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(54) **Roller shutter box**

(57) The subject of this invention is a box of an overlay-type roller shutter, furnished with a snap-lock enabling opening of one of two adjacent service covers.

The box of an overlay-type roller shutter, of a rectangular prism form, constructed of separably joined plastic cellular walls **(1), (2), (3), (4),** two opposite side walls **(1), (3)** are of a twin structure. In the inner corner **(5)** of the said box there is a shaped-profile slot **(6)** separably joined with the side cellular wall **(3)** or with the bottom cellular wall **(4)**, the slat **(6)** in its cross-section perpendicular to the lengthwise axis **(7)** has the shape of a near isosceles right-angle triangle, whereas at the side **(9),** there is a T-shaped guide **(8)** placed inside the recess **(10),** or inside the recess **(10'),** whereas at the other side **(11),** there is a catch **(12)** of a near V-shape, whereas in the upper parts of the walls **(1), (3),** there are hinges **(13), (14)** placed in the corners (15), **(16)** of the top cellular wall **(2).**

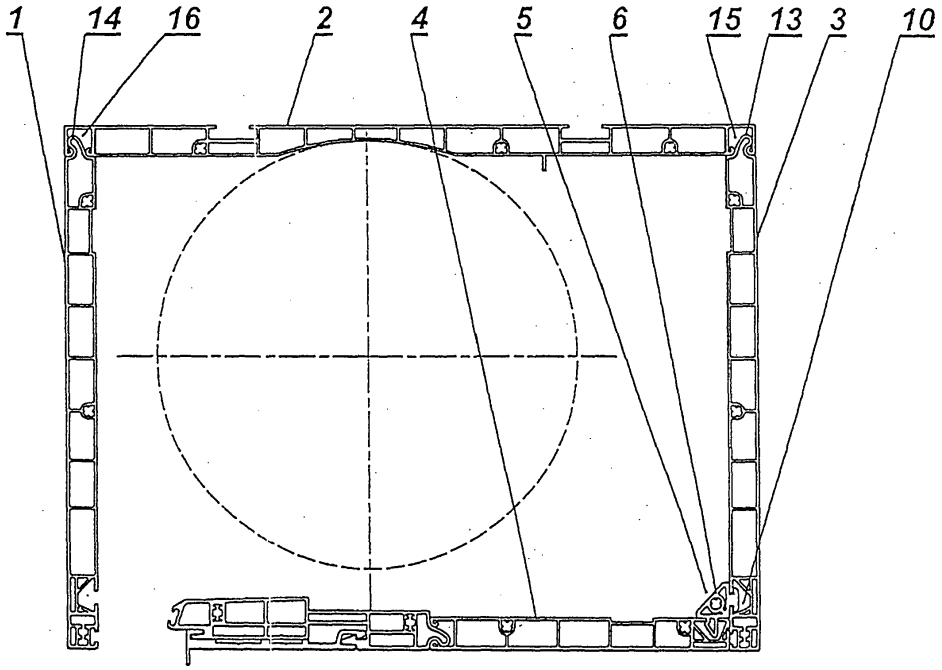

Fig. 1

EP 2 378 051 A1

Description

[0001] The subject of this invention is the box of an overlay-type roller shutter, furnished with a snap-lock enabling closing of one of two adjacent service covers.

[0002] The known boxes of roller shutters used to have their service covers fixed from underneath or from front. Such type of a box is known from the German publication of the patent application № DE 10 2009 000 643A1. Opening and/or closing of the covers installed on the box is performed making use of a profiled snap-fastener furnished with spring pins snapped in profiled grooves on the covers.

[0003] The embodiment of this invention is construction of the box of an overlay-type roller shutter, enabling opening of the box in two planes, making use the same components, whereas either the left cover and/or the right cover has the same cellular structure.

