of the longitudinal elements 1a and 1b of the roof window frame 1.

[0015] The roof window sash 2 turns freely about its horizontal turning axis determined by the hinges, and the upper surface of the sash, determined by external, upper edges of the elements of the sash frame 2 together with the shields lies in a plane parallel to the roofing plane.

Claims

1. The roof window has a fixed window frame and a glazed sash, the frames (1,2) of which consist each of four elements joined to form a closed perimeter, and of shielding elements (4,5) set on the elements of the window frame (1) and sash frame (2), and has also a flange (6-8) sealing the joint of the window with the roofing, the sash being connected with the fixed window frame (1) by hinges, wherein two opposite elements (1b) and (2b) of the window frame (1) and sash frame (2), as well as their corresponding shielding elements and the corresponding elements (6) and (8) of the sealing flange have all their longitudinal edges straight, **characterised in that**, the two remaining elements (1a) and (2a) of the window frame (1) and sash frame (2) have their upper external edges curved, and also the corresponding shielding elements (4) and (5), and the element (7) of the sealing flange have all their longitudinal edges curved.
2. Roof window according to claim 1, **characterized in that** the surface of the pane (3) set into the sash (2) is parallel to the surface determined by upper, external edges (2a) of the sash frame (2).
3. Roof window according to claim 1 or 2 **characterized in that** the elements (1a) and (2a) of the window frame (1) and sash frame (2) having their upper external edges curved in form of arches, have also their lower longitudinal edges curved in form of arches.
4. Roof window according to claim 1, **characterized**

in that the elements (1a) and (2a) of the window frame (1) and sash frame (2) having their upper external edges curved, have their lower longitudinal edges straight.

5. Roof window according to claim 4, **characterized in that** in the sash (2) is set a pane (3) having a flat surface.

Patentansprüche

1. Das Dachfenster hat eine feste Fensterzarge und einen verglasten Fensterflügel. Jeder der Flügelrahmen (1, 2) besteht aus vier miteinander formschlüssig verbundenen Teilen und aus Verkleidungen (4, 5), die auf den Teilen der Zarge (1) des Flügelrahmens (2) befestigt sind, es hat auch einen Dichtflansch (6-8), der die Verbindung des Fensters mit der Dachdeckung abschließt, wobei der Fensterflügel mit der festen Fensterzarge (1) mit Fensterbändern verbunden ist, zwei Gegenteile (1b) und (2b) der Fensterzarge (1) und des Flügelrahmens (2) und denen entsprechende Verkleidungen sowie entsprechende Teile (6) und (8) des Dichtflansches haben alle geraden Längskanten, **dadurch gekennzeichnet, dass** zwei übrige Teile (1a) und (2a) der Fensterzarge (1) und des Flügelrahmens (2) obere gekrümmten Kanten haben, und denen entsprechende Verkleidungsteile (4) und (5) sowie Teil (7) des Dichtflansches haben alle gekrümmten Längskanten.
2. Das Dachfenster gemäß Anspruch 1, **dadurch gekennzeichnet, dass** die Glasoberfläche (3) am Fensterflügel (2) parallel zur durch obere äußere Kanten (2a) des Flügelrahmens (2) bestimmte Oberfläche ist.
3. Das Dachfenster gemäß Anspruch 1 oder 2, **dadurch gekennzeichnet, dass** die Teile (1a) und (2a) der Fensterzarge (1) und des Flügelrahmens (2) mit äußeren oberen bogenartig gekrümmten Kanten auch untere bogenartig gekrümmten Längskanten haben.
4. Das Dachfenster gemäß Anspruch 1, **dadurch gekennzeichnet, dass** die Teile (1a) und (2a) der Fensterzarge (1) und des Flügelrahmens (2) mit äußeren gekrümmten oberen Kanten gerade untere Längskanten haben.
5. Das Dachfenster gemäß Anspruch 4, **dadurch gekennzeichnet, dass** am Fensterflügel (2) flachflächiges Glas (3) eingesetzt ist.

Revendications

1. La fenêtre de toit possède le dormant fixe et le battant vitré dont chaque châssis de fenêtre (1, 2) se compose de quatre éléments liés entre eux d'une telle façon pour créer le circuit fermé ainsi que d'éléments de protection (4, 5) montés sur les éléments du dormant (1) du châssis du battant de fenêtre (2) et aussi possède la bride (6-8) étanchant l'assemblage de la fenêtre avec le revêtement du toit mais le battant de fenêtre est lié au dormant fixe (1) à l'aide des charnières et les deux éléments opposés (1b) et (2b) du dormant (1) et du châssis du battant de fenêtre (2) et les éléments de protection leur correspondant et les éléments adéquats (6) et (8) de la bride d'étanchéité possèdent tous les bords longitudinaux droits **caractérisés en ce que** deux autres éléments (1a) et (2a) du dormant (1) et du châssis du battant de fenêtre (2) possèdent les bords supérieurs qui sont pliés ainsi que des éléments de protection leur correspondant (4) et (5) et un élément (7) de la bride d'étanchéité possèdent tous les bords longitudinaux pliés.

