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(54) **WINDOW FRAME WITH FILLING PROFILE**

FENSTERRAHMEN MIT FÜLLPROFILEN

CHÂSSIS DE FENÊTRE AVEC PROFILÉS DE REMPLISSAGE

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Description

[0001] The object of the invention is a welded thermo-plastic frame for a roof window with an infill profile.

[0002] A skylight with at least one plastic frame was disclosed under patent GB2099899A. The skylight frame is made of stiles connected at frame corners using a welding method. Stiles of previously disclosed welded window frames include chambers and comprises a cross-sections which make it possible to weld their edges in frame corners whilst maintaining its tightness.

[0003] The invention relates to a window frame for a roof window, comprising a stiles with cross-sections which make it possible to weld them to one another. The window frame is constructed in a way which also ensures unhindered insertion and extraction of roof window sash seated on hinges in the window frame. When opening the roof window, its sash pivot around the horizontal axis so that sash lower stile is raised upwards above the window frame lower stile. Therefore, the sash lower stile moves in circular motion relative to the window frame, which requires a greater gap between the window frame and sash lower stiles than between the window frame and sash side stiles, where the sash side stiles move parallel relative to the window frame side stiles. As for aesthetic reasons the smallest possible gap between appropriate roof window frame and sash stiles is desired, an infill profile according to claim 1 was used which at least partially covers the gap in the lower section of the window and facilitates the aforementioned unhindered sash insertion and extraction into and out of the window frame and makes it possible to weld frame stiles together.

[0004] The window frame according to the invention is a frame comprising an upper stile, a lower stile and two side stiles. The frame stiles are made from plastic profiles which comprise their walls: an outer wall, an inner wall, a top wall and a bottom wall. Once the frame is installed in a roof opening, the outer wall of the frame stiles is at least partially flush with the roof structure, whereas its inner wall is facing towards the frame inner opening. The top wall and the bottom wall join the inner and outer walls together making a stile profile with inner chambers. Once installed on a roof, the frame bottom wall faces towards the interior, whereas the top wall is on the opposite side and is shielded from the outside by the window shielding profiles. Furthermore, the stile bottom wall comprises a lining groove for the edge of roof window lining. When welding frame stiles, essentially all their walls are joined to each other. The window frame stile chambers may include metal strengthening profiles, preferably at least partially flush with frame stile outer wall as well as insulation profiles. The window frame is designed for a window, and in particular a roof window which also includes an sash frame with a glass unit. The sash frame, referred to as the sash, is constructed out of an upper, a lower and two side stiles, which, when the window is in its closed position, are flush with corresponding window frame stiles according to the invention. The window frame

comprises an infill profile, mounted to the lower stile inner wall. The infill profile is designed to fill the gap between the frame lower stile and lower stile of the sash which is ultimately to be seated in the said window frame. The infill profile is preferably made out of plastic and comprises a longitudinal edge and it is not longer than the frame stile to which it is attached. Once installed, at least one infill profile longitudinal edge is in the frame lower stile longitudinal socket, and the infill profile overlaps at least partially the sash lower stile or does not overlap the sash bottom stile when the window is closed. This stems from the position of the window frame lower stile longitudinal socket. The lower stile with an infill profile includes a latching cube attached to a strengthening plate in a chamber of that stile. The latching cube works with the roof window sash handle latch. The latching cube is partially seated on the infill profile or is fully seated on the infill profile.

[0005] For windows with a plastic window frame and stiles welded together, it is desirable for walls of joined stiles to be identical. Therefore, without changing the window frame lower style shape, but by mounting an infill profile on it, stiles of the frame window according to the invention can be welded together and a sash may be seated in that frame, which is inserted and extracted unhindered into and out of the window frame when closing and opening the roof window. The infill profile also ensures that the gap between the sash and the jamb is as small as possible and preferably the same from all sides in the window closed position, and the latching cube seated at least partially on the infill profile makes it possible to lock the sash in the window frame. As the latching cube overlaps the infill profile, this invention may be used in particular for small windows for which the radius of the circle constituting sash extraction path from the window frame is smaller than for larger windows. That requires a larger gap between sash and window frame lower stiles and a larger infill profile, and connecting the latching cube with the infill profile provides such an opportunity whilst at the same time making it possible to lock the sash in the window frame by latching the handle in the latching cube.