[0004] The box of an overlay-type roller shutter, of a rectangular prism form, constructed of plastic cellular walls separably joined, two opposite side walls of the box are of a twin structure, characterised in that the shaped-profile slot separably joined with the side cellular wall and/or with the bottom cellular wall is set in the inner corner of the said box, the slat in its cross-section perpendicular to the lengthwise axis has the shape of a near isosceles right-angle triangle, whereas at the side of the slat, there is a T-shaped guide placed inside the recess of the bottom wall or the sidewall, whereas at the other side of the triangle, there is a catch of a near V-shape, whereas in the upper parts of the walls, there are hinges placed in the corners of the top cellular wall. The shaped-profile slat can be joined interchangeably with the cellular side wall or with the cellular bottom wall by the catch, whereas the guide can be placed in the other recess. The recesses situated at the ends of the walls perpendicular to each other, are of the same shape, and they have in the cross-section the shape of a trapezoid that one wall of which has the opening.

[0005] The advantage of a box of an overlay-type roller shutter, according to this invention, is the possibility of opening the box in its two planes, making use of the same cellular components, whereas the left cellular cover and/or the right cellular cover are the same shape-product, that enables to lower production costs and/or to reduce the number of components variety.

[0006] The cellular structure of a box of an overlay-type roller shutter increases its rigidity and/or improves parameters of the thermal and/or acoustic insulation. The structure of the box facilitates the usage of its steel reinforcement, and provides a simple way of fastening the box to a doorhead using specific ties intended for the purpose. Installation of the assembled box onto the window head is facilitated with the suitable snap shape. A skew shape of the box's bottom profile facilitates drainage of water from the inside of the roller shutter, whereas the smooth surface of outer walls of the box makes it possible to glue it with Renolit.

[0007] The subject of this invention is shown in the drawings as an exemplary make; in the Fig. 1, the cross-section of the assembled box of an overlay-type roller shutter is shown; in the Fig. 2, the cross-section view of the box of an overlay-type roller shutter, having the bottom cellular wall open, is shown; in the Fig. 3, the cross-section view of the box of an overlay-type roller shutter, having the side cellular wall open, is shown; in the Fig. 4, the axonometric view, from the box interior, of the box of an overlay-type roller shutter, is shown; in the Fig. 5, the cross-section of the shaped-profile slat, perpendicular to its lengthwise axis, is shown; in the Fig.6, the axonometric view of the shaped-profile slat, is shown; and in the Fig. 7, the joint of the cellular walls made using the shaped-profile slat, is shown.

[0008] As it is shown in the drawing, the box of an overlay-type roller shutter of a rectangular prism form, consists of separably joined cellular walls **1, 2, 3, 4,** of which two opposite side walls **1, 3,** have a twin structure. Inside the inner corner **5,** there is the shaped-profile slat **6** separably joined with the cellular wall **3** and/or with the cellular wall **4,** the slat **6** in its cross-section perpendicular to its lengthwise axis **7** has the shape of a near isosceles right-angle triangle. One side **9** of the shaped-profile slat **6** has the T-shaped guide **8** placed inside the recess **10,** whereas at the other side **11** of the triangle, there is a catch **12** of a near V-shape. In the upper parts of the walls **1, 3,** there are hinges **13, 14,** placed in the corners **15, 16,** of the top cellular wall **2.** The shaped-profile slat **6** can be joined also with the wall **3** by the catch **12,** whereas the guide **8** can be placed in the recess **10'.** The recesses **10** & **10',** situated at the ends of the walls **3** & **4** perpendicular to each other, are of the same shape, having in a cross-section the shape of a trapezoid, one wall **17** of which has the opening **18.** The skew walls **19, 19',** of the recesses **10** & **10',** are inclined to the bases **20, 20',** at an angle αa equal to 45°, whereas the skew walls **21, 21',** are inclined to the bases **20, 20',** at an angle β equal to 67.5°.

[0009] Upon inserting the shaped-profile slat **6** into the side wall **3,** the bottom wall **4** can be opened, being by that operation an inspection lid, or upon inserting the shaped-profile slat **6** into the bottom wall **4**, the side wall **3** is an inspection lid.

