COMMONWEALTH OF AUSTRALIA

Patents Act

DECLARATION FOR A PATENT APPLICATION

▼ INSTRUCTIONS

(a) Insert "Convention" if applicable

(b) Insert FULL name(s) of applicant(s)

In support of the (a) convention application made by (b) Evald Valdemar Johansson

(c) Insert "of addition" if applicable

(d) Insert TITLE of invention

(hereinafter called "applicant(s)") for a patent (c) for an invention entitled (d) A Device For Fixation of the Spatial Interrelationship of Upended Frames

(e) Insert FULL name(s) AND address(es) of declarant(s) (See headnote*)

I/~~We~~ (e) Evald Valdemar Johansson

ofBredvduvegatan 3, S-421 69 Vastra Frolunda, SWEDEN

do solemnly and sincerely declare as follows:

1. I am/~~We are~~ the applicant~~(s)~~.

~~*(or, in the case of an application by a body corporate)*~~

1. ~~I~~ am/We are authorized to make this declaration on behalf of the applicant(s).
2. I am/~~We are~~ the actual inventor~~(s)~~ of the invention.

*(**or**, where the applicant(s) is/are not the actual inventor(s))*

(f) Insert FULL name(s) AND address(es) of actual inventor(s)

2. (f)

(g) Recite how applicant(s) derive(s) title from actual inventor(s) (See headnote**)

is/are the actual inventor(s) of the invention and ~~the~~ facts upon which the applicant(s) is/are entitled to make the application are as follows:

(g)

*(**Note:** Paragraphs 3 and 4 apply **only** to Convention applications)*

(h) Insert country, filing date, and basic applicant(s) for the/or EACH basic application

3. The basic application(s) for patent or similar protection on which the application is based is/~~are~~ identified by ***country, filing date, and basic applicant(s)*** as follows:

(h) Filed in SWEDEN on 12th March,1987
by Evald Valdemar Johansson

4. The basic application(s) referred to in paragraph 3 hereof was/were the first application(s) made in a Convention country in respect of the invention the subject of the application.

(k) Insert PLACE of signing

(l) Insert DATE of signing

(m) Signature(s) of declarant(s)

Note: No legalization or other witness required

Declared at (k) Bredvduvegatan3, S-421 69 Vastra Frolunda, SWEDEN

Dated (l) 17-08-89

(m) Göteborg 1989-08-17

To: The Commissioner of Patents

(12) PATENT ABRIDGMENT (11) Document No. AU-B-14823/88
(19) AUSTRALIAN PATENT OFFICE (10) Acceptance No. 626027

(54) Title
A DEVICE FOR FIXATION OF THE SPATIAL INTERRELATIONSHIP OF UPENDED FRAMES

International Patent Classification(s)
(51)[4] **B65D 085/48** **B65D 057/00** **B65D 069/00** **B65G 001/14**

(21) Application No. : **14823/88** (22) Application Date : **10.03.88**

(87) PCT Publication Number : **WO88/07011**

(30) Priority Data

(31) Number	(32) Date	(33) Country
8701028	**12.03.87**	**SE SWEDEN**

(43) Publication Date : **10.10.88**

(44) Publication Date of Accepted Application : **23.07.92**

(71) Applicant(s)
ECOND'OR SWEDEN AB

(72) Inventor(s)
EVALD VALDEMAR JOHANSSON

(74) Attorney or Agent
GRIFFITH HACK & CO. , GPO Box 4164, SYDNEY NSW 2001

(56) Prior Art Documents
FR 2548632
FR 130922

(57) Claim

1. An improved device for fixation of the spatial interrelationship of upended and spaced apart frames, e.g. window frames including casements and glazing, the improvement comprising a connection member, said connection member arranged to be attached to the outer face of a first frame, said connection member comprising a cross bar serving as an insert between two juxtaposed frames, viz said first frame and a second frame, a recess and an interconnecting part arranged to be inserted in the recess of an adjacent similar connection member attached to said second frame juxtaposed to said first frame, said interconnecting part and said recess designed to matingly engage to prevent separation of said two connecting members, thus interlocking said members and thus said first and second frames.

