

(19)



Europäisches Patentamt
European Patent Office
Office européen des brevets



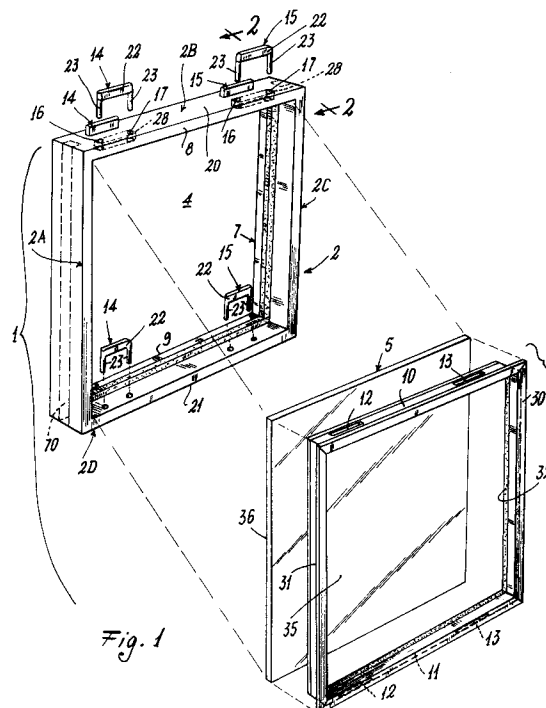
(11) Publication number:

0 563 441 A1

(12)

EUROPEAN PATENT APPLICATION(21) Application number: **92118391.9**(51) Int. Cl.⁵: **E06B 3/58, E06B 3/68**(22) Date of filing: **28.10.92**(30) Priority: **03.04.92 IT MI920824**(43) Date of publication of application:
06.10.93 Bulletin 93/40(84) Designated Contracting States:
AT CH DE IT LI NL(71) Applicant: **MOVI S.R.L.**
Via Don Guanella, 2
I-22060 Arosio (Como)(IT)(72) Inventor: **Vigano, Lino**
Via Gattedo, 12
I-22060 Carugo (COMO)(IT)(74) Representative: **Giambrocono, Alfonso, Dr.**
Ing. et al
Ing. A. Giambrocono & C. S.r.l.
Via Rosolino Pilo 19/B
I-20129 Milano (IT)(54) **Frame in particular for windows, doors movable panels and the like.**

(57) A frame (1), in particular for windows, doors, movable panels, partitions and the like for retaining an opaque or translucent element, a grid or the like (5), comprises a base support element (2), a seat for the opaque, translucent or like element (5), a counter-frame (7) removably connectable to said base element (2), and fixing means (14, 15) to secure said counter-frame (7) to said base element (2), said counter-frame (7) carrying sealing and retention means (32) to cooperate with the translucent or like element (5) when the frame (1) is assembled.

**EP 0 563 441 A1**

This invention relates to a frame, in particular for windows, doors, panels, partitions and the like for retaining an opaque or translucent element, a grid or the like. The invention also relates to a door, window, panel or the like comprising a plurality of said frames.

A usual frame for retaining an opaque, translucent or like element or insert is known to generally comprise a polygonal element defining a seat for said insert.

This polygonal element or counter-frame comprises inner recesses and a through slot in at least one of its sides such as to communicate with the recesses present in the adjacent sides. The insert is inserted into the counter-frame through the slot.

Usual sealing and retention elements (such as putty, plastic elements or the like) are advantageously placed in the recesses to securely fix the insert to the counter-frame.

As is apparent from the foregoing it is laborious to achieve proper fixing between the frame and the insert, which is not always easy to introduce into the slot and the recesses in the counter-frame. In addition the insert is frequently slack within the counter-frame and can consequently suffer breakage or damage when the frame is being fixed to other similar frames (to form doors, windows, movable panels, partitions or the like) or into a seat in a wall into which the frame is to be fitted.

In addition, the frames of the current state of the art are difficult to transport because they already generally comprise the counter-frame and its associated insert at the time of transportation. This can lead to breakage of the insert and in any event increases the weight of the frame.