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2. La fenêtre de toit selon la revendication 1 **caractérisée en ce que** la surface du vitre (3) monté sur le battant de fenêtre (2) est parallèle à la surface déterminée par les bords supérieurs extérieurs (2a) du châssis du battant de fenêtre (2).

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3. La fenêtre de toit selon la revendication 1 ou 2 **caractérisée en ce que** les éléments (1a) et (2a) du dormant (1) et du châssis du battant de fenêtre (2) dont les bords supérieurs pliés en forme d'arcs possèdent aussi les bords inférieurs longitudinaux pliés en forme d'arcs.

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4. La fenêtre de toit selon la revendication 1 **caractérisée en ce que** les éléments (1a) et (2a) du dormant (1) et du châssis du battant de fenêtre (2) dont les bords supérieurs extérieurs sont pliés possèdent aussi les bords inférieurs longitudinaux droits.

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5. La fenêtre de toit selon la revendication 4 **caractérisée en ce que** dans le battant de fenêtre (2) est monté le vitre (3) dont la surface est plate.

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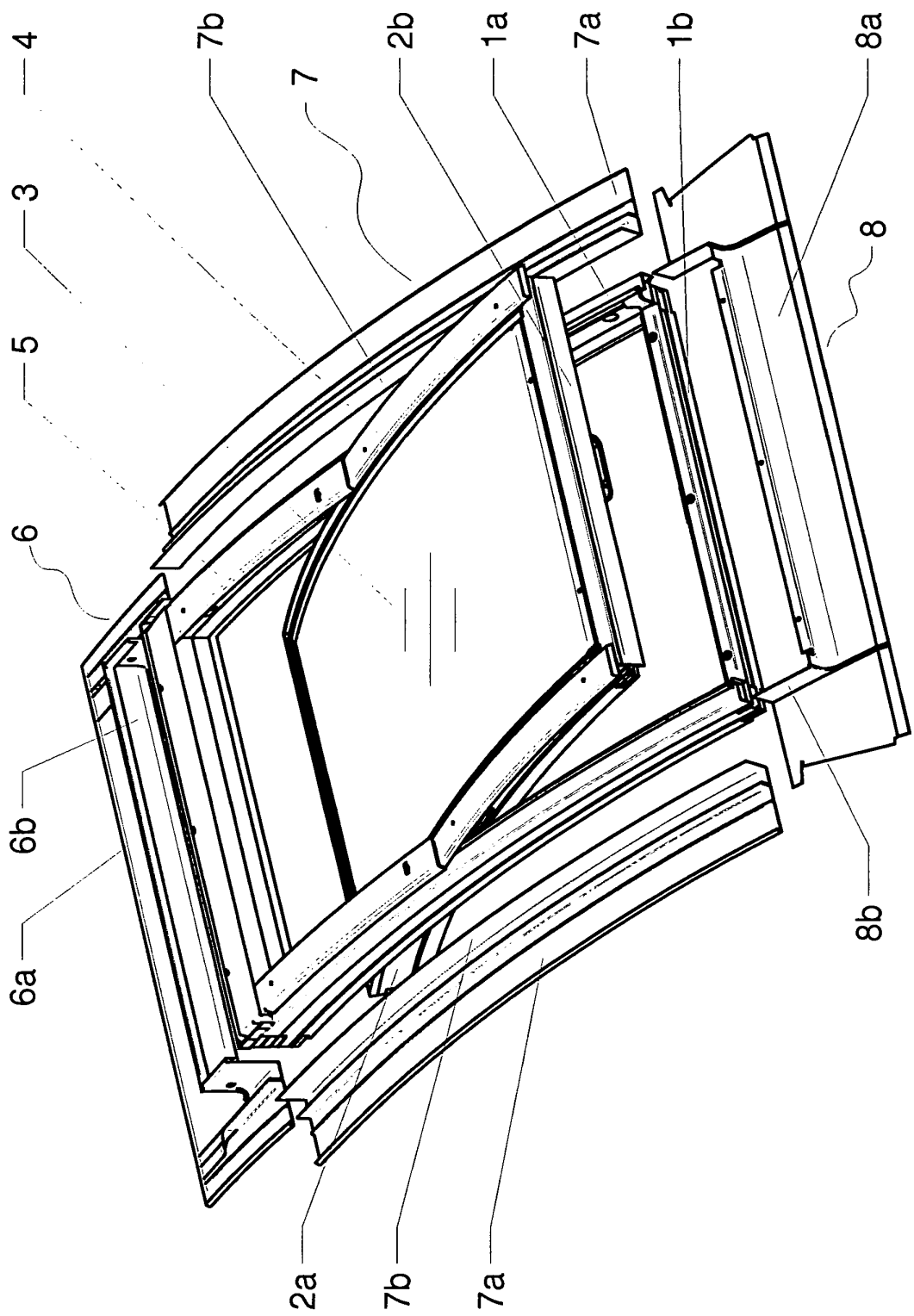


