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(54) **Adapter for systems for window and door frames, and systems for window and door frames equipped with such adapter, particularly for mobile houses, bungalows, boat-houses, campers and caravans**

(57) An adapter (5) with wings (11, 14) is disclosed, that is adapted to be applied to systems for window and door frames (1), particularly for mobile houses, boat-houses, bungalows, campers and caravans, that it is equipped with: at least two wings (11, 14) that are adapted to form on a side a recess for the connection to an external panel (16) to be applied onto a carrier structure (20) for the systems for window and door frames (1), and that are adapted to cooperate on another side with an abutment plane (18) for the carrier structure (20); and engagement means (7, 9) with the systems for window and door frames (1).

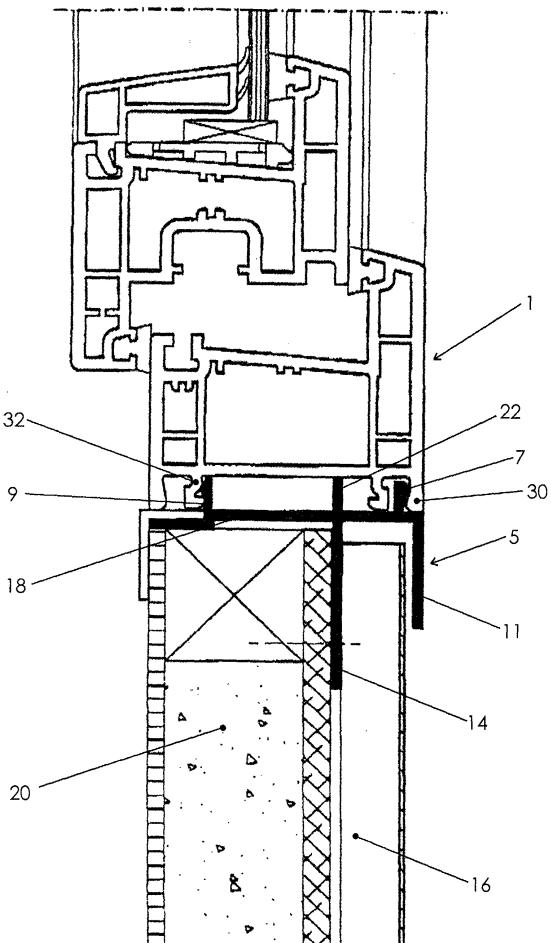


Fig. 1

**Description**

**[0001]** The present invention refers to an adapter for systems for window and door frames, and to the systems for window and door frames equipped with such adapter, that can be used in particular for mobile houses, bungalows, boat-houses, campers and caravans.

**[0002]** For applications of the above-mentioned type, the installation and/or replacement operations of systems for window and door frames are often long and difficult, due to the particular conditions provided by support walls of such systems. In particular, as disclosed in documents US-A-6,055,782 and US-A-5,557,894, the systems for window and door frames that can be used in these fields are made in a single piece and equipped with wings that allow fixing them between structural wall and external panels for a construction and to thereby secure them to the support walls of the construction itself.

**[0003]** These arrangements simplify assembling operations of the systems for window and door frames, but must provide for systems that are previously prepared for their purpose, and that cannot be adapted to all types of applications that are present nowadays. The manufacturers must therefore provide for a warehouse comprising the major types of "modified" systems for window and door frames, with obvious waste of resources and costs, and without even being able to satisfy all market requests, given the commercial presence of several types of systems for window and door frames.

**[0004]** Object of the present invention is solving the above prior-art problems, by providing an adapter for systems for window and door frames that can be applied to any type of system being marketed: once having performed their coupling, the adapted will allows placing the adapter-frame assembly between structural wall and external panels of the construction, and will make easy, quick and inexpensive its installation even in harsh environments, such as mobile houses, bungalows, boat-houses, campers, caravans and the like.

**[0005]** Another object of the present invention is providing systems for window and door frames equipped with adapters both in a factory, and through field technicians, in a simple, quick and inexpensive way, always in compliance with the provided applications.

**[0006]** The above and other objects and advantages of the invention, as will appear from the following description, are obtained by an adapter for systems for window and door frames, and by a systems for window and door frames as claimed in the independent claims. Preferred embodiments and non-trivial variations of the present invention are claimed in the dependent claims.