An object of the present invention is to provide a frame of the aforesaid type which is simple to assemble, and into which an insert of the stated type can be easily, quickly and reliably fitted and retained therein without the need to associate foreign matter with the frame, such as putty, plastic elements or the like.

A further object is to provide a frame of the aforesaid type which can be easily used to form movable panels, partitions, doors and windows, rapidly and at low cost.

A further object is to provide a frame of the aforesaid type which is simple to transport, is of low assembly time and of lower cost than known frames.

These and further objects which will be more apparent to the expert of the art are attained by a frame of the aforesaid type, characterised by comprising a base support element defining a seat for the insert, at least one counter-frame removably connectable to said base element, and fixing means to secure said counter-frame to said base element, sealing and retention means being pro-

vided to cooperate with the insert when the frame is assembled.

The present invention will be more apparent from the accompanying drawing, which is provided by way of non-limiting example and in which:

Figure 1 is an exploded perspective view of the frame according to the invention;

Figure 2 is a partial section on the line 2-2 of Figure 1 with the frame assembled;

Figure 3 is a partial perspective sectional view of one application of the invention; and

Figure 4 is a front view showing the use of the invention.

With reference to said Figures 1 and 2, a frame is indicated overall by 1 and comprises a base support element 2 comprising four parts 2A, 2B, 2C and 2D joined together in known manner to define a seat 4 in which an element or insert 5 of translucent or opaque material or of grid or mesh form can be positioned. The insert can be of glass, wood, plastics or other known material.

The element 2 (constructed in one piece in the example shown in Figures 1 and 2) is arranged to cooperate with at least one counter-frame 7 (two in Figures 1 and 2) to be positioned in correspondence with a corresponding face 8 or 9 of said element. In two opposing sides 10 and 11, each counter-frame 7 comprises recesses 12 and 13 arranged to cooperate with corresponding stops 14 and 15 inserted through seats 16 and 17 provided in opposing sides 20, 21 of the element 2, the stops being inserted through the seats 16 and 17 of the side 21 from the inside of said element. Said stops 14, 15 comprise an elongate body 22 from which feet 23 extend to be inserted into the seats 16 and 17 defined by through holes formed in at least the side 20 of the element 2. The elongate body 22 remains projecting from the corresponding side 20 and 21, or in the case of the stops 14 and 15 associated with the side 20 their body can be embedded in it if the seats 16 and 17 are provided in the base of a recess 28 (shown dashed in Figure 1) provided in the corresponding side of the element 2.

The counter-frame 7 comprises a face 30 to project beyond the face 8 (or 9) of the element 2 with which it is associated. That face 31 thereof opposite the face 30 is inserted into the seat 4. This (inner) face 31 supports an annular member 32 of elastic material such as rubber or elastic flexible plastics or other equivalent material, arranged to cooperate with the insert 5 and extending along the entire said face 31.

Specifically, in Figures 1 and 2 two counter-frames 7 are associated with the element 2, the members 32 being in opposing positions in the seat 4 and cooperating with opposite faces 35 and 36 of the insert so as to act as sealing (for example

against the atmospheric agents) and retention elements for the insert 5 within the element 2.

It will now be assumed that the insert 5 is to be fitted to said element.

To achieve this, a first counter-frame 7 is fixed to the element (for example to its face 9). This is done by firstly inserting the stops 14 and 15 through the corresponding seats 16 and 17 of the element 2.

The first counter-frame 7 is then mounted on the elongate bodies 22 of said stops projecting from said side 21 so that said bodies 22 become inserted in the recesses 12 and 13 provided in the side 11 thereof.

The counter-frame is then placed against the face 9 of the element 2 and the stops 14 and 15 are inserted through the seats 16 and 17 in the side 20 of said element. In this manner, the feet 23 of said stops pass beyond said side 20 and penetrate into the recesses 12 and 13 in the side 10 of the counter-frame 7 lying against the face 9 of said element 2. This counter-frame hence becomes fixed to this latter.

The insert 5 is then placed in the seat 4, and using the same procedure as just described the other counter-frame 7 is fitted to the element 2 in correspondence with its face 8.

In this manner the members 32 of said counter-frames press against the insert 5 and retain it securely in the element 2.