AU-AI-14823/88

PCT

WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 4 :
B65D 85/48, B65G 1/14

(11) International Publication Number: WO 88/ 07011

A1

(43) International Publication Date: 22 September 1988 (22.09.88)

626027

(21) International Application Number: PCT/SE88/00119

(22) International Filing Date: 10 March 1988 (10.03.88)

(31) Priority Application Number: 8701028-6

(32) Priority Date: 12 March 1987 (12.03.87)

(33) Priority Country: SE

~~(71)~~(72) ~~Applicant and~~ Inventor: JOHANSSON, Evald, Valdemar [SE/SE]; Brevduvegatan 3, S-421 69 Västra Frölunda (SE).

(74) Agents: FERKINGHOFF, C.-G. et al.; Alfons Hedbergs Patentbyrå AB, Aschebergsgatan 35, S-411 33 Göteborg (SE).

(81) Designated States: AT (European patent), AU, BE (European patent), BG, BR, CH (European patent), DE (European patent), DK, FI, FR (European patent), GB (European patent), HU, IT (European patent), JP, KP, KR, LU (European patent), NL (European patent), NO, RO, SE (European patent), SU, US.

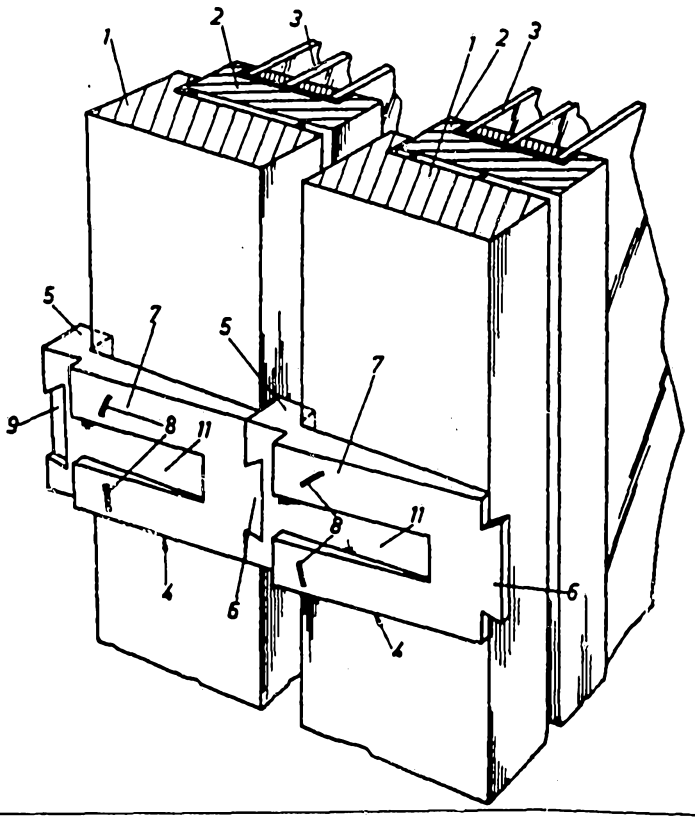
Published
With international search report.
In English translation (filed in Swedish).

71) Applicant: Ecand'or Sweden AB
Södra Vägen 53, S-412 54
Göteborg, Sweden.

(54) Title: A DEVICE FOR FIXATION OF THE SPATIAL INTERRELATIONSHIP OF UPENDED FRAMES

(57) Abstract

A device for fixation of the spatial interrelationship of upended and somewhat spaced apart frames (1) is used in e.g. complete windows, including the frame, casement (2) and window-panes (3). The device consists of a connection member (4) which is arranged to be attached to the outer edge face of the frame (1). The connection member (4) comprises a cross bar (5) serving as an insert between two juxtaposed frames (1), and an interconnecting part (6) of the member is arranged to be inserted into a recess (9) formed in an adjacent connection member (4) which is attached to a frame (1) adjacent the first-mentioned frame (1). The interconnecting part (6) and the recess (9) are designed to matingly engage to interlock the connection members (4) and consequently the frames (1).



BACKGROUND OF THE INVENTION

The subject invention concerns a device for fixation of the spatial interrelationship of upended and somewhat spaced apart frames, e.g. window frames including casement and window-panes.

After the manufacture of complete windows, that is including the frame, casement, window panes, hinges and fasteners, they are assembled in groups in the factory in an upended position and spaced somewhat apart, with battens positioned between the individual windows to prevent painted surfaces from scuffing or rubbing against each other and to accommodate projecting hinges and fastening mechanisms. Each group of windows thus disposed in an erected position is encircled by straps to form a package unit.