**[0007]** The present invention will be better described by some preferred embodiments thereof, given as a non-limiting example, with reference to the enclosed drawings, in which:

- Figure 1 is a top sectional view of a first preferred embodiment of an adapter according to the present invention, applied to a common system for window and door frames;
- 5 - Figure 2 is a top detailed view of a wing of the adapter in Fig. 1;
- Figure 3 is a top view of the adapter in Fig. 1;
- Figure 4 is a top sectional view of a second preferred embodiment of an adapter according to the present invention applied to a common system for window and door frames; and
- 10 - Figure 5 is a top sectional view of a third preferred embodiment of an adapter according to the present invention applied to a common system for window and door frames.

**[0008]** With reference to the Figures, a preferred embodiment of the adapter for systems for window and door frames of the present invention is shown. As can already be seen in the Figures, it is possible to realise quite a lot of variations to the adapter, as regards location, number and arrangement of parts and construction and installation particularities: it is obvious that all these variations fall within the scope of the invention as claimed in the enclosed Claims.

**[0009]** With reference to the Figures, the adapter 5 with wings 11, 14 of the present invention is adapted to be applied to systems for window and door frames 1, particularly for mobile houses, bungalows, boat-houses, campers and caravans, and is substantially equipped with at least two wings 11, 14, which wings 11, 14 are adapted to form on a side a recess for the connection to an external panel 16 of a construction, to be applied onto a carrier structure 20 of the construction itself. Moreover, the wings 11, 14 are adapted to cooperate on another side with an abutment plane 18 for the connection to the carrier structural wall 20 of the construction.

**[0010]** The assembling of such systems for window and door frames 1 thereby occurs through a connection (for example by means of clawing) of the wing 14 of the adapter 5 to the structural wall 20, then by foaming the abutment plane 18 to the wall 20 and then by inserting the external panel 16 into the recess between the wings 11 and 14.

**[0011]** Moreover, the adapter 5 of the invention comprises engagement means 7, 9 with the systems for window and door frames 1. The first ones of such engagement means 7 are preferably composed of an elongated section bar whose section is shaped as an "S" and that is adapted to get in contact with a corresponding wall 30 of the systems for window and door frames 1. The other engagement means 9, instead, are preferably composed of an elongated section bar equipped with a projection 34 for engaging a wall 32 of the systems for window and door frames 1.

**[0012]** In order to improve the adherence to the support walls, preferably at least one of the wings 11 is fur-

ther equipped with one contact and holding projection 12 with the external panel 16.

**[0013]** Moreover, the adapter 5 of the present invention can also be further equipped with abutment means 22 against the systems for window and door frames 1. Such abutment means 22 are preferably composed of an elongated section bar adapted to rest against the systems for window and door frames 1 to improve the abutment holding action of the adapter 5 itself against the system for window and door frames 1.

**[0014]** Moreover, in the adapter 5 of the invention, in order to further improve the holding action, the abutment plane 18 is further equipped with a plurality of teeth 26 to realise a further engagement with the contact surface between the adapter 5 and the systems for window and door frames 1.

**[0015]** With the above-described adapter 5, it is thereby possible to provide a system for window and door frames 1 of any arrangement and size, particularly a system for window and door frames 1 for mobile houses, bungalows, boat-houses, campers and caravans, with the capability of being installed in a quick, simple and inexpensive way.

## Claims

1. Adapter (5) with wings (11, 14) adapted to be applied to systems for window and door frames (1), particularly for mobile houses, boat-houses, bungalows, campers and caravans, **characterised in that** it is equipped with:

- at least two wings (11, 14), said wings (11, 14) being adapted to form on a side a recess for the connection to an external panel (16) to be applied onto a carrier structure (20) for said systems for window and door frames (1), said wings (11, 14) being adapted to cooperate on another side with an abutment plane (18) for the connection to the carrier structure (20) for said systems for window and door frames (1); and
- engagement means (7, 9) with said systems for window and door frames (1).

2. Adapter (5) according to Claim 1, **characterised in that** said engagement means (7) are composed of an elongated section bar whose section is shaped as an "S" and adapted to get in contact with a corresponding wall (30) of said systems for window and door frames (1).

3. Adapter (5) according to Claim 1, **characterised in that** said engagement means (9) are composed of an elongated section bar equipped with a projection (34) for engaging a wall (32) of said systems for window and door frames (1).

4. Adapter (5) according to Claim 1, **characterised in that** at least one of said wings (11) is further equipped with one contact and holding projection (12) with said external panel (16).

5. Adapter (5) according to Claim 1, **characterised in that** it is further equipped with abutment means (22) against said systems for window and door frames (1).