The frame 1 formed as described can be used to define a window element in a partition wall or movable panel.

Alternatively, the invention enables panels, sliding doors, or fixed or movable partitions to be formed comprising a plurality of window elements defined by a frame according to the invention.

With reference to Figures 3 and 4, in which parts corresponding to those already described are indicated by the same reference numerals, a panel 50 comprises a plurality of uprights 51, cross-members 52 and window elements 53 defined between these latter.

In each portion 52A and 52B of the cross-member 52 lying along the upper ends 54 and lower ends 55 of each window element 53 there are provided seats 16 and 17 (each defined by through holes) to receive the stops 14 and 15 to retain the counter-frames 7 secured to said portions as already described.

Specifically (see in particular Figure 3 but also Figure 2), the body 22 of each stop 14 and 15, associated with a portion 52A or 52B of a cross-member 52 with which two counter-frames 7A and 7B are associated one above the other (as in Figure 3 for example), cooperates with a corresponding recess 12 or 13 provided in the side 11 of the counter-frame 7A, and their feet 23 emerging

from the seats 16 and 17 cooperate with the recess 12 or 13 provided in the side 10 of the counter-frame 7B. Consequently one pair of stops enables two counter-frames 7A and 7B to be at least partially secured to a single cross-member 52. This can also be seen from Figure 2, in which a counter-frame 7B associated with the face 9 of the element 1 is shown by dashed lines.

It should be noted that in the example shown in Figures 3 and 4, the base support element is defined by those portions of uprights 51 and cross-members 52 lying in correspondence with each window element 53. In addition the panel 50 comprises closure or end cross-members 60 and 61 also provided with seats 16 and 17 for the stops 14 and 15. The seats associated with the cross-member 60 are formed in a recess (analogous to that indicated by 28 in Figure 1) in which the bodies 22 of the corresponding stops 14 and 15 are housed. In this manner nothing projects upperly from the cross-member 60. Likewise, the seats 16 and 17 provided in the cross-member 61 are blind so that the feet 23 of the stops 14 and 15 associated with this cross-member cannot project lowerly from it.

Both in the embodiment shown in Figures 1 and 2 and in that shown in Figures 3 and 4 each counter-frame 7 comprises a flanged edge 93 which is partly superposed on the face of the adjacent support element. Likewise, the seats 16 and 17 provided in the cross-member 61 are blind so that the feet 23 of the stops 14 and 15 associated with them cannot project below this cross-member.

Alternatively a panel 50 can be formed by associating with each other a plurality of frames 1 of the type shown in Figures 1 and 2, but provided with lateral grooves 70 to enable said frames to be fitted to the panel uprights 51. However in this case the seats 16 and 17 in the side 20 of the element 2 of such a frame are formed in recesses 28 as already described, whereas the seats 16 and 17 in the side 21 are not through seats. The panel 50 defined in this manner hence comprises a plurality of frames 1 positioned one above the other and associated with common lateral uprights.

Various embodiments of the invention have been described. Further embodiments are however possible (such as one in which the element 2 of the frame 1 comprises within the seat 4 defined by it a step comprising the annular member 32 against which one side 36 of the insert 5 can rest) which fall within the scope of the present document.

Claims

1. A frame, in particular for windows, doors, movable panels, partitions and the like for retaining an opaque or translucent element, a grid or

similar insert, characterised by comprising a base support element (2) defining a seat (4) for the insert (5), at least one counter-frame (7) removably connectable to said base element (2), and fixing means (14, 15) to secure said counter-frame (7) to said base element (2), sealing and retention means (32) being provided to cooperate with the insert (5) when the frame (1) is assembled.

2. A frame as claimed in claim 1, characterised in that the base support element (2) is formed in one piece and comprises four portions (2A, 2B, 2C, 2D) defining the seat (4) for the insert (5).

3. A frame as claimed in claim 1, characterised in that the base support element comprises portions of uprights (51) and cross-members (52, 60, 61) of a panel, window, partition element or the like, arranged in correspondence with and bounding a window element (53) containing the insert (5).