[0006] The illustration depicts the solution, with given figures showing the following: Fig. 1 lower stile with infill profile, Fig. 2 spatial view of window frame, Fig. 3 top view of window frame.

[0007] The plastic window frame comprising an upper stile 1, a side stiles 2 and a lower stile 3. Each stile comprising an outer wall 31, an inner wall 32, joining a top wall 33 and a bottom wall 34 with chambers 4 in between stile walls. Stile wall edges are welded to each other. Frame lower stile 3 additionally comprises an infill profile 5 seated in longitudinal grooves 321, 322 of inner wall 32. Frame stile chambers 4 house strengthening profiles 6 and insulation profiles 10. Latching cube 7 is in infill profile 5 and lower stile inner wall 32, it is attached to a plate and strengthens the inside of frame lower stile 3. The latching cube works with sash 11 handle latch de-

signed to be seated in a window frame. Whilst opening the window, sash 111 lower stile moves in circular motion relative to the window frame lower stile 3. Stile bottom walls 34 comprises a lining groove 341 for the interior lining around the window and window frame. The window also comprises a set of shielding profiles, with frame side stiles shielding profiles 8 seated on frame side stile 2 top wall. The window frame also includes ventilation channel 9 in upper stile 1. The ventilation channel terminates with vent 91 in upper stile 1 inner wall which constitutes the ventilation channel outlet. The ventilation channel inlet is in upper stile 1 top wall. The ventilation channel inlet is shielded by the window frame hood which is one of the shielding profiles from the set of profiles shielding the window with frame according to the invention.

Claims

1. Window frame for a roof window comprising an upper stile (1), a lower stile (3) and two side stiles (2), constructed out of thermoplastic profiles welded together at corners of the frame, said stile profiles (1, 2, 3) comprise an outer wall (31), an inner wall (32) as well as a top wall (33) and a bottom wall (34) with at least one chamber (4) in between them, wherein stile inner wall (32) is facing the interior frame opening, and outer wall (31), once installed, is partially flush with the roof structure
said window frame being **characterized in that** it includes an infill profile (5) attached to the lower stile (3) inner wall (32), said infill profile (5) being designed to fill the gap between the frame lower stile (3) and lower stile of the sash seated in the window frame, such that unhindered sash insertion and extraction into and out of the window frame is provided, and the window frame being further **characterized in that** it comprises a latching cube (7) seated at least partially on the infill profile (5).
2. The window frame according to claim 1 **characterized in that** latching cube (7) is fully seated on infill profile (5).
3. The frame according to claim 1 or 2 **characterized in that** the inner wall (32) of lower stile with infill profile (5) comprises at least one longitudinal socket (321, 322) for infill profile (5) longitudinal arm for attaching infill profile (5) on lower stile (3).
4. The frame according to patent claim 1 or 2, or 3 **characterized in that** the infill profile overlaps at least partially the sash lower stile.
5. The frame according to patent claim 1 or 2, or 3 **characterized in that** the infill profile does not overlap the sash lower stile when the window is closed.

6. The frame according to patent claim 1 or 2, or 3, or 4, or 5 **characterized in that** strengthening profile (6) is located between frame stile outer wall and inner wall (32) which in particular is flush with at least the stile outer wall (31).
7. The frame according to claim 1 or 2, or 3, or 4, or 5, or 6 **characterized in that** latching cube (7) attached to strengthening plate inside lower stile (3) is located in lower stile (3) with infill profile (5).
8. The window frame according to patent claim 1 or 2, or 3, or 4, or 5, or 6, or 7 **characterized in that** insulation profiles (10) are located in frame stile chambers (4).
9. The window frame according to patent claim 1 or 2, or 3, or 4, or 5, or 6, or 7, or 8 **characterized in that** stile bottom wall (34) comprises lining groove (341) for the edge of roof window lining.
10. The window frame according to claim 1 **characterized in that** upper stile (1) includes ventilation channel (9), terminating with vent (91) in upper stile (1) inner wall.