10 6. Adapter (5) according to Claim 5, **characterised in that** said abutment means (22) are composed of an elongated section bar adapted to rest against said systems for window and door frames (1) to improve the abutment holding action of said adapter (5).

15 7. Adapter (5) according to Claim 1, **characterised in that** said abutment plane (18) is further equipped with a plurality of teeth (26) to realise a further engagement with the contact surface between said adapter (5) and said systems for window and door frames (1).

20 8. System for window and door frames (1), particularly system for window and door frames (1) for mobile houses, bungalows, boat-houses, campers and caravans, **characterised in that** it is equipped with at least one adapter (5) according to any one of the previous Claims.

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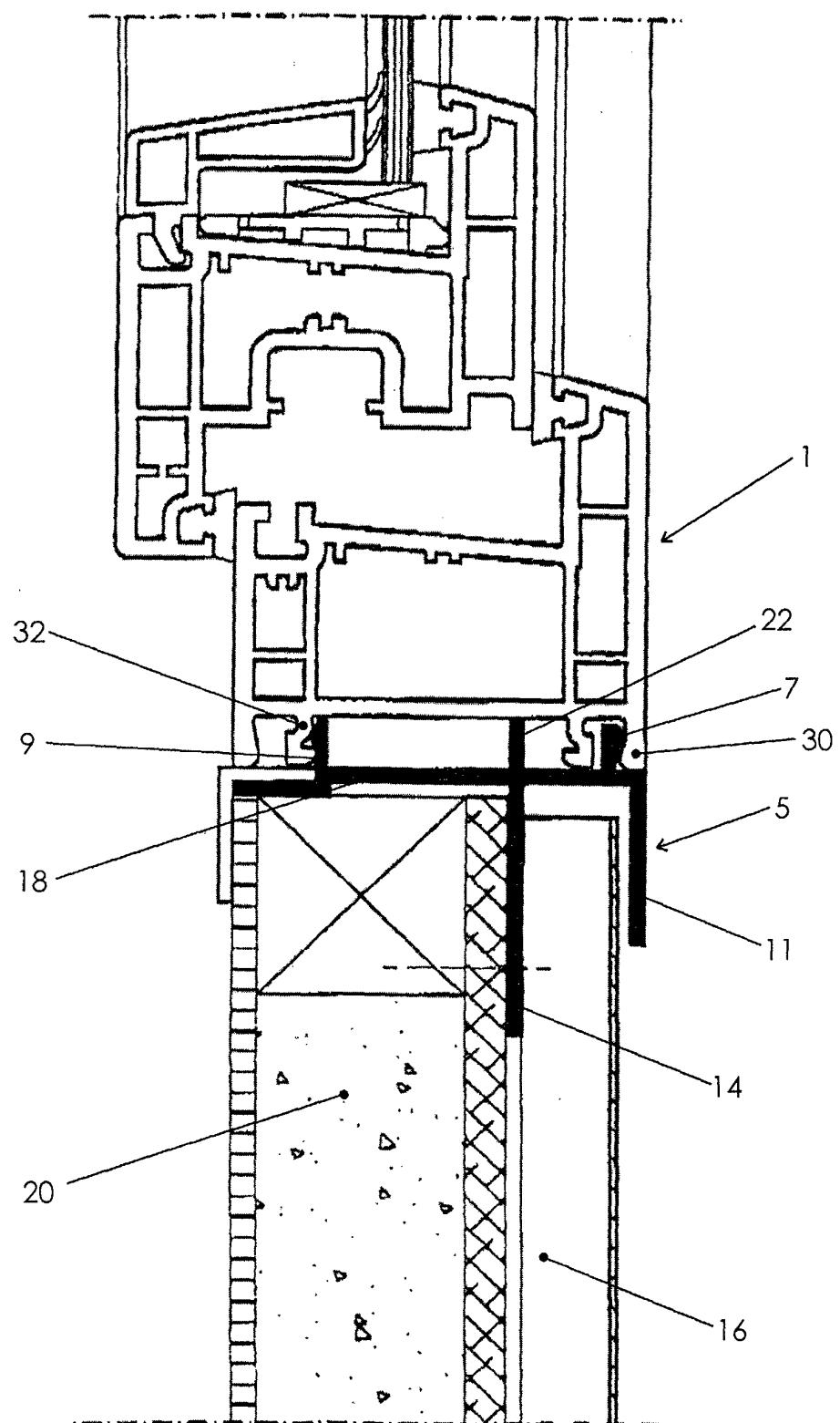


