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(54) **Title**: CARRYING HANDLE FOR A BUILDING COMPONENT

(57) **Abstract**: A detachable carrying-handle arrangement (3) for a building component (2), especially a window or a door including a frame (21), which is to be fixed in a supporting structure (111) surrounding an opening (11) in a building structure (1) is described, the carrying-handle arrangement (3) including a grip portion (31) connected to a plate-shaped attachment portion (32) which is provided with at least two cut-outs (321) which is arranged to lockingly engage with a fixing bolt (22).

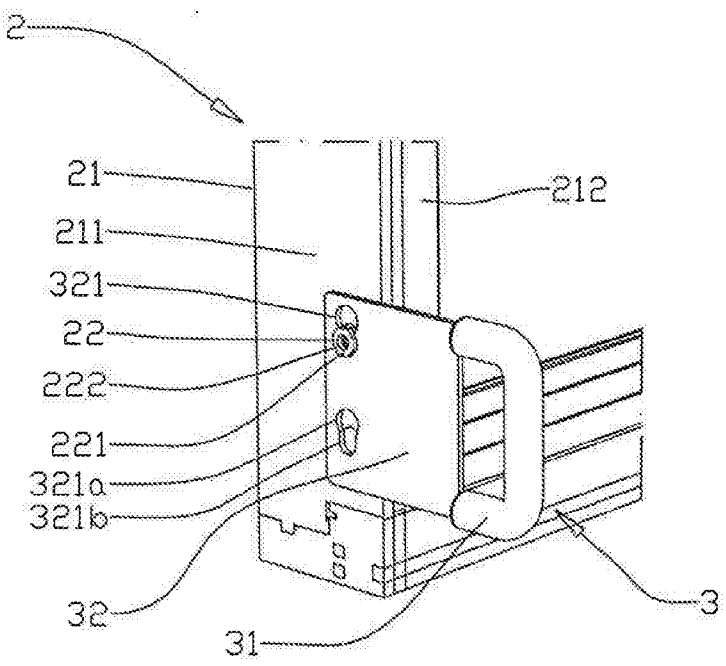

Fig. 2

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CARRYING HANDLE FOR A BUILDING COMPONENT

The invention relates to a detachable carrying-handle arrangement for a building component, especially a window or a door including a frame, which is to be fixed to a supporting structure surrounding an opening in a building structure.

Building components, like windows and doors, can be both voluminous and heavy, and especially in rehabilitation, in which the transport must, to a great degree, go through entrance portions, corridors, stairways and door openings in the building under rehabilitation, building components of this kind are difficult to handle, not least because of it being difficult to find good portions which are good for gripping.

The invention has for its object to remedy or reduce at least one of the drawbacks of the prior art or at least provide a useful alternative to the prior art.

The object is achieved through features which are specified in the description below and in the claims that follow.

The invention provides a carrying-handle arrangement arranged for temporary attachment to a building component, especially to an external side face of a door frame or window frame. From a bow-shaped grip portion, there extends an attachment portion, the grip portion and the attachment portion lying substantially in the same plane. The attachment portion is provided with at least one, preferably two bolt holes for receiving fixing bolts arranged to be fixed to the building component. The bolt holes have a keyhole shape, for example, to enable the carrying-handle arrangement to be slipped over the head of the fixing bolt when the head of the fixing bolt lies with a slight clearance to said side face. The fixing bolt is preferably an adjusting bolt arranged in a hole extending through the frame, the adjusting bolt being adjustable, when the building component is being fitted, into abutment against the surrounding building structure to which the building component is to be fixed. The adjustment is typically done with the use of a tool, which engages with a recess in an end portion of

the adjusting bolt opposite the head of the bolt. When keyhole bolt holes or the like are used in the attachment portion, the carrying-handle arrangements may remain attached to the building component until it is positioned in the building structure, for example a window being positioned in the wall opening. Then the adjusting bolts holding the carrying-handle arrangements are unscrewed a little so that the carrying-handle arrangements can be slipped off the adjusting bolts and reused. Alternatively, the periphery of the bolt head may be arranged for engagement with a tool, for example a hexagonal head, which is gripped by an open-end spanner.

The attachment portion of the carrying-handle arrangement is preferably formed from a flexible plate material. Thereby, when required, the grip portion may be forced inwards towards the centre of the building component, which is an advantage where a double set of carrying-handle arrangements is used to arrange grip portions on either side of the frame. Thereby the grip portions, which are lying on the outside of the window during the installation of a window will not be an obstruction when the window is being placed in the wall opening.

