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(54) Title: ASSEMBLY OF A LEAF AND A FRAME ADAPTED TO ROTATABLY RECEIVE THE LEAF

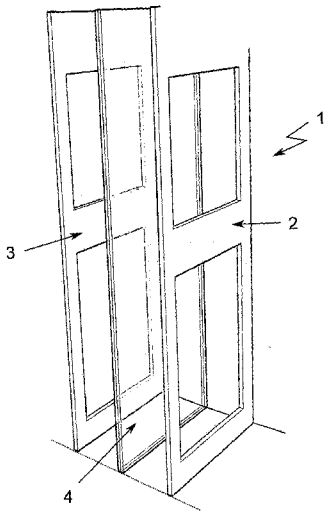

Fig. 1

(57) Abstract: The invention relates to an assembly of a wing frame and a wing, such as a door or a window, wherein the wing frame is arranged for rotatable reception of the wing. An assembly according to the preamble is known in the art. The known assembly is applied in a building and comprises for example a wing frame of usually wood or plastic, which around a (window) opening is applied and a wing, such as a door or a window, of usually wood or plastic which can be provided with recesses, wherein a window of thermally insulated glass is applied. The window is connected to the wing by means of glass slats around the window. The known assembly has the disadvantage, that the wing forms a thermal bridge, since the wing has a higher U-value than the surrounding exterior wall, which usually is a cavity wall. Through this thermal bridge heat from the building is lost. It is the aim of the invention to provide an assembly which does not have this disadvantage, but which still has the same design possibilities as the known assembly.

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ASSEMBLY OF A WING AND A WING FRAME ARRANGED FOR ROTATABLE RECEPTION OF THE WING

The invention relates to an assembly of a wing frame and a wing, such as a door or a window, wherein the wing frame is arranged for rotatable reception of the wing.

An assembly according to the preamble is known in the art. The known assembly is applied in a building and comprises for example a wing frame of usually wood or plastic, which is applied around a (daylight) opening and a wing, such as a door or a window, usually made of wood or plastic, which can be provided with recesses, wherein a window of thermally insulated glass is applied. The window is connected to the wing by means of glass slats around the window.

The known assembly has the disadvantage, that the wing forms a thermal bridge, since the wing has a higher U-value than the surrounding exterior wall, which usually is a cavity wall. Through this thermal bridge heat from the building is lost.

It is the aim of the invention to provide an assembly which does not have this disadvantage, but which still has the same design possibilities as the known assembly.

To this end the assembly according to the invention has the feature, that the wing is assembled from an inner member and an outer member, wherein the inner member and outer member have similar shapes, that a thermally insulated plate-shaped intermediate member is placed between the inner member and outer member, which substantially extends over the entire surface of the inner member and the outer member, such that the inner member and outer member do not touch each other.

In this manner the U-value of the wing of the assembly according to the invention is no longer dependent on the U-value of the material of the wing, but substantially only dependent on the U-value of the intermediate member. The design possibilities of the assembly according to the invention are however more extensive than that of the known assembly. It is for example possible to carry out the inner member and the outer member out of two different materials, such as for example a wooden outer member and a plastic inner member. In order to enhance the fireproofing capabilities of the wing one can for example carry out the inner member of fireproof material.

In a first preferred embodiment the intermediate member is substantially formed by thermally insulated glass and the wing and the wing frame are arranged for co-operation with a delayed closing mechanism. Thermally insulated glass, such as for example HR++ glass, has very good thermal insulating properties and thus ensures a lower U-value.

A delayed closing mechanism in the assembly according to the invention is necessary, since this prevents the breaking of the intermediate member in case a user

closes the wing with too much force.

The wing of the inventive assembly has preferably substantially the same thickness as the wing of the known assembly. As a result, the wing of the inventive assembly uses less wood or plastic. Because the stiffness of the wing of the inventive assembly is substantially determined by the glass intermediate member, the wing is also less like to be warped in the case the inner member or the outer member is carried out in for example wood with respect to a wooden wing of the known assembly.