4. A frame as claimed in claim 2, characterised in that the base support element (2) comprises lateral recesses (70) to enable the frame to be fitted onto guides or uprights of a panel, door, window or the like.

5. A frame as claimed in claim 1, characterised in that the counter-frame (7) comprises a flanged edge (93) to at least partly overlie that face (8, 9) of the base support element (2) on which the counter-frame is positioned.

6. A frame as claimed in claim 1, characterised in that the counter-frame (7) comprises recesses (12, 13) in opposing sides (11, 12) to cooperate with the fixing means (14, 15).

7. A frame as claimed in claim 1, characterised in that the fixing means (14, 15) are stops comprising projections (23) to be arranged in seats (16, 17) provided in opposing sides (20, 21) of the base element and projecting from the stop body (22), this latter being positioned in correspondence with said sides, at least one of said stops (14, 15) being positioned with its body (22) projecting into the seat (4) of the frame (1) and being arranged to cooperate with a corresponding recess (12, 13) in the counter-frame (7), at least one projection of at least one of said stops (14, 15) projecting into the seat (4) for the insert (5) and cooperating with a corresponding recess (12, 13) provided in the counter-frame.

8. A frame as claimed in claim 7, characterised in that at least some of the seats (16, 17) for the projections (23) of the stops (14) are through holes.

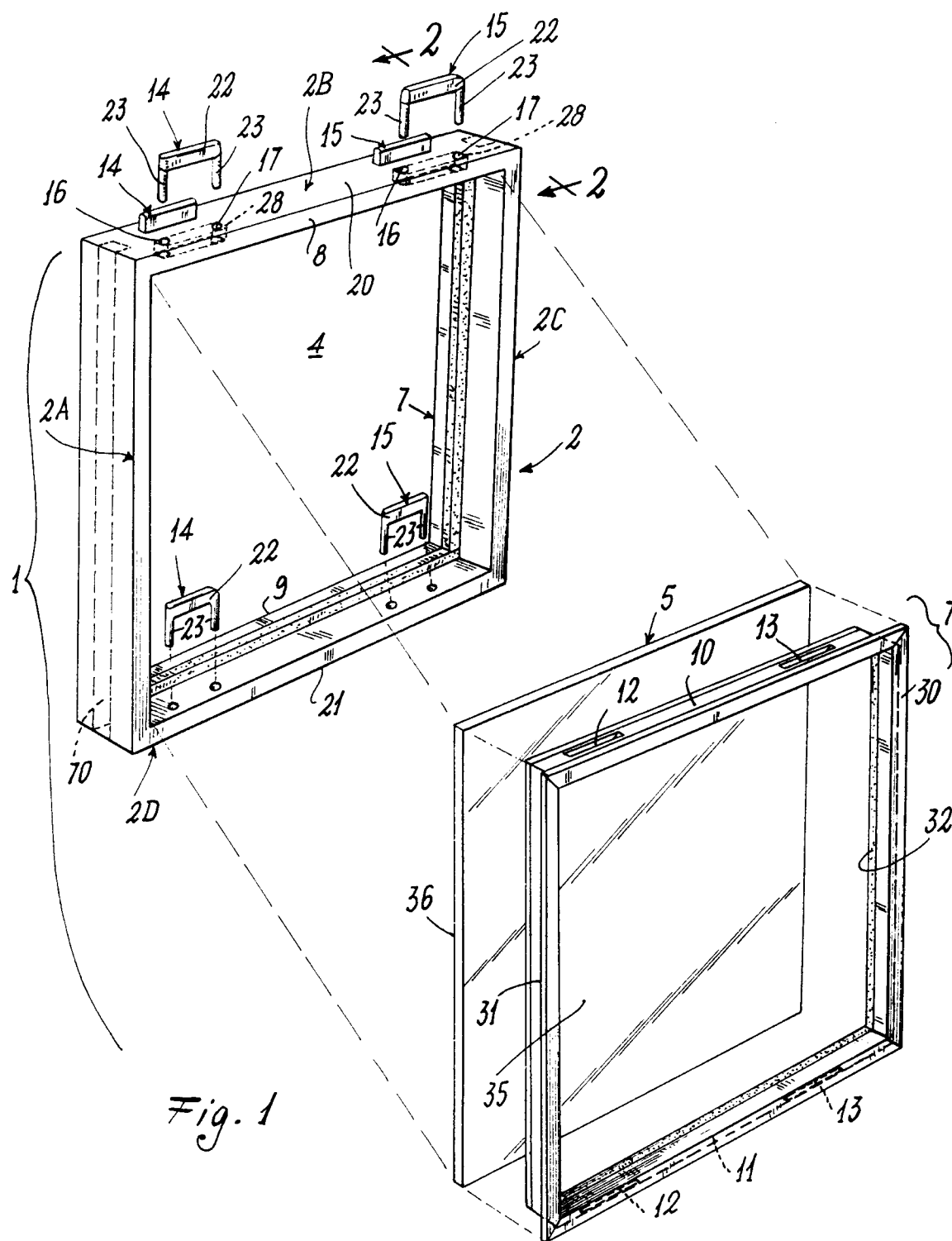
9. A frame as claimed in claim 1, characterised in that the sealing and retention means are a member (32) of elastic flexible material, preferably rubber or the like, and are associated with the counter-frame (7).