The carrying-handle arrangement is preferably mirror-symmetrical around a centre plane through the attachment portion, for the carrying-handle arrangement, when the bolt holes have a keyhole shape or its equivalent, to be usable in all relevant positions on the building component.

The invention relates more specifically to a detachable carrying-handle arrangement for a building component, especially a window or a door including a frame, which is to be fixed to a supporting structure surrounding an opening in a building structure, characterized by the carrying-handle arrangement including a grip portion connected to a plate-shaped attachment portion, which is provided with at least one cut-out which is arranged to lockingly engage with a fixing bolt.

The cut-out may include a first, in the position of application upper cut-out portion and a second, in the position of application lower cut-out portion, the second cut-out portion having a smaller transverse dimension than the first cut-out portion.

The carrying-handle arrangement may be mirror-symmetrical around a central plane through the cross section of the attachment portion. An advantage of this is that the same embodiment of the carrying-handle arrangement can be used in all relevant positions on the building component.

The fixing bolt may be a frame-adjustment bolt, which extends from the external side face of the frame into a through-going bolt hole, the frame-adjustment bolt being pro-

vided with an end recess arranged for engagement with an adjusting tool extending, in an active position, in through the free mouth of the bolt hole. An advantage of this is that the carrying-handle arrangement may be released after the building component has been placed in the opening, even if there is little clearance between the frame and the supporting structure.

The attachment portion may be elastically yielding. An advantage of this is that a grip portion projecting outwards from an external edge face of the building component can yield inwards towards the centre of the building component when the building component is to be inserted into an opening with little clearance between the frame and the supporting structure.

A second grip portion may be arranged on the attachment portion opposite the grip portion. An advantage of this is that the heads of the fixing bolts project minimally from the frame when the building component is so heavy that it will have to be carried by persons positioned on both sides of the building component.

In what follows, an example of a preferred embodiment is described, which is visualized in the accompanying drawings in which:

Figure 1 shows a side view of a building component in the form of a window partially inserted into a building structure and provided with carrying-handle arrangements according to the invention, projecting inwards from a lower side-face portion of the window frame;

Figure 2 shows, in perspective and on a larger scale, a first carrying-handle arrangement attached to a lower side-face portion of the window frame, a frame-adjustment bolt having been removed for the sake of exposition;

Figure 3 shows a second, opposite carrying-handle arrangement;

Figure 4 shows two carrying-handle arrangements projecting in opposite directions, arranged on the same fixing bolts;

Figure 5 shows a carrying-handle arrangement provided with two grip portions; and

Figure 6 shows two carrying-handle arrangements projecting in opposite directions arranged on the same fixing bolts, in which the grip portions are bent in over the edge face of the window frame, a frame-adjustment bolt having been removed for the sake of exposition.

Reference is first made to figure 1 in which the reference numeral 1 indicates a building structure provided with an opening 11 arranged to receive a building component 2, shown as a window here, and encircled by a supporting structure 111 arranged to receive the fixing means of the building component 2, several frame-adjustment bolts 22 among other things. The frame-adjustment bolts 22 are provided with bolt heads 221 and are screwed into bolt holes 214 extending through the frame 21 of the building component 2 from the external side face 211 of the frame 21, the frame-adjustment bolts 22 being provided, in end portions remote from the bolt heads, with recesses, not shown, arranged for engagement with an adjusting tool 4 inserted through bolt-hole mouths 214' in the internal side face 211' of the frame 21.

A carrying-handle arrangement 3 is attached to a lower portion of each external frame side face 211 by means of a selction of frame-adjustment bolts 22. Alternatively, the carrying-handle arrangement 3 may be attached by means of ordinary fixing bolts (not shown) which do not have any other function than holding the carrying-handle arrangement 3.

Reference is now made especially to figures 2 and 3. The carrying-handle arrangement 3 includes a grip portion 31 formed as a bow-shaped handle projecting from a side edge of a plate-shaped attachment portion 32. The attachment portion 32 is provided with two cut-outs 321 arranged to receive the heads 221 of frame-adjustment bolts 22 for locking engagement. A first cut-out portion 321a is wider than a second cut-out portion 321b, the first cut-out portion 321a being arranged, in a position of application, above the second cut-out portion 321b, for example in the shape of a keyhole as shown in figure 2, in order thereby to provide space for the bolt head 221 to be passed through in the first cut-out portion 321a and prevent the bolt head 221 from passing when the frame-adjustment bolt 22 extends through the second cut-out portion 321b. It is obvious that other cut-out shapes lie within the scope of the invention as well. The distance between the cut-outs 321 is adapted to the distance between two adjacent frame-adjustment bolts 22. In figure 2, a lower frame-adjustment bolt has been removed for the sake of exposition.