Claims

1. The box of an overlay-type roller shutter, of a rectangular prism form, consisting of the plastics cellular walls separably joined, two opposite side walls of the box have a twin structure, **characterised in that** inside the inner corner **(5),** there is a shaped-profile slat **(6)** separably joined with the side cellular wall **(3)** or with the bottom cellular wall **(4),** the slat **(6)** in its cross-section perpendicular to its lengthwise axis **(7)** has the shape of a near isosceles right-angle triangle, where at the side **(9)** there is a T-shaped guide

(8) placed inside the recess **(10),** or inside the recess **(10').** whereas at the other side **(11)** of the triangle, there is a catch **(12)** of a near V-shape, whereas in the upper parts of the walls **(1), (3),** there are hinges **(13), (14),** placed in the corners **(15), (16),** of the top cellular wall **(2).**

2. The box according to the claim 1, **characterised in that** the shaped-profile slat **(6)** is joined with the wall (3), or with the wall **(4),** by the catch **(12),** whereas the guide **(8)** is inserted into the recess **(10'),** or the recess **(10').**

3. The box according to the claim 1 and/or 2, **characterised in that** the recesses **(10)** & **(10'),** situated at the ends of the walls (3) & **(4)** perpendicular each other, have in its cross-section the shape of a trapezoid, one wall **(17)** of which has the opening **(18),** whereas the skew walls **(19), (19'),** are inclined to the bases **(20), (20'),** at an angle (α) equal to 45°, whereas the skew walls **(21), (21'),** are inclined to the bases **(20), (20'),** at an angle (β) equal to 67.5°.

