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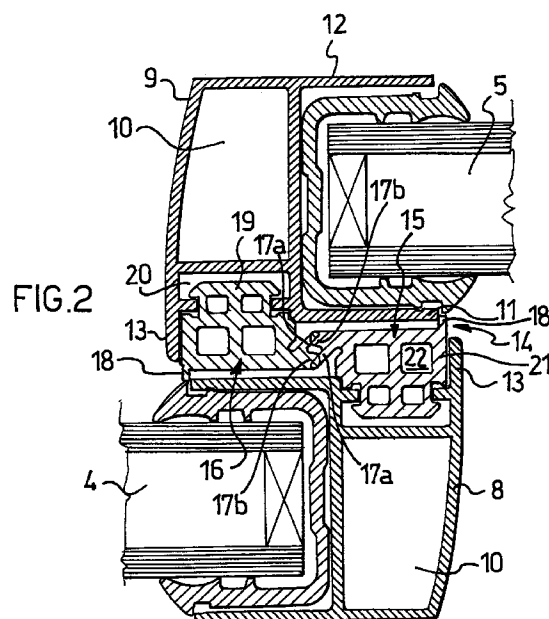
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(54) **Matching device for profiled sections of sliding doors or windows in a frame**

(57) A door or window frame (1) with sliding doors or windows (2, 3) has a matching device (14) operative between profiled sections (8, 9) of the sliding doors or windows (2, 3) when they are in the closed position, the device being structurally simple, reliable in operation, and quickly installed and comprising two profiled strips (15, 16) each of which is associated with a respective profiled section (8, 9) and which are in mutual contact under pressure, the profiled strips (15, 16) being made of a thermally insulating material.



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Description

[0001] The present invention relates to a matching device for profiled sections of sliding doors or windows when they are in the closed position in a frame.

[0002] As is known, in frames with sliding doors or windows, there is a need to provide a matching device between the profiled sections of the sliding doors or windows when they are in the closed position. This matching device has to ensure leaktightness between the doors or windows in the closed position.

[0003] In accordance with a known solution, a matching device comprises a labyrinth formed between shaped portions of the profiled sections of the doors or windows of the frame when they are in the closed position and weatherstrips disposed along the labyrinth.

[0004] This solution is structurally complex since it requires profiled sections of complex shape and, moreover, is unsatisfactory from the point of view of thermal insulation since the labyrinth and the weatherstrips arranged as barriers together have high thermal conductivity.

[0005] Matching devices in which strips of a suitable material are associated with the profiled sections to form the labyrinth and suitable weatherstrips are arranged as barriers for the labyrinth have been proposed. This solution achieves a definite improvement in thermal insulation but has undoubted structural complexity owing to the presence of the strips.

[0006] The problem upon which the present invention is based is that of devising a matching device of the type specified which has structural and functional characteristics such as to overcome the aforementioned problems.

[0007] This problem is solved by a matching device of the type specified which is characterized in that it comprises two profiled strips, each of which is associated with a respective profiled section and which are in mutual contact under pressure, the profiled strips being made of a thermally insulating plastics material.

[0008] Further characteristics and the advantages of the present invention will become clear from the following description of a preferred embodiment thereof, given by way of non-limiting example, with reference to the appended drawings, in which:

Figure 1 is a schematic elevational view of a window frame incorporating a matching device according to the present invention, and

Figure 2 is a view of the matching device of Figure 1, sectioned on the line II, and on an enlarged scale.

[0009] With reference to the appended drawings, a frame which, in the embodiment shown, is a window frame, is generally indicated 1. The window frame 1 includes two sliding windows 2 and 3 which have respective double panes 4 and 5 enclosed in respective

frames 6 and 7. The frames 6 and 7 are made of profiled sections and comprise, in particular, respective profiled sections 8 and 9 which are intended to meet when the windows 2 and 3 are in the closed position in the window frame.

[0010] The profiled sections 8 and 9 are identical and are arranged in opposed positions.