When the carrying-handle arrangement 3 is being fitted to the external side face 211 of the frame 21, the carrying-handle arrangement 3 is oriented in such a way that the narrow portion of the cut-out 321 is facing downwards. The attachment portion 32 is brought in over the corresponding bolt heads 221, which, at this stage, are lying with a clearance to the external side face 211. The frame-adjustment bolts or the fixing bolts 22 are tightened to prevent the carrying-handle arrangement 3 from being dis-

placed in the cut-outs 321. The operation is repeated to fix further carrying-handle arrangements 3 to other portions of the frame 21. The building component 2 has now been prepared to be moved, the carrying-handle arrangements 3 providing handles well suited for lifting the building component 2.

When the building component 2 has been positioned in the opening 11 of the building structure 1 and secured, the carrying-handle arrangement 3 can easily be removed by the fixing bolts 22 being loosened and the attachment portion 32 being pulled out of engagement behind the bolt heads 221. At this stage, the adjusting feature of the frame-adjustment bolt 22 particularly comes into its own, as it can be loosened by the engagement of the adjusting tool 4 with the recess, not shown, of the frame-adjustment bolt 22 via the bolt-hole mouth 214' completely independently of the clearance between the frame 21 and the adjacent supporting structure 111.

When required, two carrying-handle arrangements 3 may be attached to the same set of fixing bolts 22, see figure 4. Owing to the flexibility of the attachment portion 32, a grip portion 31' projecting outwards may be pressed towards the centre of the building component during the insertion of the building component 2 into its opening 11, in order not to prevent the fitting of the building component 2.

Alternatively, the carrying-handle arrangement 3 may be provided with two grip portions 31, 31' projecting in opposite directions, see figure 5, one at each opposite side edge of an attachment portion 32, which, in this embodiment, has been extended in relation to an attachment portion 32 provided with one grip portion 31 according to figures 1-4.

A further alternative is shown in figure 6, in which two carrying-handle arrangements 3 are attached to the same set of fixing bolts 22, corresponding to what is shown in figure 4. Here, the grip portion 31 is bent to an angle relative to the attachment portion 32, and the cut-outs 321 are formed with the first cut-out portion 321a centred between two other cut-out portions 321b extending out in opposite directions from the first cut-out portion 321a. This embodiment is particularly well suited when the building component 2 is to be inserted into a very thick building structure 1, for example a double brick wall, where a carrying-handle arrangement 3 facing outwards with a grip portion 31 according to figures 1-5 could be resting against the side face of the opening 11 of the building structure 1 and thereby be difficult to use after the building component 2 has been inserted into the opening 11 of the building structure 1. The "double-keyhole" cut-outs 321 of the attachment portion 32 allow the carrying-handle unit 3 to be used in all relevant positions on the building component 2.

Claims

1. A detachable carrying-handle arrangement (3) for a building component (2), especially a window or a door including a frame (21), which is to be fixed to a supporting structure (111) surrounding an opening (11) in a building structure (1), characterized in that the carrying-handle arrangement (3) includes a grip portion (31) connected to a plate-shaped attachment portion (32) which is provided with at least two cut-outs (321), which are each arranged to lockingly engage with a fixing bolt (22).

2. The detachable carrying-handle arrangement (3) according to claim 1, wherein the cut-out (321) includes a first, in the position of application upper cut-out portion (321a) and a second, in the position of application lower cut-out portion (321b), the second cut-out portion (321b) having a smaller transverse dimension than the first cut-out portion (321a).

3. The detachable carrying-handle arrangement (3) according to claim 1, wherein the carrying-handle arrangement (3) is mirror-symmetrical around a central plane through the cross section of the attachment portion (32).

4. The detachable carrying-handle arrangement (3) according to claim 1, wherein the fixing bolt (22) is a frame-adjustment bolt extending from the external side face (211) of the frame (21) into a through-going bolt hole (214), and the frame-adjustment bolt (22) is provided with an end recess arranged for engagement with an adjusting tool (4) extending, in an active position, in through the free mouth (214') of the bolt hole (214).

5. The detachable carrying-handle arrangement (3) according to claim 1, wherein the attachment portion (32) is elastically yielding.

6. The detachable carrying-handle arrangement (3) according to claim 1, wherein a second grip portion (31') is arranged on the attachment portion (32) opposite the grip portion (31).