The package units thus formed are then transported in the conventional manner to a storage serving as an intermediate station, from which storage windows are delivered to the purchaser when ordered. Such purchasing orders may be for a specified number of windows of one design and another specified number of windows of a different design and/or size, with the result that different package units of windows of various designs and/or sizes must be opened in order to execute the order. The remaining windows of each package unit must then be re-assembled and re-strapped for protection of the windows as it would be too expensive to store each window in individual stands. Battens cut to size are therefore positioned as cross bars alongside two opposite outer sides of a group of windows and are secured to the window edge faces with the aid of fastener

or stapler guns. The windows which are to be delivered to the purchaser are grouped together and secured in the same manner. The procedure may have to be repeated upon execution of each new order, which means that the battens have to be broken away from the window edge faces, the required number of ordered windows be withdrawn from the group, and the battens be recut to match the smaller unit of remaining windows and again be stapled to the window edge faces.

The execution of an order consequently involves considerable work. In addition, the storesman exposes himself to certain risks of being injured by the pointed parts of the staples - inserted into the window edges by staplers - which often project from the window frames. Furthermore, the consumption of battens in times becomes considerable, since the battens must be cut to size repeatedly for adjustment to package units of new dimensions and for this reason each batten can only be used a couple of times.

SUMMARY OF THE INVENTION

According to the present invention there is provided an improved device for fixation of the spatial interrelationship of upended and spaced apart frames, e.g. window frames including casements and glazing, the improvement comprising a connection member, said connection member arranged to be attached to the outer face of a first frame, said connection member comprising a cross bar serving as an insert between two juxtaposed frames, viz said first frame and a second frame, a recess and an interconnecting part arranged to be inserted in the recess of an adjacent similar connection member attached to said second frame juxtaposed to said first frame, said interconnecting part and said recess designed to matingly engage to prevent separation of said two connecting members, thus interlocking said members and thus said first and second frames.

A preferred embodiment of the present invention will now be described by way of example only with reference to the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a perspective view of two connection members in accordance with the invention for interconnecting two juxtaposed frames,

Fig. 2 illustrates two connection members in a view from above, which members likewise are used to interconnect two juxtaposed frames, and

Fig. 3 illustrates, on a considerably reduced scale, a package unit consisting of a number of grouped-together frames which are interconnected as a unit with the aid of a number of connection members in accordance with the invention.

DETAILED DESCRIPTION OF A PREFERRED EMBODIMENT

To illustrate the use of the connection member in accordance with the invention has been chosen its application to form package units of grouped together, complete windows comprising a frame 1, a casement 2 and window-panes 3, as appears from Fig. 1. Obviously, the inventive object, the connection member, may be used also for other types of frames, such as door-frames or indeed any type of frames that for some reason need to be positioned upended, spaced a short distance apart.

The connection member 4 essentially consists of a cross bar 5, an interconnecting part 6 and an intermediate attachment part 7 by means of which the connection member is attached to the frame 1 for instance by

means of staples or cramps 8. The cross bar 5 is intended to serve as an insert between two juxtaposed frames 1 and thus replaces the spacing battens mentioned in the aforegoing. The interconnecting part 6 which has a dovetail configuration in the embodiment shown in the drawing figures, is arranged to nest in and engage with a recess 9 of matching configuration which is formed in an adjoining connection member 4. The dovetail configuration forms an interlocking joint by means of which the individual connecting members 4 in a row of such members are interconnected.

Fig. 3 illustrates a group 10 of window frames 1 disposed in an upended position and interconnected in the form of a package unit by means of a row 40 of individually interconnected connection members 4 in accordance with the invention. Each one of these members may, as illustrated in Fig. 1, be formed with a longitudinal groove 11. Together, these grooves 11 serve to guide a strap (not shown) which could be made to encircle the entire package unit for added security, particularly when the number of frames in the group is large. A thus integral group of frames is then transported as a unit on a pallet 12 from the manufacturer to a storage or - which is of course also possible - straight to the consumer.