Fig. 1

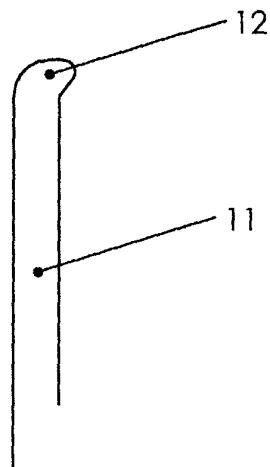


Fig. 2

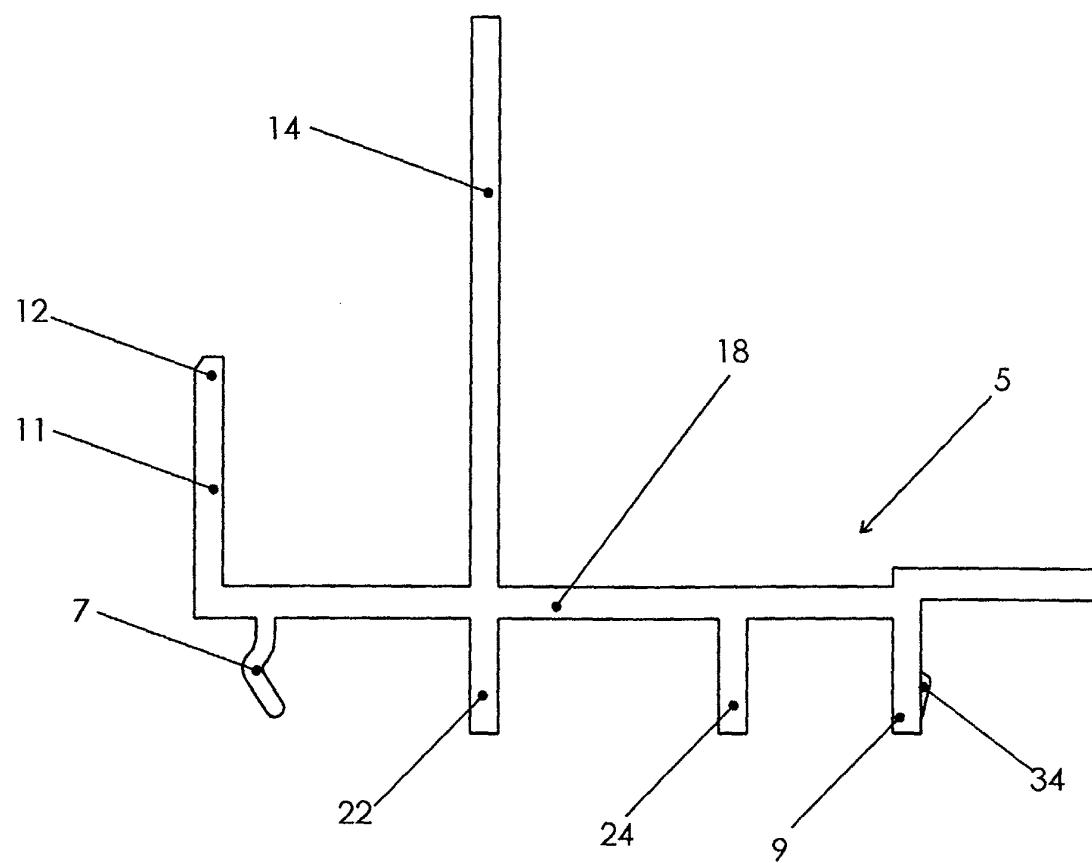


Fig. 3

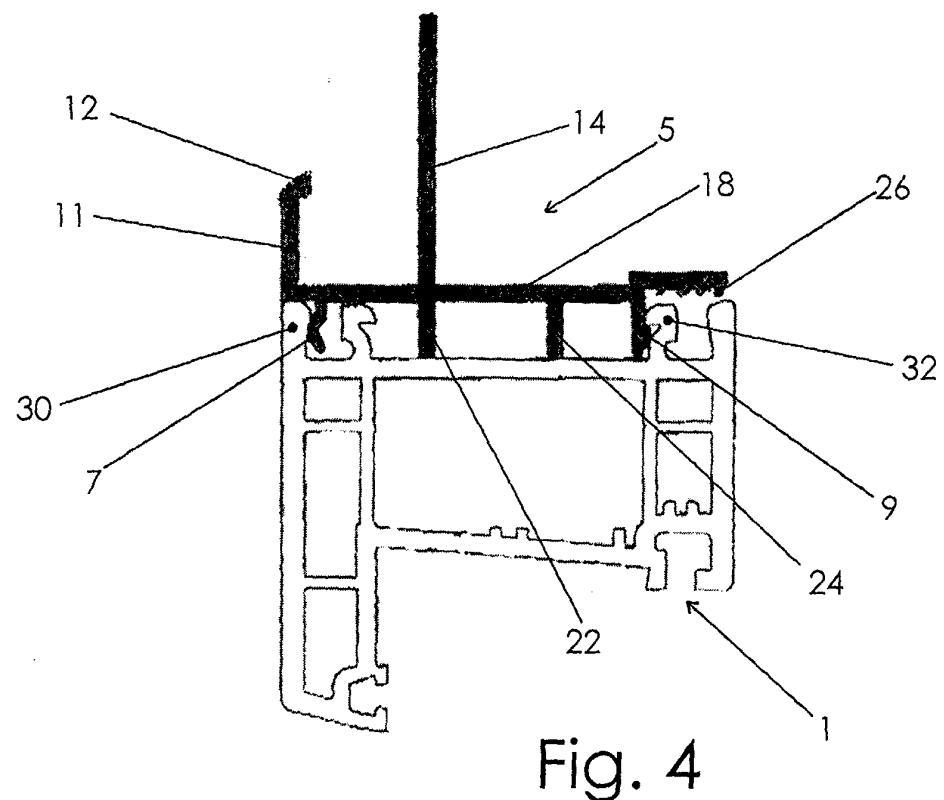


Fig. 4

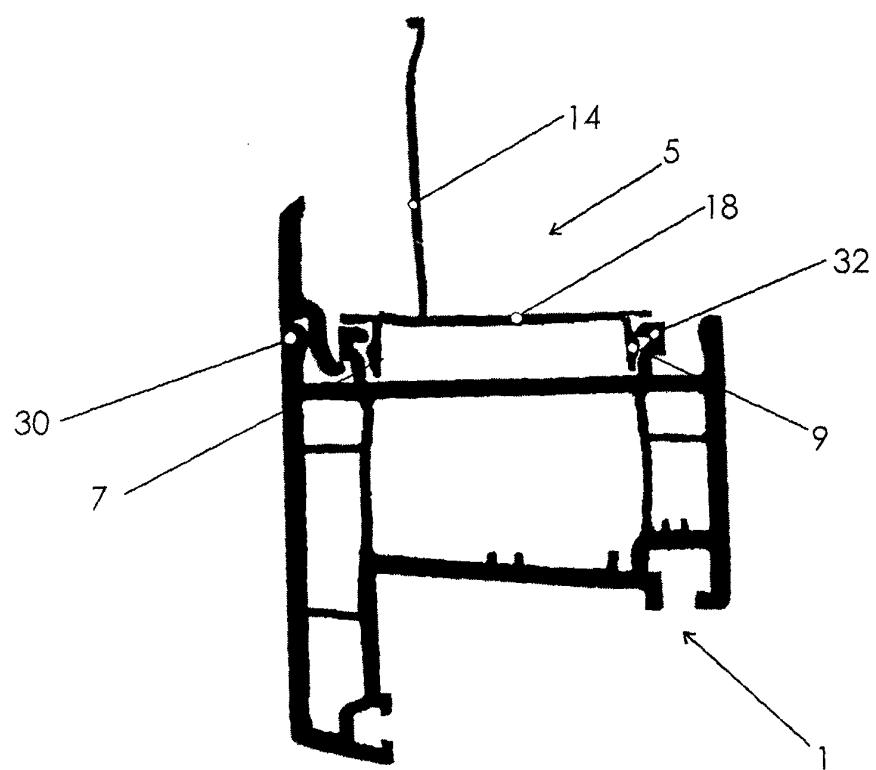


Fig. 5



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## EUROPEAN SEARCH REPORT

Application Number  
EP 03 42 5049

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.7)
X	US 5 392 574 A (SAYERS LELAND D) 28 February 1995 (1995-02-28) * column 3, line 65 - column 6, line 65 * * figure 3 * ---	1-5	E06B1/62 E06B1/60
X	CA 2 292 125 A (MARZEN ARTISTIC ALUMINUM LTD) 7 June 2001 (2001-06-07) * page 3, line 9 - page 7, line 10 * * figures 1,2 * -----	1-6	
The present search report has been drawn up for all claims			
Place of search	Date of completion of the search		Examiner
THE HAGUE	13 June 2003		Verdonck, B
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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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ON EUROPEAN PATENT APPLICATION NO.

EP 03 42 5049

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 The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

13-06-2003

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