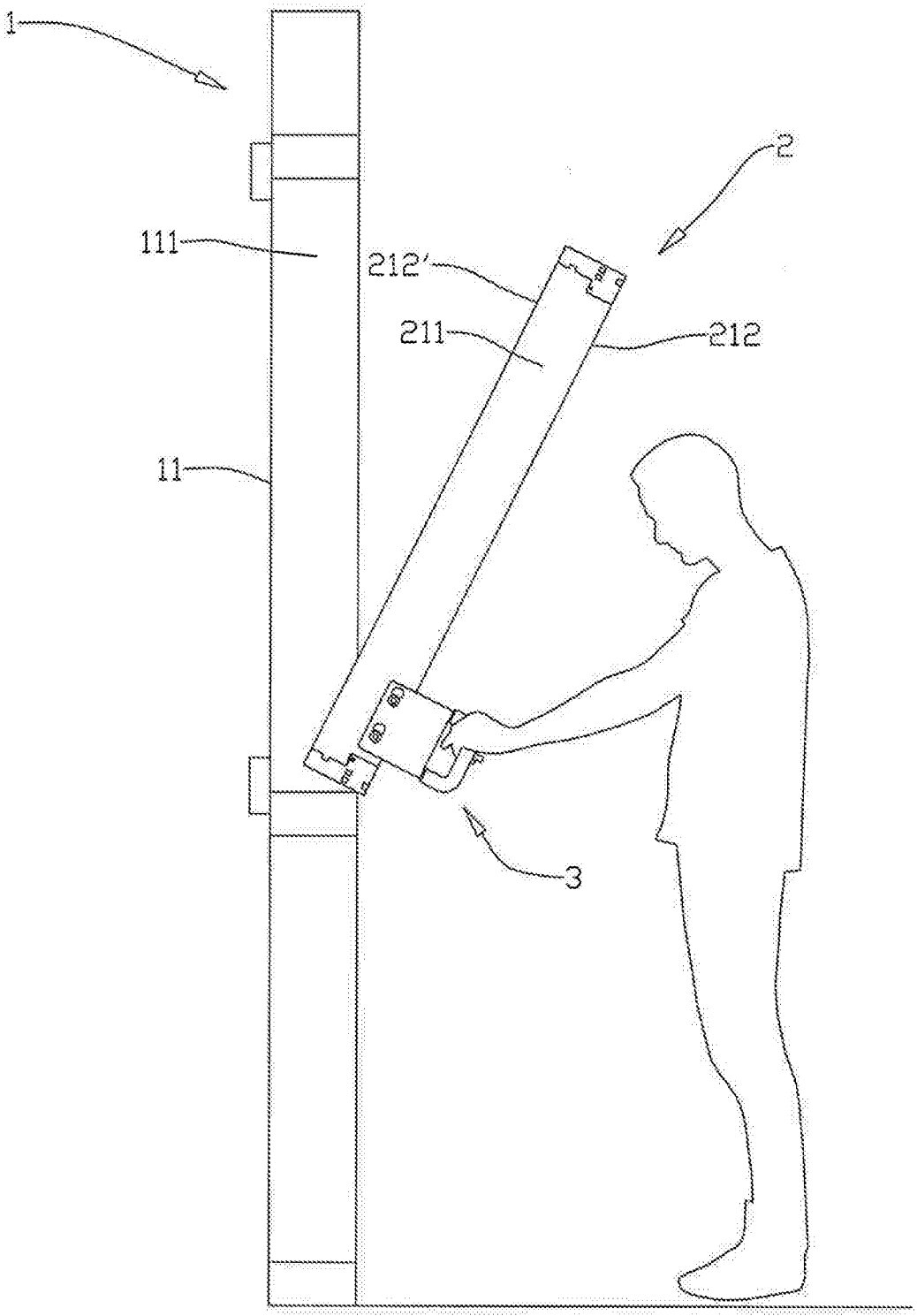

Fig. 1

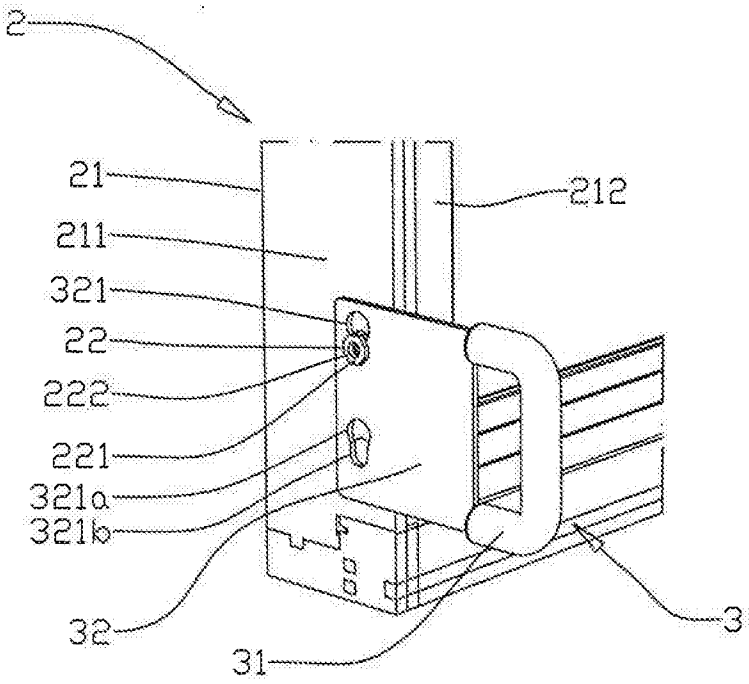

Fig. 2