When a number of windows is to be separated from the group 10 and to be delivered to the consumer the strap, if such is used around the group, is removed. As indicated in Fig. 2 by dash-and-dot lines, the portion of the connection member 4 positioned adjacent the interconnecting part 6 is transversely resilient and so positioned that a gap 13 is formed between

this transversely resilient connection member portion and the frame 1. By inserting a tool into this gap 13 between one of the connection members 4 in the row 40 and the associated frame 1 and resiliently push the connection member outwards, disengaging the interconnecting part 6 thereof from the recess 9 in the adjacent connection member, the latter connection member is released, allowing the frame associated therewith to be turned away somewhat. The same procedure is repeated at the opposite side of the group 10, and the desired number of windows is thus separated from the group.

The separated group consists of interconnected windows, and the entire group need only be transferred onto another pallet 12 and thereafter be conveyed to the purchaser. The remaining windows in the group are also interconnected and therefore may be deposited on a storage shelf as one integral unit.

As described in the aforegoing the handling of the windows in this manner is very easy and convenient. The battens mentioned initially and inserted between neighbouring windows as spacer means become superfluous. There is not either any need to use the cross bars to interconnect the windows and therefore no need for the batten nailing, breaking up and cutting operations that the use of cross bars for interconnecting purposes has hitherto involved. Consequently, individual windows need practically never be handled separately and grouped together to form new units. Instead, in all situations the windows are handled as integral groups. However, orders involving only one single window are easily executed, since it is just as easy to separate one single window as several windows from a group 10.

When a group of windows are received by the purchaser the latter separates the individual windows in the group in exactly the same manner as described above. One or a couple of connection members 4 remain attached to opposite edge faces of each window frame 1. As appears above all from Fig. 1 the connection member 4 is wedge-shaped, allowing it to be used as a securing block or cleat when the individual windows are to be inserted into the openings made in the building body for that purpose. The connection members thus replace the conventional wedge blocks used in building to align a window in its associated opening.

Owing to its design and arrangement the connection member 4 thus serves an important secondary function at the site of use and therefore need not be returned or discarded after having been used as a connection means.

The device in accordance with the invention is not limited to the embodiment as shown and described but could be modified in many ways within the scope of the appended claims. The connection member 4 could have a different appearance and a different configuration. This applies for instance to the interconnecting part 6 and the recess 9. Instead of the gap 13 the connection member 4 may be formed with a recess in the surface facing the frame 1 into which recess a tool may be inserted.

As indicated in dash-and-dot lines in Fig. 3 a group 10 of frames could be provided with several rows 40 of connection members 4, the number of rows depending on the height of the frames 1.

THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. An improved device for fixation of the spatial interrelationship of upended and spaced apart frames, e.g. window frames including casements and glazing, the improvement comprising a connection member, said connection member arranged to be attached to the outer face of a first frame, said connection member comprising a cross bar serving as an insert between two juxtaposed frames, viz said first frame and a second frame, a recess and an interconnecting part arranged to be inserted in the recess of an adjacent similar connection member attached to said second frame juxtaposed to said first frame, said interconnecting part and said recess designed to matingly engage to prevent separation of said two connecting members, thus interlocking said members and thus said first and second frames.

2. An improved device as claimed in claim 1, wherein at least the part of said connection member which is positioned adjacent the interconnecting part of said member is resiliently flexible outwards, away from said frame.

3. An improved device as claimed in any one of the preceding claims, wherein in the area immediately adjacent said interconnecting part said connection member defines a gap with said frame.

4. An improved device as claimed in claim 1, wherein said interconnecting part is in the shape of a dovetail and said recess formed in the adjacent connecting member having a mating configuration.

5. An improved device for fixation of the spatial interrelationship of upended and spaced apart frames, the improved device substantially as hereinbefore described with reference to the accompanying drawings.