10. A frame as claimed in claim 1, characterised in that the sealing and retention means are a member (32) of elastic flexible material, preferably rubber or the like, and are associated with the base element (2).

11. A frame as claimed in claim 9 or 10, characterised in that the member (32) defining the sealing means is annular.

12. A frame as claimed in claim 1, characterised in that the base support element (2) comprises a step provided along the inner edges of the seat (4) for the insert (5).

13. A door, window, partition wall or movable panel comprising a plurality of frames 1 according to claim 1.



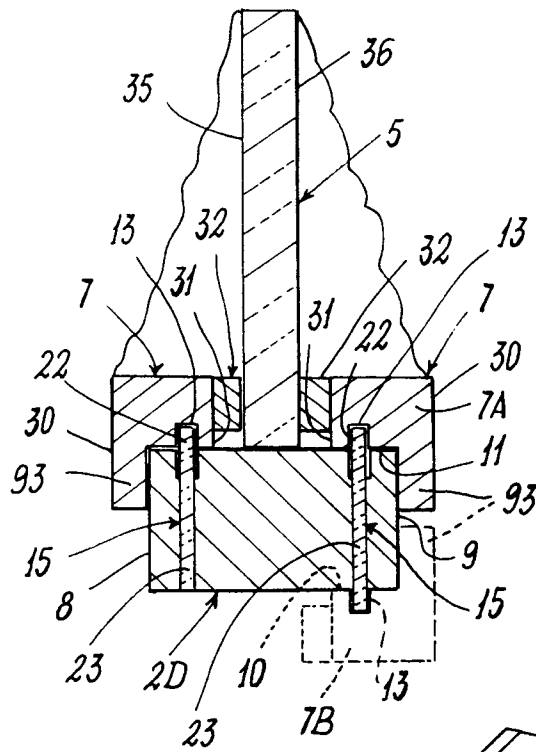


Fig. 2

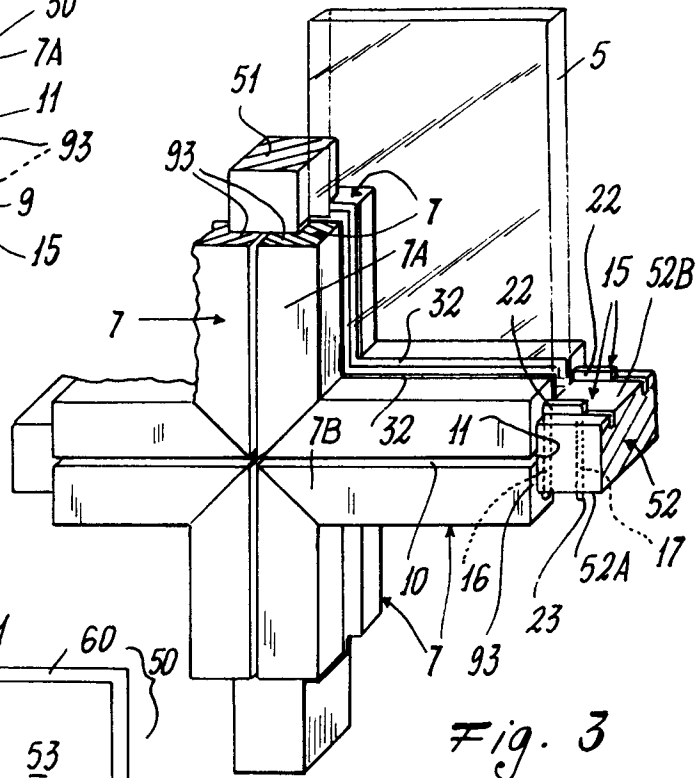


Fig. 3

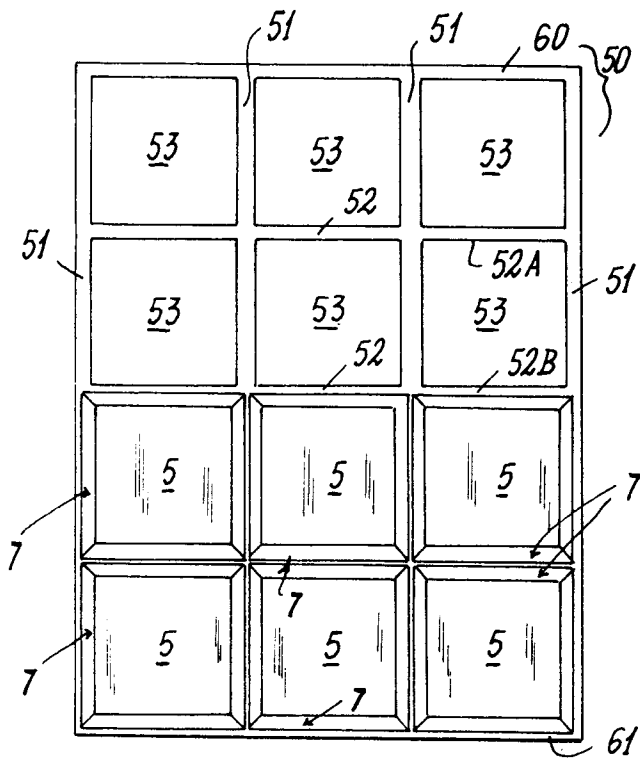


Fig. 4



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number

EP 92 11 8391

Page 1

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.5)
X	US-A-1 472 002 (HOLT)	1,2,12	E06B3/58
Y	* page 1, line 48 - line 100; figures *	4,13	E06B3/68
A	---	3,6-8	
X	US-A-3 293 821 (GILMORE)	1,2,5,6,12	
A	* column 2, line 24 - column 4, line 50; figures *	7	
X	DE-A-2 626 481 (HUBERT)	1,2,5,9,10,12	