Fig. 1

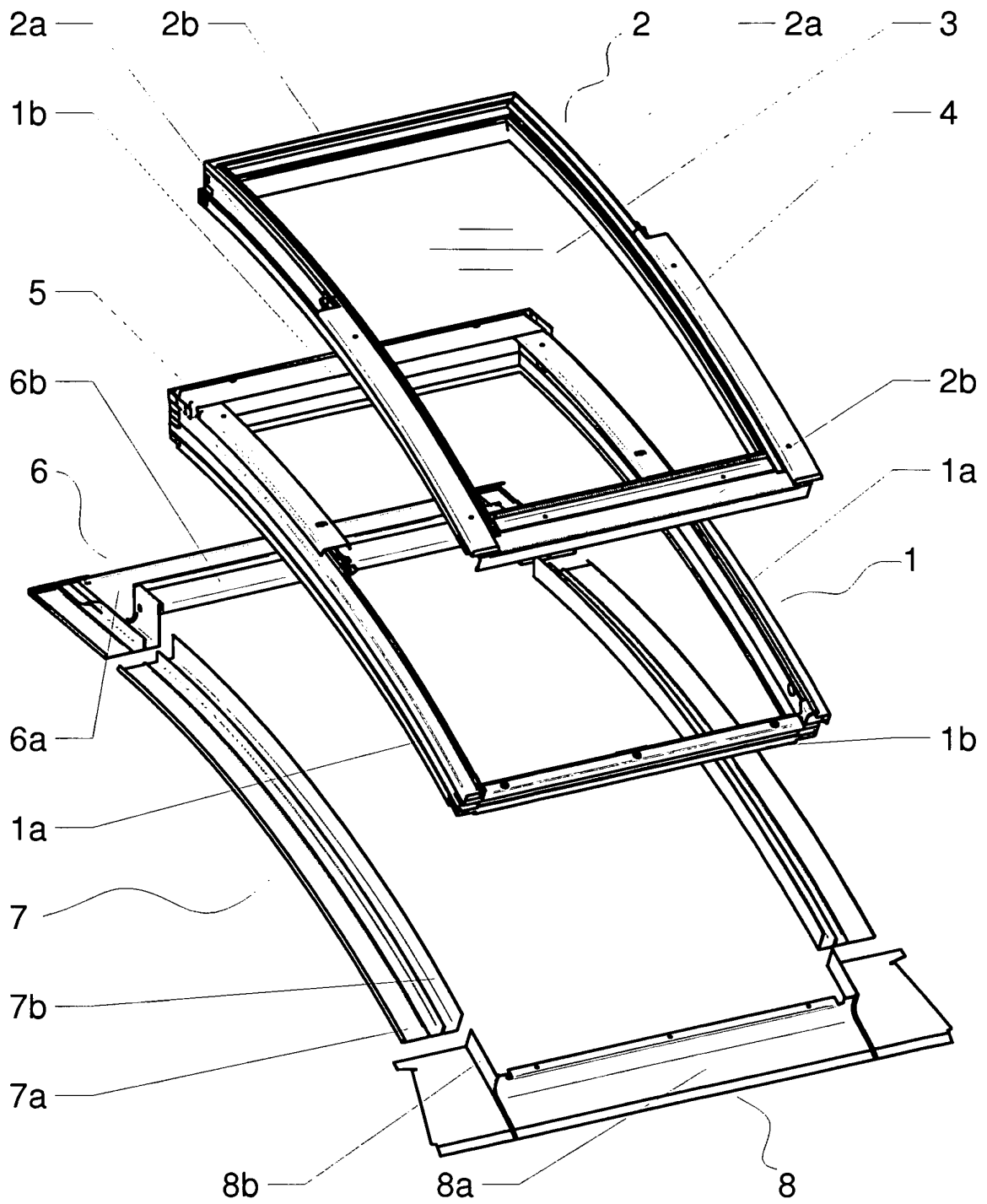


Fig. 2

REFERENCES CITED IN THE DESCRIPTION

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