In a practical embodiment the intermediate member is attached to the inner member and the outer member by means of adhesives. Known adhesives are for example clue, kit, double sided tape or a combination thereof.

The inner member and outer member can comprise one or more equally shaped recesses which function as a see-through passage and/or light passage. In this way the wing of the inventive assembly has the same appearance as the wing of the known assembly which is provided with one or more windows. Furthermore the wing of the inventive assembly is less susceptible to burglary with respect to the wing of the known assembly, since it is not possible to remove a window to provide access to the building.

By applying the adhesives around the recess such that moisture cannot penetrate between the intermediate member and the inner member or the outer member, the application of glass slats can be omitted.

In an elegant embodiment the wing frame is provided with a recess for inclusion of one or more locks and the wing is arranged for co-operation with the one or more locks. By applying the lock in the wing frame no recess has to be applied in the intermediate member of the wing. Preferably the type of lock is electromagnetic.

The invention also relates to a wing as part of the inventive assembly. The wing according to the invention is most suitable for application as exterior door or exterior window, or any other application whereby a large temperature difference is present between the both sides of the placed wing.

The invention will be further elucidated by the following figure, wherein

Figure 1 shows a exploded view of a first preferred embodiment of the assembly 1 according to the invention, wherein the wing, in this case a door, is assembled from an inner member 2, an outer member 3, and a intermediate member 4, which is made from thermally insulated glass. The intermediate member 4 is preferably applied to both the inner member 2 and the outer member 3 with adhesives, in such a way that moisture cannot penetrate between the intermediate member 4 and the inner member 2 or the outer member 3. This also omits the use of glass slats.

The door is provided with recesses 6, which serve as a see-through passage and/or

light passage. The recesses 6 serve however only for illustration. It is also possible to carry out the door of the inventive assembly without recesses.

The door frame 5 is carried out with a delayed closing mechanism 7, which in figure 1 is carried out as a floor spring.

The invention is finally explicitly not limited to the described and shown embodiments, but also explicitly comprises all possible combinations thereof. The embodiment is thus explicitly not limited to a door, but could comprise any other form of a wing, such as a window.

The invention therefore generally extends to any embodiment which falls within the scope of the appended claims as seen in the light of the previous description and figure.

CLAIMS

1. Assembly of a wing frame and wing, such as a door or a window, wherein the wing frame is arranged for rotatable reception of the wing, characterized in that the wing is assembled from an inner member and an outer member, wherein the inner member and outer member have similar shapes, that a thermally insulated plate-shaped intermediate member is placed between the inner member and outer member, which substantially extends over the entire surface of the inner member and the outer member, such that the inner member and outer member do not touch each other.

2. Assembly according to claim 1, wherein the intermediate member substantially is formed by thermally insulated glass and wherein the wing and the wing frame are arranged for co-operation with a delayed closing mechanism.

3. Assembly according to claim 1 or 2, wherein the intermediate member is attached to the inner member and the outer member by means of adhesives.

4. Assembly according to claims 2 to 3, wherein the inner member and outer member comprise one or more equally shaped recesses which function as a see-through passage and/or light passage.

5. Assembly according to claims 1 to 4, wherein the wing frame is provided with a recess for inclusion of one or more locks and the wing is arranged for co-operation with the one or more locks.