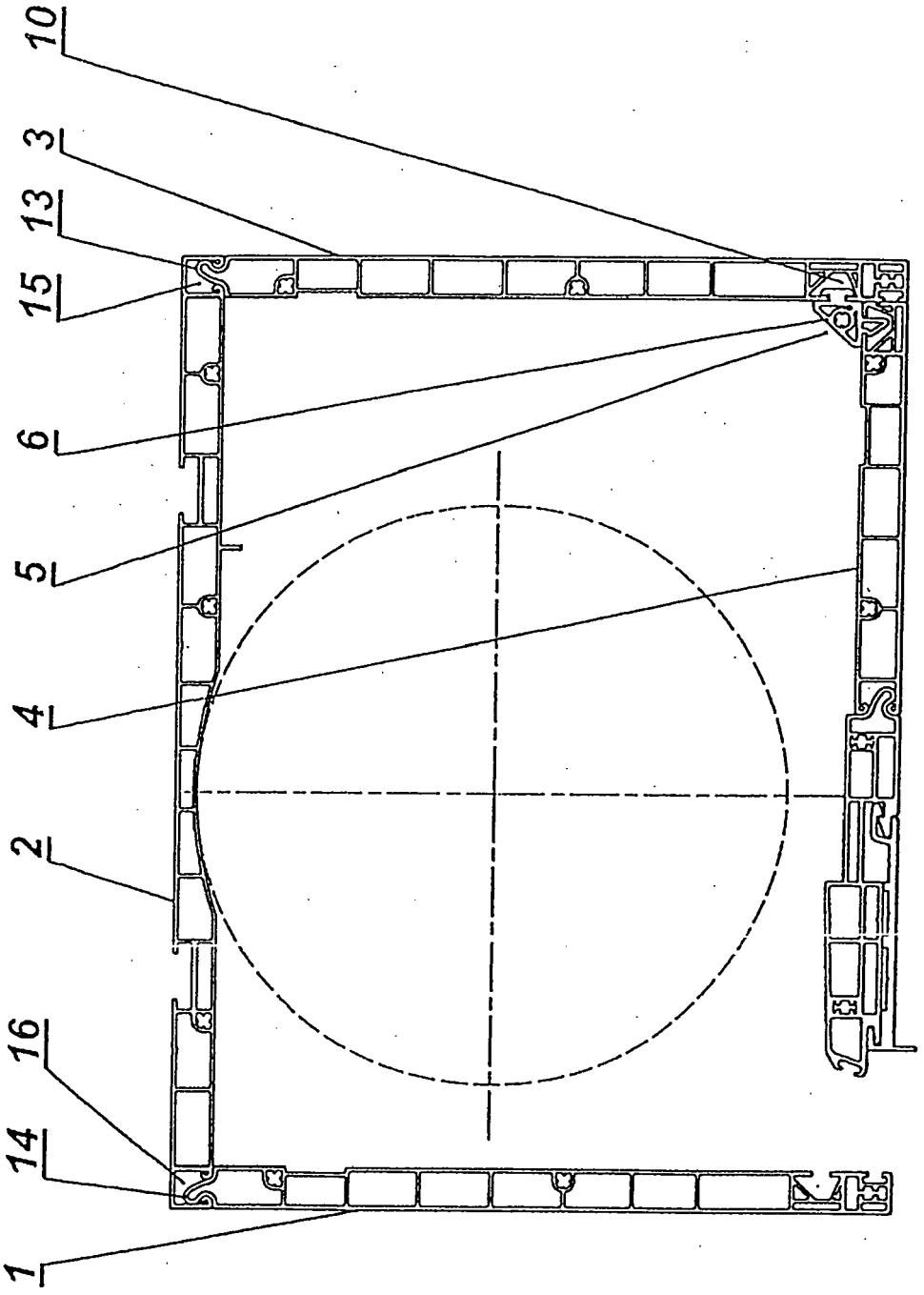

Fig. 1

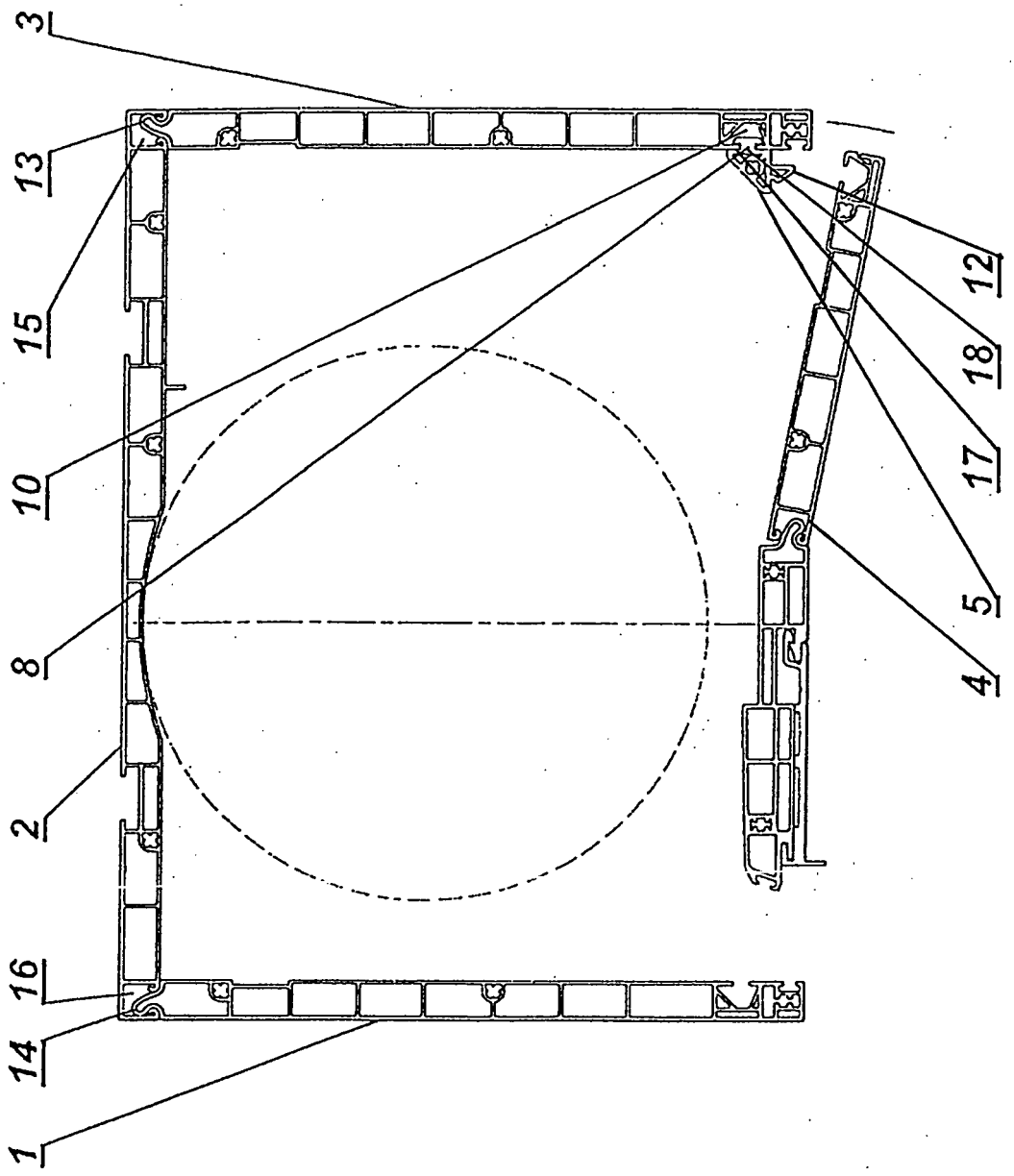

Fig. 2

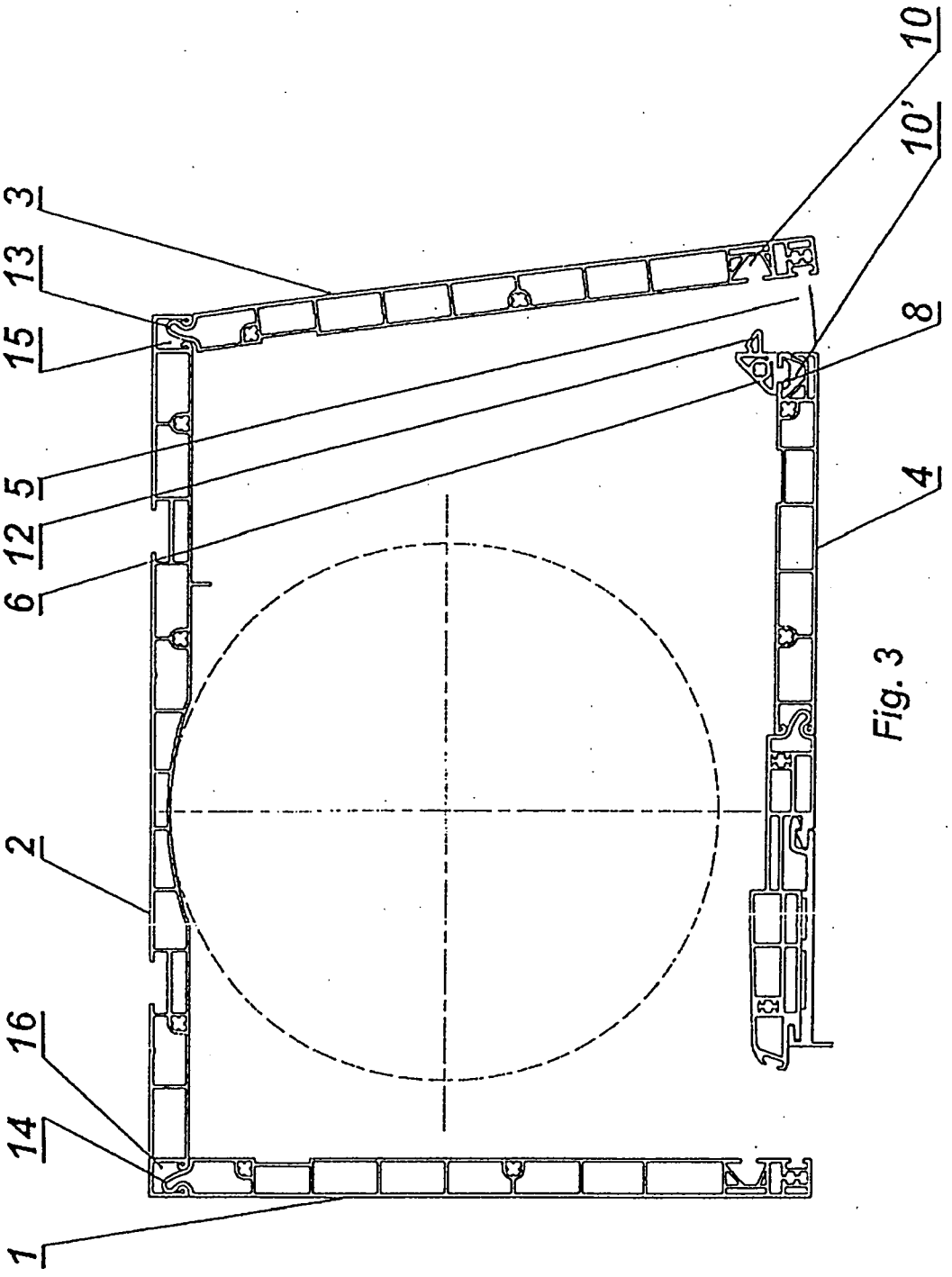

Fig. 3

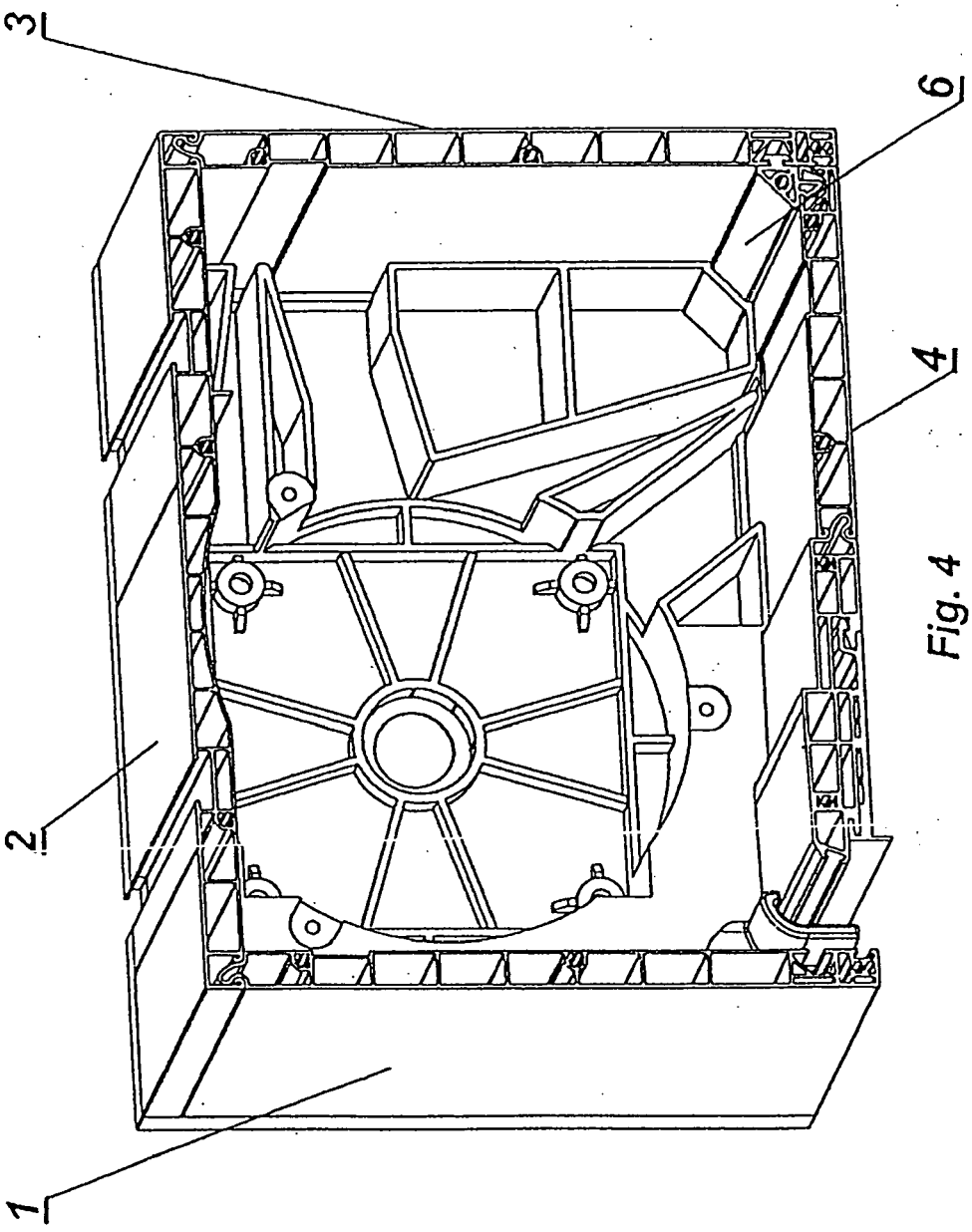

Fig. 4

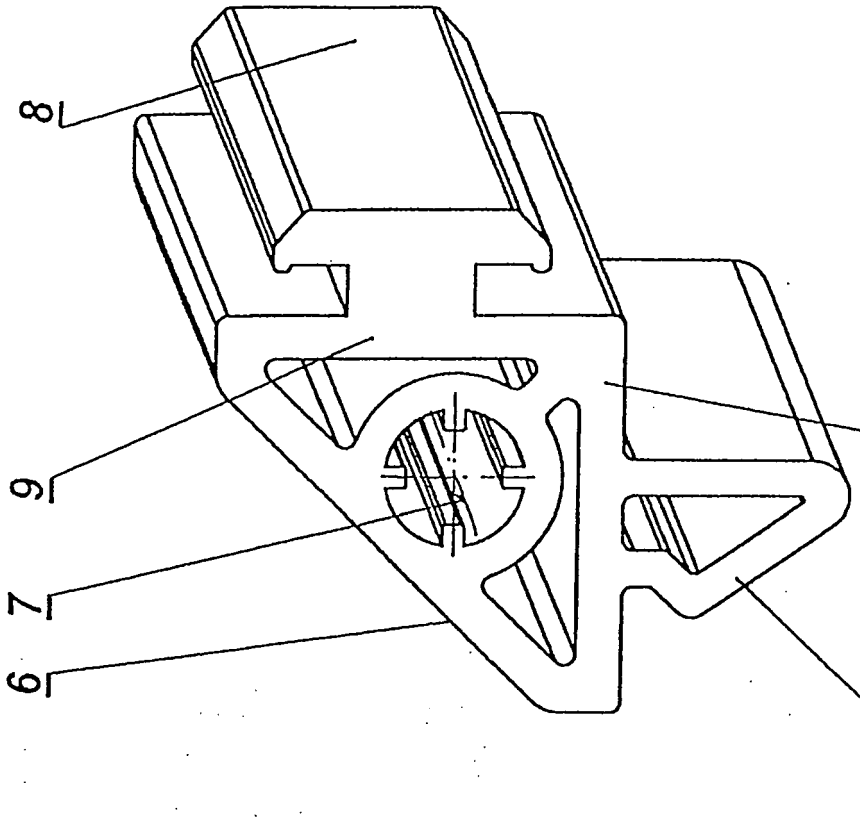

Fig. 6