Dated this 23rd day of April 1992

ECOND'OR SWEDEN AB

By their Patent Attorneys

GRIFFITH HACK & CO

Fig.1

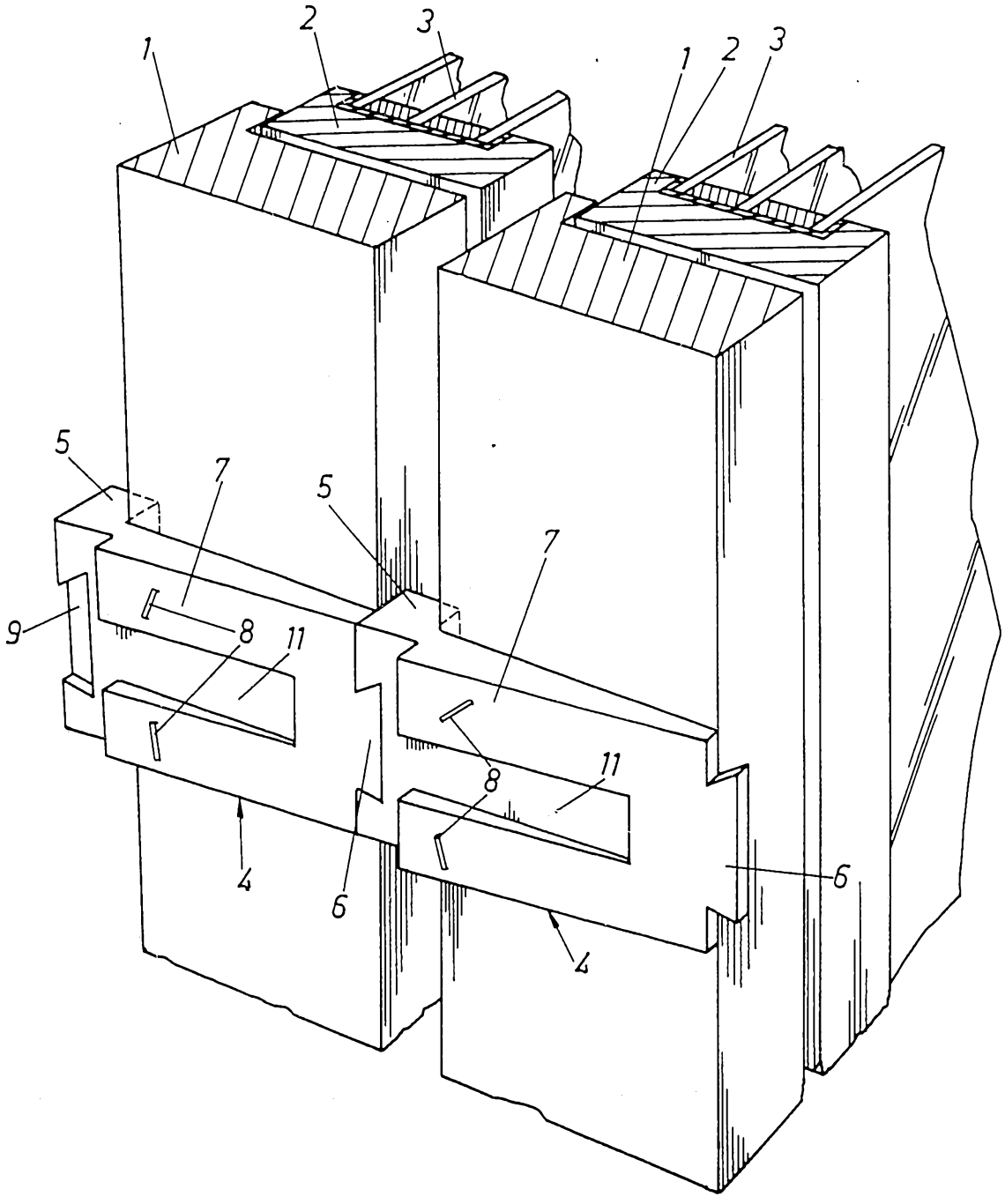
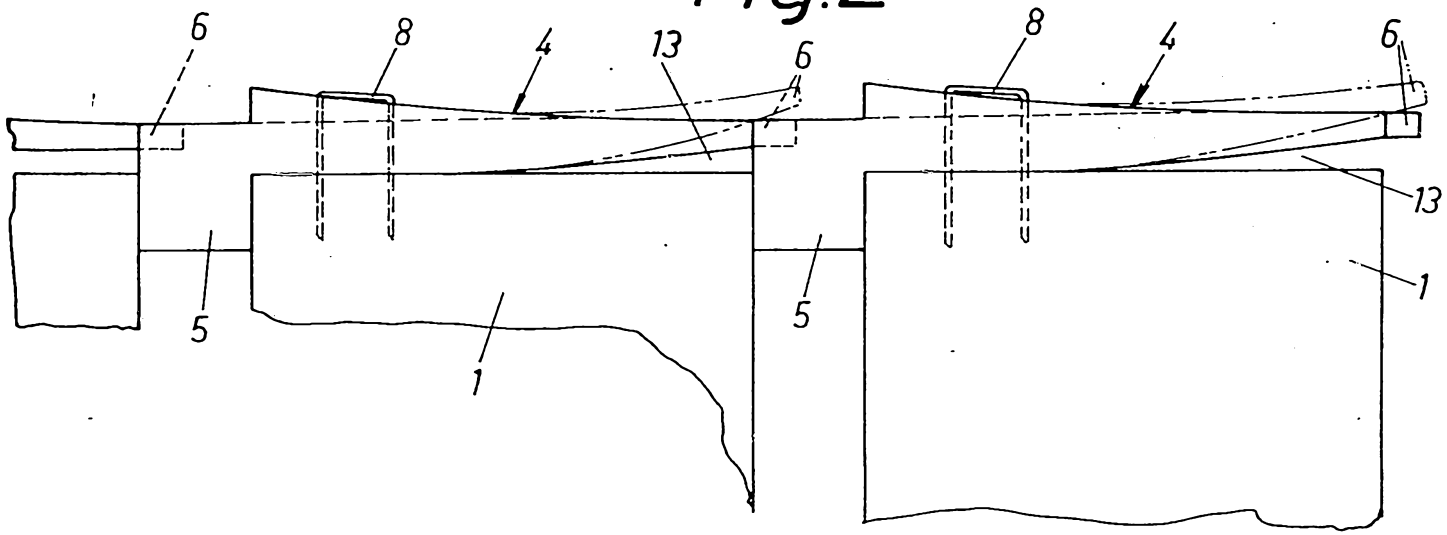