Patentansprüche

1. Fensterrahmen für ein Dachfenster, bestehend aus einem oberen Rahmenholz (1), einem unteren Rahmenholz (3) und zwei seitlichen Rahmenhölzern (2) aus thermoplastischen Kunststoffprofilen, die an den Ecken des gebildeten Rahmens miteinander verschweißt sind und die Rahmenhölzer eine Außenwand (31), eine Innenwand (32) und eine obere Wand (33) und eine untere Wand (34) aufweisen, zwischen denen sich mindestens eine Kammer (4) befindet, wobei die Innenwand (32) des Rahmenholzes der inneren Öffnung des Rahmens zugewandt ist, und die Außenwand (31) im eingebauten Zustand teilweise an die Dachkonstruktion angrenzt, und **dadurch gekennzeichnet, dass** der Fensterrahmen ein an der Innenwand (32) des unteren Rahmenholzes (3) befestigtes Füllprofil (5) aufweist und das Füllprofil (5) geeignet ist, den Spalt zwischen dem unteren Rahmenholz (3) des Rahmens und dem unteren Rahmenholz des im Fensterrahmen gelagerten Flügels auszufüllen, so dass ein kollisionsfreies Ein- und Ausführen des Flügels gegenüber dem Fensterrahmen gewährleistet ist, und **dadurch gekennzeichnet, dass** der Rahmen außerdem einen Verriegelungsblock (7) aufweist, der zumindest teilweise im Füllprofil (5) gelagert ist.
2. Fensterrahmen nach Anspruch 1, **dadurch gekennzeichnet, dass** der Verriegelungsblock (7) vollständig auf dem Füllprofil (5) gelagert ist.

3. Fensterrahmen nach Anspruch 1 oder 2, **dadurch gekennzeichnet, dass** die Innenwand (32) des unteren Rahmenholzes mit dem Füllprofil (5) mindestens einen Längsschlitz (321, 322) für den Längsarm des Füllprofils (5) zur Befestigung des Füllprofils (5) am unteren Rahmenholz (3) aufweist. 5
4. Fensterrahmen nach Anspruch 1, 2 oder 3, **dadurch gekennzeichnet, dass** das Füllprofil das untere Rahmenholz des Flügels zumindest teilweise überlappt. 10
5. Fensterrahmen nach Anspruch 1, 2 oder 3, **dadurch gekennzeichnet, dass** das Füllprofil das untere Rahmenholz des Flügels bei geschlossenem Fenster nicht überlappt. 15
6. Fensterrahmen nach Anspruch 1 oder 2 oder 3 oder 4 oder 5, **dadurch gekennzeichnet, dass** zwischen der Innenwand (32) und der Außenwand des Rahmenholzes ein Verstärkungsprofil (6), insbesondere angrenzend mindestens an die Außenwand (31) des Rahmenholzes, vorhanden ist. 20
7. Fensterrahmen nach Anspruch 1 oder 2 oder 3 oder 4 oder 5 oder 6, **dadurch gekennzeichnet, dass** im unteren Rahmenholz (3) mit dem Füllprofil (5) ein Verriegelungsblock (7) angeordnet ist, der an einer Verstärkungsplatte im Inneren des unteren Rahmenholzes (3) befestigt ist. 25
8. Fensterrahmen nach Anspruch 1 oder 2, oder 3, oder 4, oder 5, oder 6, oder 7, **dadurch gekennzeichnet, dass** in den Kammern (4) der Rahmenhölzer Isolierprofile (10) vorgesehen sind. 30
9. Fensterrahmen nach Anspruch 1 oder 2 oder 3 oder 4 oder 5 oder 6 oder 7 oder 8, **dadurch gekennzeichnet, dass** die Bodenwand (34) des Rahmenholzes eine Auskleidungsnut (341) für die Auskleidungskante des Dachfensters aufweist. 35
10. Fensterrahmen nach Anspruch 1, **dadurch gekennzeichnet, dass** das obere Rahmenholz (1) einen Zuluftkanal (9) aufweist, der in einem Lüfter (91) in der Innenwand des oberen Rahmenholzes (1) mündet. 40