6. Wing as part of the assembly according to claims 1 to 5.

7. Wing according to claim 6, wherein the wing forms an exterior door or exterior window.

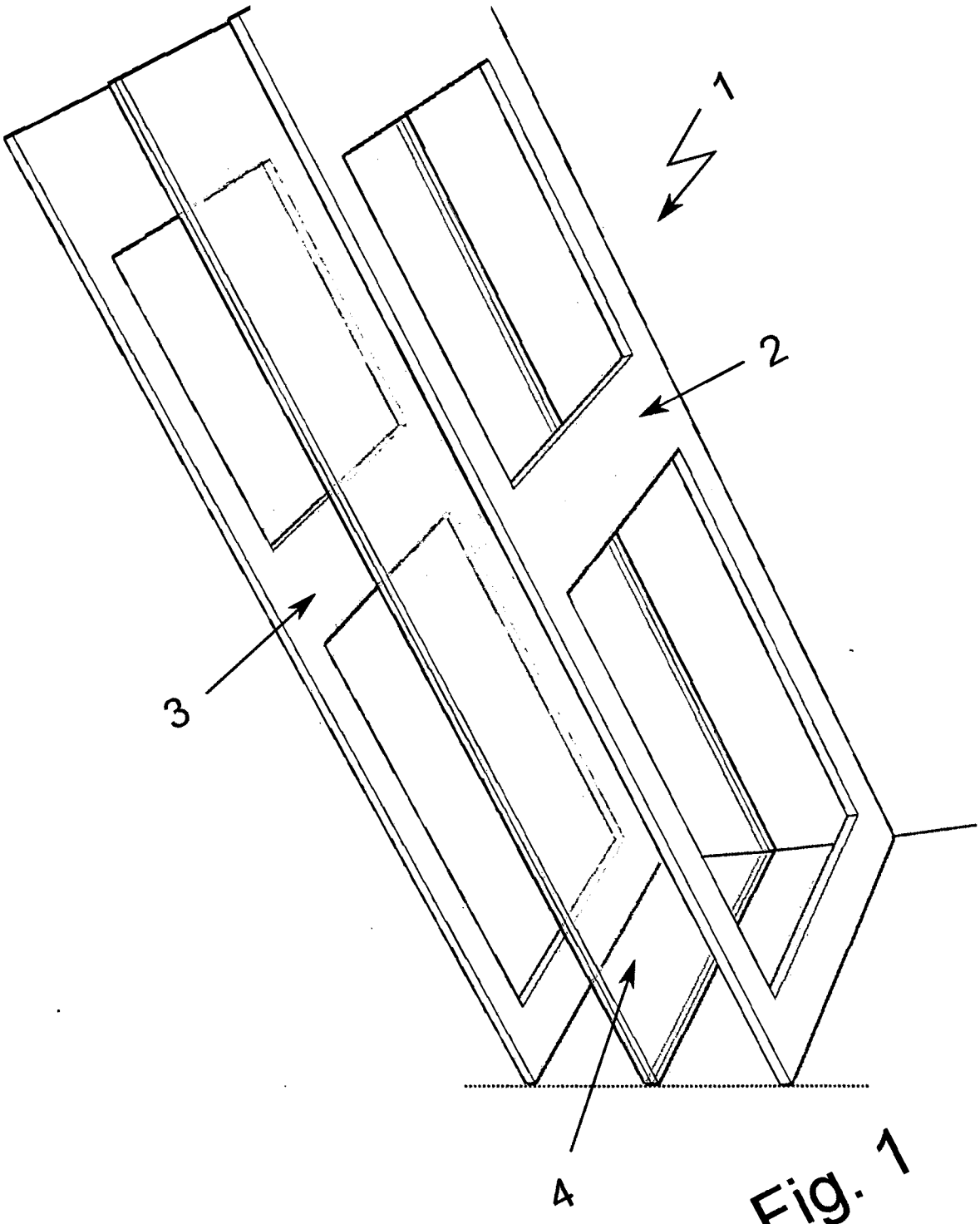

Fig. 1

INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
INV. E06B3/67 E06B3/70
ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
E06B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DE 93 10 235 U1 (VENO FENSTER SYSTEME GMBH [DE]) 11 November 1993 (1993-11-11)	1,3,4,6, 7
Y	page 1, line 17; claims 11,12; figures 1,3	2

X	DE 100 48 107 A1 (BIFFAR KG OSKAR D [DE]) 11 October 2001 (2001-10-11)	1,3,4,6
A	paragraphs [0014] - [0020]; figures 1-3	2

X	DE 203 04 020 U1 (SAELZER SICHERHEITSTECHNIK [DE]) 5 June 2003 (2003-06-05)	1,3-7
Y	page 3, line 11 - page 5, line 34; figures 1,2a,2b,3	2

☐ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

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"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

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"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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