[0011] Each profiled section comprises a box-like body 10 projecting from which there are two flanges 11 and 12 holding the respective double pane, and a transverse flange 13.

[0012] The window frame 1 comprises a matching device 14 for the profiled sections 8 and 9 of the windows 2 and 3 when the windows are in the closed position.

[0013] The matching device 14 according to the invention comprises two profiled strips, indicated 15 and 16, respectively, each associated with a respective profiled section 8 or 9.

[0014] When the sliding windows 1 and 3 are in the closed position in the frame 1, the two profiled strips 15 and 16 of the matching device 14 are in mutual leaktight contact under pressure.

[0015] The two profiled strips 15 and 16, which are identical and arranged in opposed positions, are made of a thermally-insulating plastics material selected from elastomers constituted by ethylene and propylene copolymers, such as DUTRAL (registered trade mark) and/or similar materials.

[0016] Each profiled strip 15 (16) comprises a resiliently yielding lip 17a which is in contact under pressure with a flat portion 17b of the other profiled strip 16 (15).

[0017] Each profiled strip 15 (16) associated with a profiled section 8 (9) advantageously also comprises a resiliently yielding edging 18 which is in leaktight contact under pressure with the transverse flange 13 of the other profiled section 9 (8).

[0018] At this point, it is easy to see that the matching device 14 according to the present invention has, altogether, four leaktight pressure contact points, more precisely, two leaktight pressure contacts between the edging 18 of the profiled strip carried by each profiled section and the flange 11 of the other profiled section and two leaktight pressure contacts between the lip 17a of each profiled strip and the flat portion 17b of the other profiled strip.

[0019] Each profiled strip 15, 16 of the matching device 14 is firmly fixed to the respective profiled section 8 or 9 of the window by virtue of the fact that each profiled strip 15, 16 comprises a substantially mushroom-shaped appendage 19 which is engaged in the manner of a press stud in a hammer-shaped recess 20 in the profiled section 8, 9.

[0020] Each profiled strip 15 or 16 has a body 21 with a substantially rectangular cross-section which is housed between the box-like body 10 and the transverse flange 13 of the respective profiled section. The appendage 19 projects from the body 21 towards the

box-like body 10, and the lip 17a and the flat portion 17b project from the body 21 towards the transverse flange 13 of the other profiled section.

[0021] Each profiled strip 15 or 16 advantageously comprises a plurality of weight-reducing cavities, all indicated 22, which, preferably, are of square cross-section and are formed in the body 21 so as to confer on the cross-section of the profiled strip a substantially cross-walled configuration, achieving low thermal conductivity.

[0022] The main advantage of the matching device according to the present invention lies in its structural simplicity. It is in fact formed by few parts and allows the profiled sections of the windows to be formed with a simple shape.

[0023] A further advantage of the matching device according to the present invention is that it improves thermal insulation by virtue of the fact that the same elements which ensure leaktightness also constitute a thermal break.

[0024] Finally, it should be noted that the matching device according to the present invention can be installed quickly since the individual profiled strips which make up the matching device are identical and can be fitted directly by the engagement of their appendages in the manner of press studs in the recesses in the profiled sections.

[0025] Not the least advantage of the matching device according to the present invention lies in its compactness. Moreover, it can be produced with an aesthetically pleasing appearance.

[0026] Furthermore, it should be noted that the matching device according to the present invention can be expected to have a practically indefinite operative life.

[0027] Naturally, in order to satisfy contingent and specific requirements, an expert in the art may apply to the above-described device many modifications and variations all of which, however, are included in the scope of protection of the invention as defined by the following claims.

Claims

1. A matching device (14) for profiled sections (8, 9) of sliding doors or windows (2, 3) when they are in the closed position in a frame (1), characterized in that it comprises two profiled strips (15, 16) each of which is associated with a respective profiled section (8, 9) and which are in mutual contact under pressure, the profiled strips (15, 16) being made of a thermally insulating material.
2. A matching device (14) according to Claim 1, characterized in that the two profiled strips (15, 16) are identical.
3. A matching device (14) according to Claim 1, characterized in that each profiled strip (15, 16) comprises a resiliently yielding lip (17a) in contact under

pressure with a portion (17b) of the other profiled strip (16, 15).