Revendications

1. Châssis de fenêtre de toit composé d'un cadre supérieur (1), d'un cadre inférieur (3) et de deux cadres latéraux (2), construit à partir de profilés thermoplastiques soudés les uns aux autres aux coins du châssis ainsi formé, les profilés des cadres ayant une paroi extérieure (31), une paroi intérieure (32), ainsi qu'une paroi supérieure (33) et une paroi inférieure 45

(34) entre lesquelles il existe au moins une chambre (4), la paroi intérieure (32) du cadre étant orientée vers l'ouverture intérieure du châssis, et la paroi extérieure (31) à l'état assemblé étant partiellement adjacente à la structure du toit, et **caractérisé en ce que** le châssis de fenêtre comporte un profilé de remplissage (5) fixé sur la paroi intérieure (32) du cadre inférieur (3) et le profilé de remplissage (5) est adapté pour remplir l'espace entre le cadre inférieur (3) du châssis et le cadre inférieur de l'ouvrant, encastré dans le châssis de la fenêtre, de sorte que l'entrée et la sortie sans collision de l'ouvrant du châssis de la fenêtre soient assurées, et **caractérisé en ce que** le châssis comporte également un bloc de verrouillage (7) installé au moins partiellement sur le profilé de remplissage (5).

2. Châssis de fenêtre selon la revendication 1, **caractérisé en ce que** le bloc de verrouillage (7) est entièrement installé sur le profilé de remplissage (5).
3. Châssis selon la revendication 1 ou 2, **caractérisé en ce que** la paroi intérieure (32) du cadre inférieur avec le profilé de remplissage (5) est munie d'au moins une fente longitudinale (321, 322) pour le bras longitudinal du profilé de remplissage (5) pour fixer le profilé de remplissage (5) sur le cadre inférieur (3).
4. Châssis selon la revendication 1 ou 2, ou 3, **caractérisé en ce que** le profilé de remplissage se cache au moins partiellement derrière le cadre inférieur de l'ouvrant.
5. Châssis selon la revendication 1 ou 2, ou 3, **caractérisé en ce que** le profilé de remplissage ne se cache pas derrière le cadre inférieur de l'ouvrant lorsque la fenêtre est fermée.
6. Châssis selon la revendication 1 ou 2, ou 3, ou 4, ou 5, **caractérisé en ce qu'**entre la paroi intérieure (32) et la paroi extérieure du cadre du châssis se trouve un profilé de renforcement (6), en particulier adjacent au moins à la paroi extérieure (31) du cadre.
7. Châssis selon la revendication 1 ou 2, ou 3, ou 4, ou 5, ou 6, **caractérisé en ce que** dans le cadre inférieur (3) avec le profilé de remplissage (5) se trouve un bloc de verrouillage (7) fixé à une plaque de renforcement à l'intérieur du cadre inférieur (3). 50
8. Châssis de fenêtre selon la revendication 1 ou 2, ou 3, ou 4, ou 5, ou 6, ou 7, **caractérisé en ce que** dans les chambres (4) des cadres du châssis on trouve des profilés isolants (10). 55
9. Châssis de fenêtre selon la revendication 1 ou 2, ou 3, ou 4, ou 5, ou 6, ou 7, ou 8, **caractérisé en ce que** la paroi inférieure (34) du cadre possède une rainure

pour l'habillage (341) destinée au bord de l'habillage de la fenêtre de toit.