	* page 9, paragraph 4 - page 12, paragraph 1; figures *		
X	CH-A-87 917 (KUNZ)	1,3,12	
	* the whole document *		
X	US-A-4 627 201 (HAMAMOTO ET AL)	1,2,9-12	
	* column 4, line 14 - column 5, line 68; figures 3,9 *		
Y	DE-U-9 104 882 (KARAPANAGIOTIS)	4,13	TECHNICAL FIELDS SEARCHED (Int. Cl.5)
A	* page 4, line 33 - page 9, line 32; figures *	1,5,9,10	E06B
A	GB-A-1 357 341 (HENDERSON)	1,3,6-8,12,13	
	* page 2, line 46 - line 71; figures *		
A	DE-U-8 913 407 (SCHULTE)	1,2,5-7,9,10	
	* page 3, line 30 - page 5, line 27; figures *		
A	GB-A-N487 (CRITTALL)	1,3,6,7,12,13	
	& GB-A-487 A.D. 1913		
	* the whole document *		

	-/--		
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 23 JUNE 1993	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			



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number

EP 92 11 8391

Page 2

DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	
A	DE-C-804 247 (SYDOW) * claim 3; figures 1,2 * -----	7	
			TECHNICAL FIELDS SEARCHED (Int. Cl.5)
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 23 JUNE 1993	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			