4. A matching device (14) according to Claim 3, characterized in that the profiled strip (15, 16) associated with the profiled section (8, 9) of a door or window (2, 3) comprises a resiliently yielding edge (18) which is in contact under pressure with the profiled section (9, 8) of the other door or window (3, 2).
5. A matching device (14) according to Claim 4, characterized in that each profiled strip (15, 16) comprises an appendage (19) which is engaged in a recess (20) formed in the respective profiled section (8, 9).
6. A matching device (14) according to Claim 5, characterized in that the appendage (19) is engaged in the recess (20) in the manner of a press-stud.
7. A matching device (14) according to Claim 1, characterized in that each profiled strip (15, 16) comprises weight reducing cavities (22).
8. A matching device (14) according to Claim 1, characterized in that the thermally insulating material is a plastics material.
9. A matching device (14) according to Claim 8, characterized in that the thermally insulating plastics material is selected from elastomers constituted by ethylene and propylene copolymers.
10. A profiled strip (15, 16) for a matching device (14) for two profiled sections (8, 9) of sliding doors or windows (2, 3) when they are in the closed position in a frame (1), characterized in that it is made of a thermally insulating material.
11. A profiled strip (15, 16) according to Claim 10, characterized in that the thermally insulating material is a plastics material.
12. A profiled strip (15, 16) according to Claim 11, characterized in that the plastics material is selected from elastomers constituted by ethylene and propylene copolymers.