Fig.2



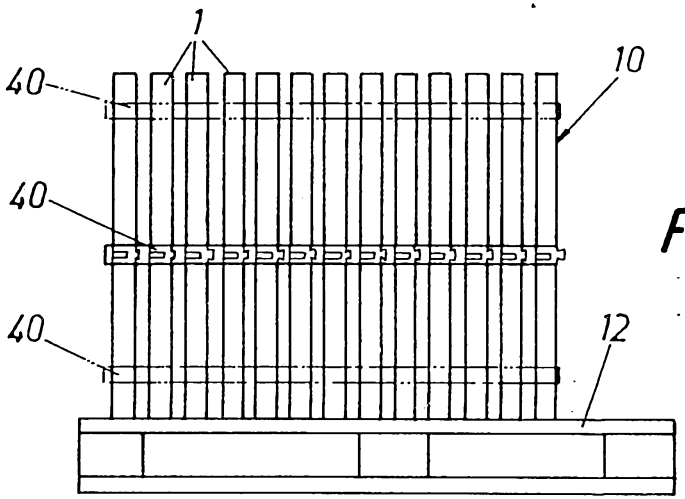


Fig.3

INTERNATIONAL SEARCH REPORT

International Application No PCT/SE88/00119

I. CLASSIFICATION OF SUBJECT MATTER (if several classification symbols apply, indicate all) [6]

According to International Patent Classification (IPC) or to both National Classification and IPC 4

B 65 D 85/48, B 65 G 1/14

II. FIELDS SEARCHED

Minimum Documentation Searched [7]

Classification System	Classification Symbols
IPC 4	B 65 D 57/00, 61/00, 81/02, 85/30,/48,/62; B 65 G 1/14
US Cl	206:321,325,449,451,454,521; 214:10.5

Documentation Searched other than Minimum Documentation to the Extent that such Documents are Included in the Fields Searched [8]

SE, NO, DK, FI classes as above

III. DOCUMENTS CONSIDERED TO BE RELEVANT [9]

Category [10]	Citation of Document, [11] with indication, where appropriate, of the relevant passages [12]	Relevant to Claim No. [13]
X	FR, A1, 2 548 632 (ULRYCH ADAM) 11 January 1985	1, 2
X	EP, A2, 0 130 922 (SAINT-GOBAIN VITRAGE) 9 January 1985 & FR, 2548633 DE, 3466772	1, 2

* Special categories of cited documents: [14]

"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

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

IV. CERTIFICATION

Date of the Actual Completion of the International Search	Date of Mailing of this International Search Report
1988-05-30	1988 -06- 06
International Searching Authority	**Signature of Authorized Officer**
Swedish Patent Office	Helena Åkerlund Helena Akerlund