10. Châssis de fenêtre selon la revendication 1, **caractérisé en ce que** le cadre supérieur (1) comprend un canal d'alimentation en air (9) se terminant par un ventilateur (91) dans la paroi intérieure du cadre supérieur (1).

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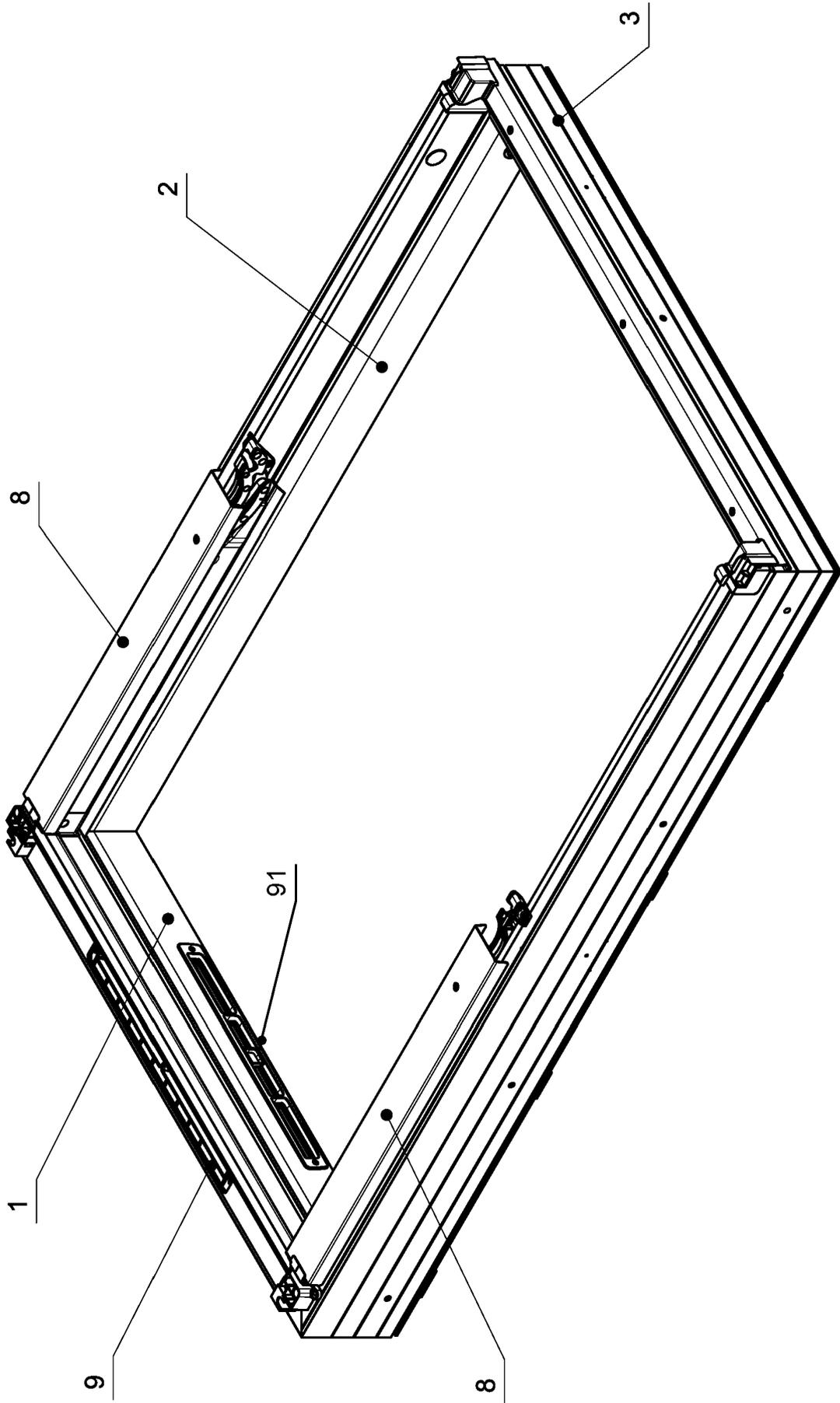