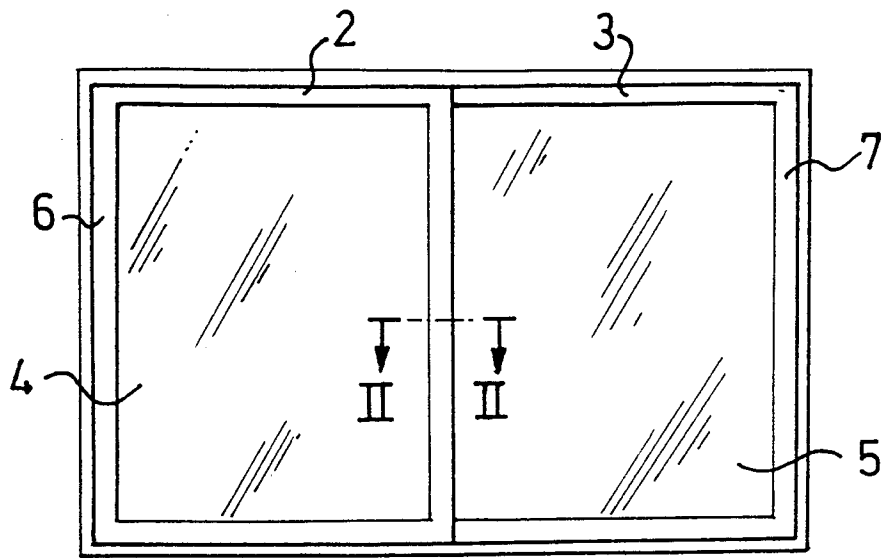


FIG.1

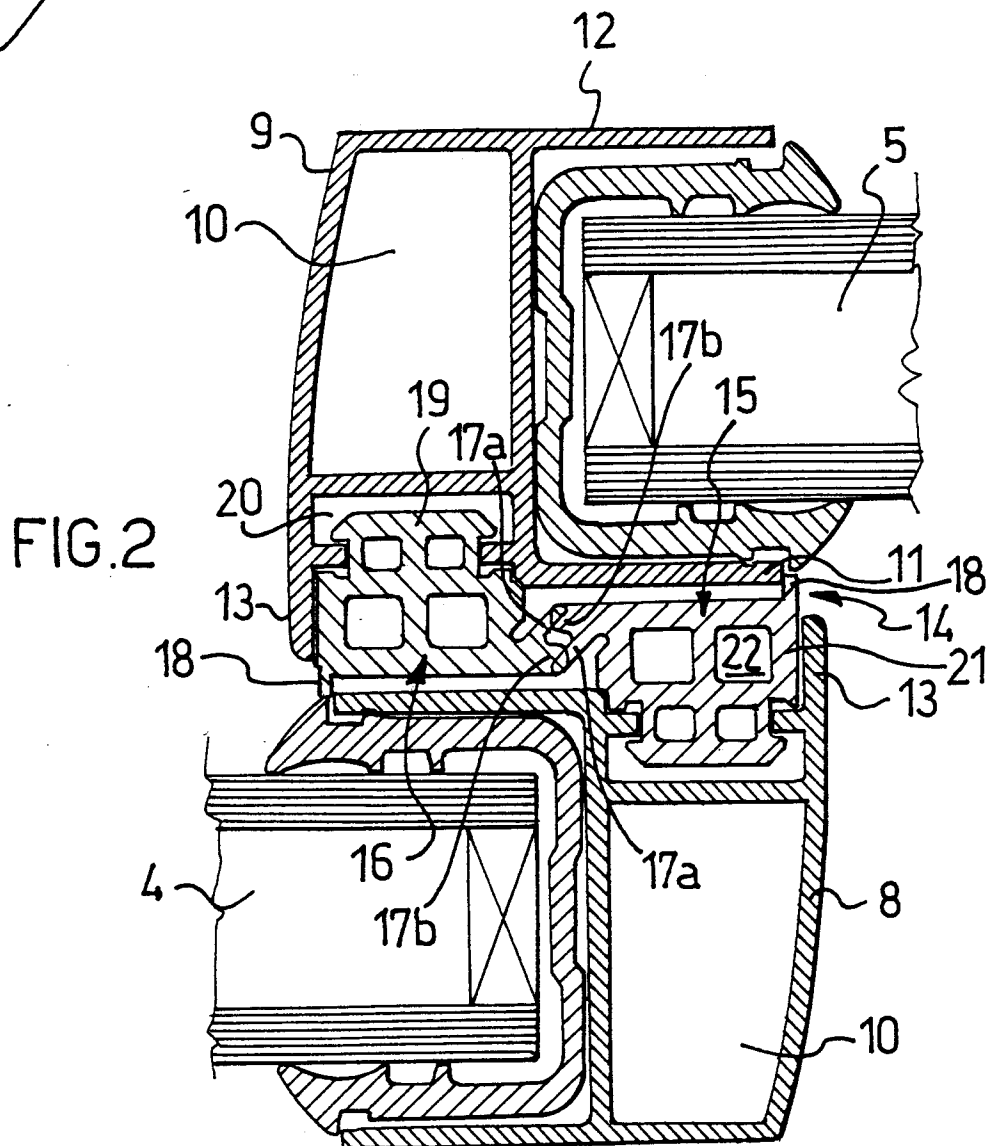
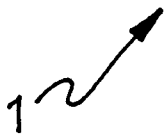


FIG.2



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EUROPEAN SEARCH REPORT

Application Number
EP 98 20 2031

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
X	US 4 185 416 A (WILMES RICHARD J) 29 January 1980	1-4,7,8, 10,11	E06B3/46
Y	* column 3, line 8 - line 27 * * column 4, line 29 - column 6, line 43 * * figures *	5,6,9,12	
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Y	* the whole document *	5,6	
X	DE 18 95 317 U (WURAGROHR) 25 June 1964 * the whole document *	1,2,7, 10,11	
Y	GB 1 496 507 A (DEVENTER KG) 30 December 1977 * page 1, line 33 - line 59 * * page 2, line 108 - line 117 * * figure 5 *	9,12	
The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (Int.Cl.6) E06B
Place of search THE HAGUE		Date of completion of the search 21 April 1999	Examiner Depoorter, F
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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**ANNEX TO THE EUROPEAN SEARCH REPORT
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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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