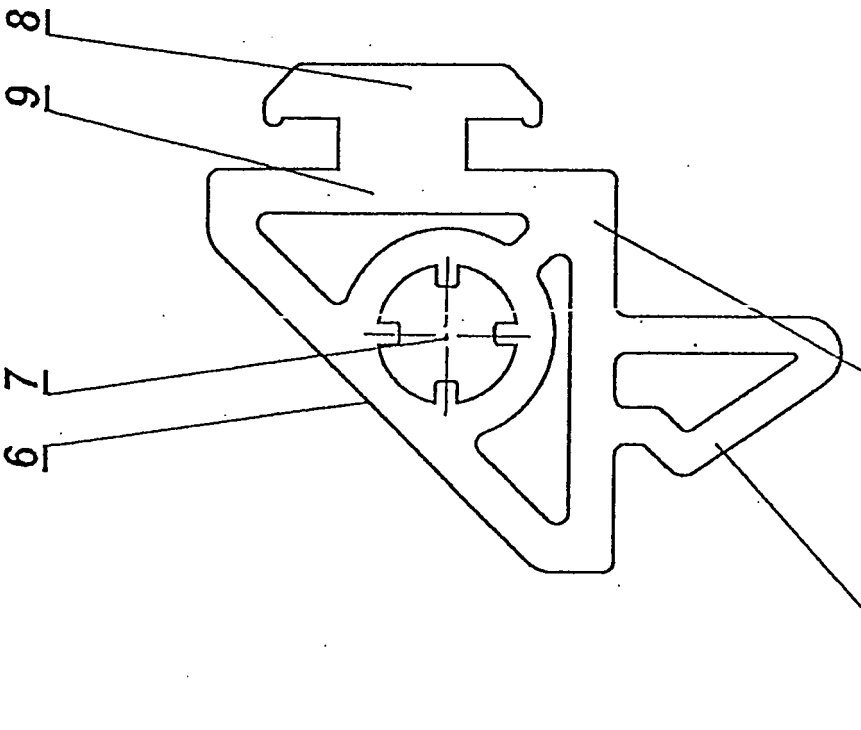

Fig. 5

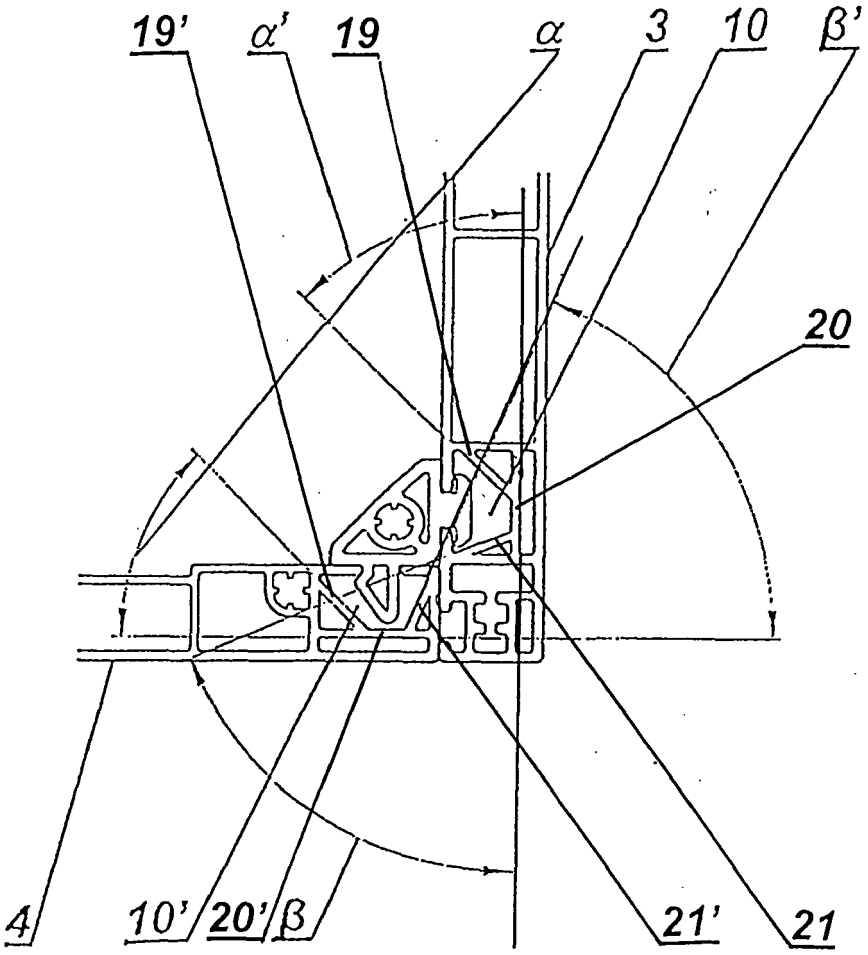

Fig. 7

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EUROPEAN SEARCH REPORT

Application Number
EP 10 46 0044

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	DE 10 2009 000643 A1 (PROFINE GMBH [DE]) 6 August 2009 (2009-08-06) * Bezugszeichenlistefigures 1-6 * -----	1-3	INV. E06B9/17
A	EP 0 952 296 A1 (BUBENDORFF SA [FR] BUBENDORFF VOLET ROULANT [FR]) 27 October 1999 (1999-10-27) * paragraphs [0020] - [0027]; claims 3-6; figures 1,2,3,6 * -----	1-3	

TECHNICAL FIELDS SEARCHED (IPC)

E06B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	22 July 2011	Kofoed, Peter

CATEGORY OF CITED DOCUMENTS

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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 10 46 0044

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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22-07-2011

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

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