Fig. 2

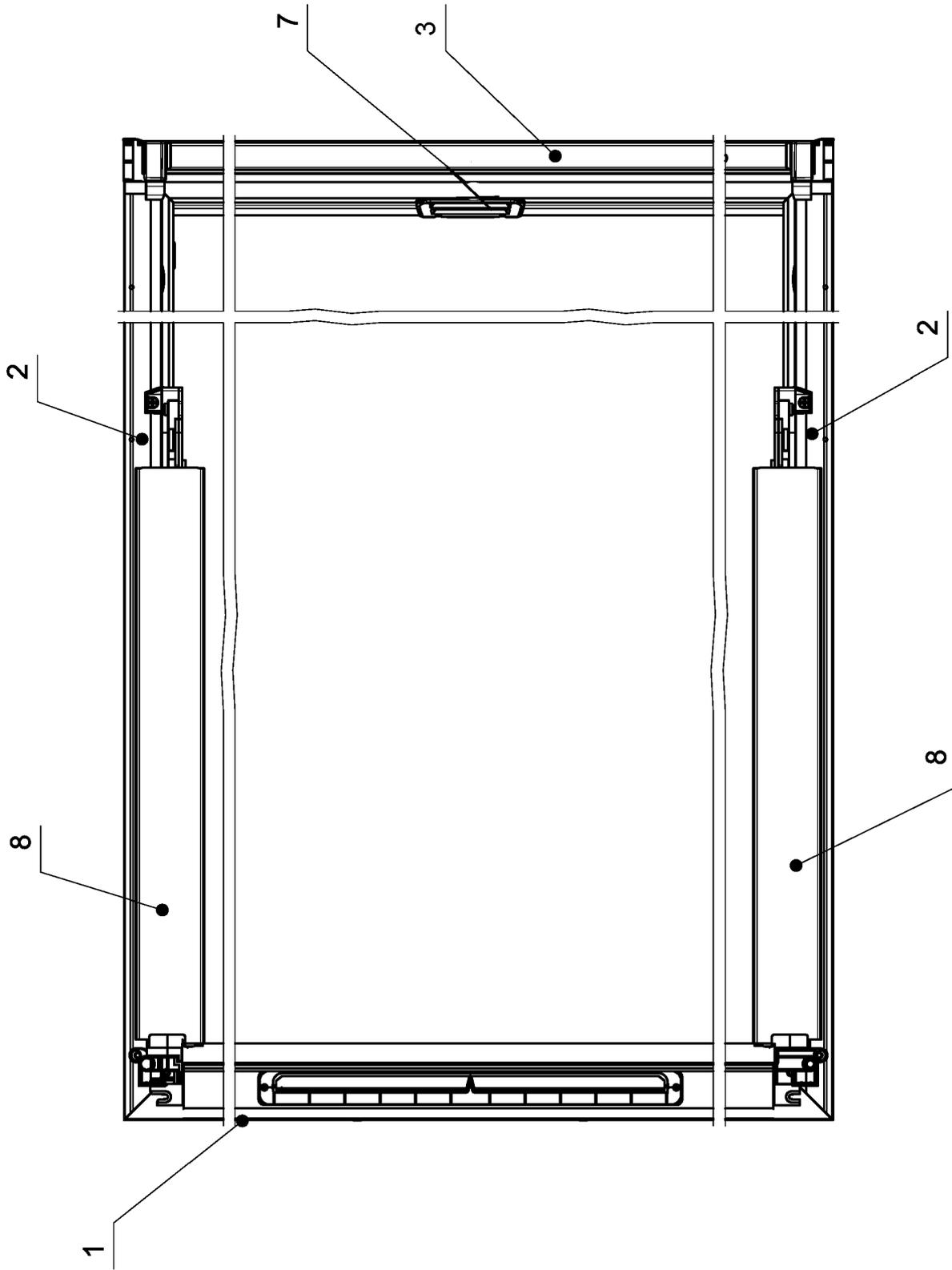


Fig. 3

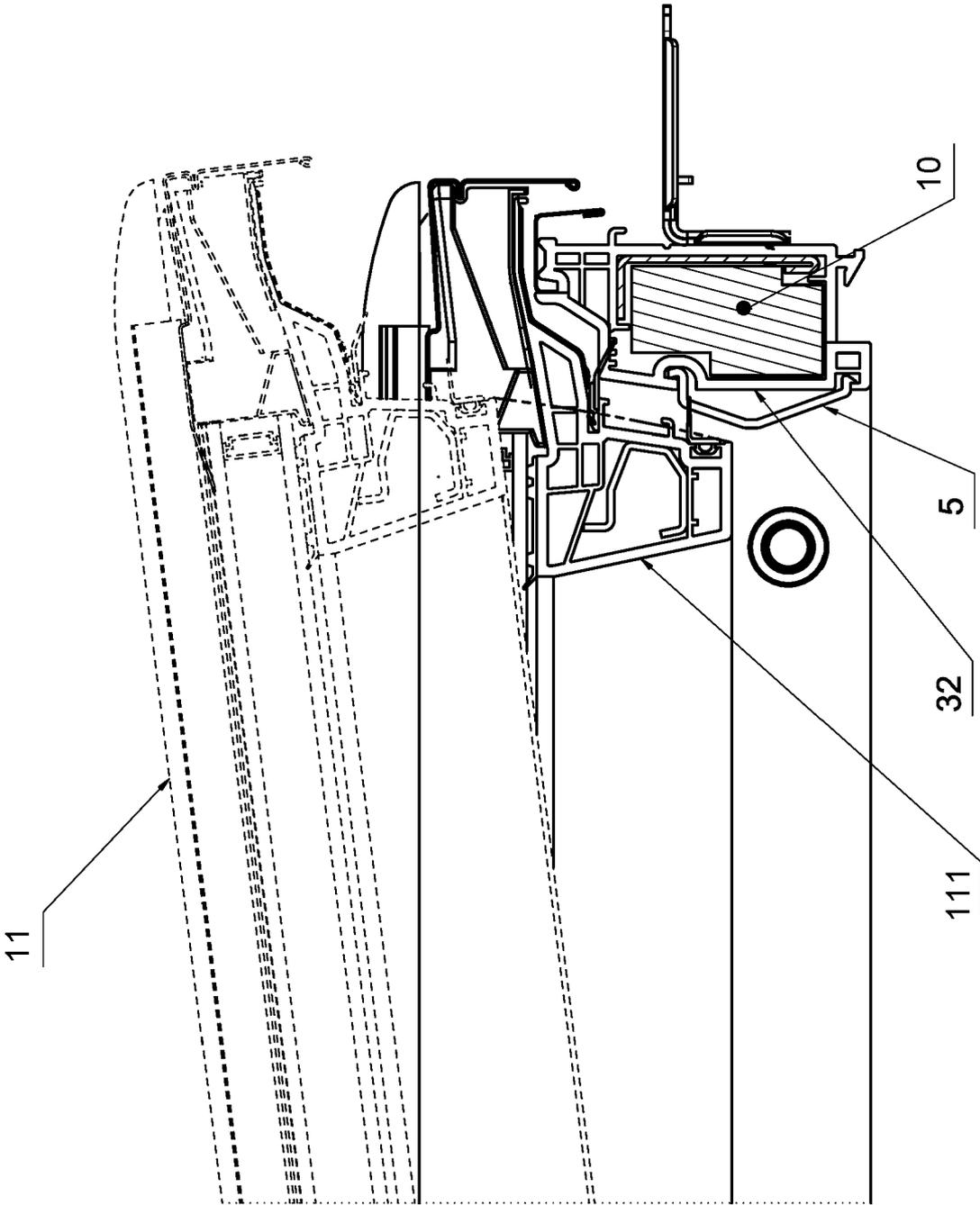


Fig. 4

REFERENCES CITED IN THE DESCRIPTION

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