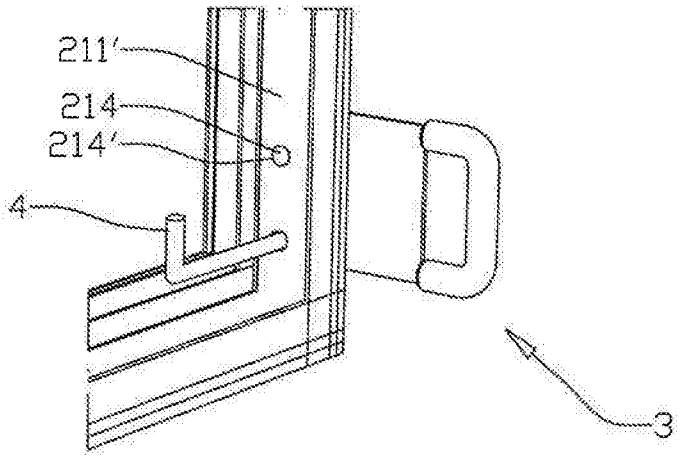

Fig. 3

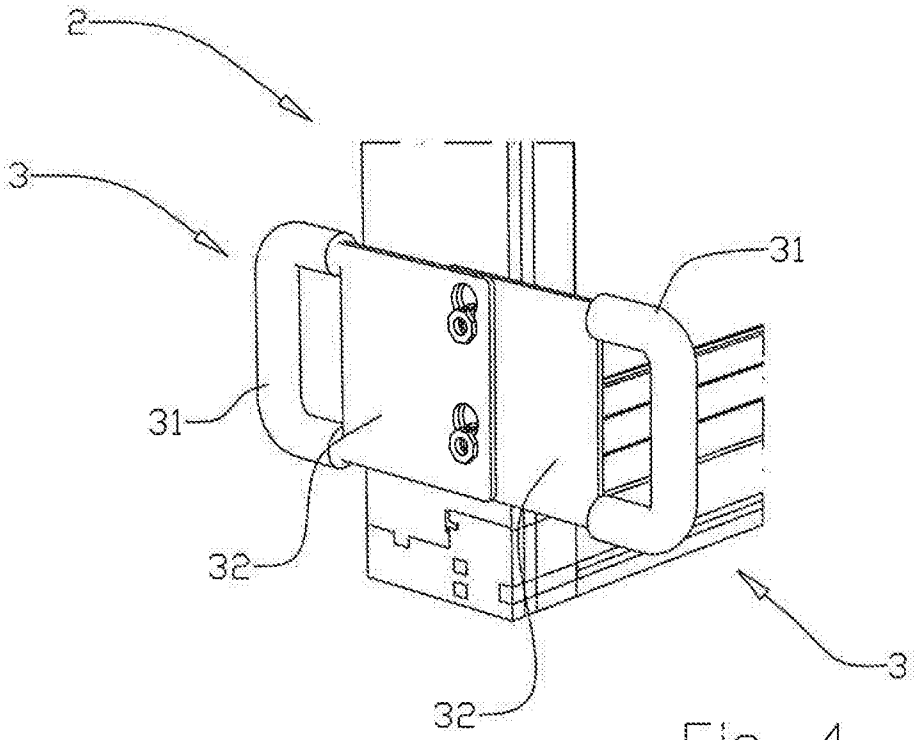

Fig. 4

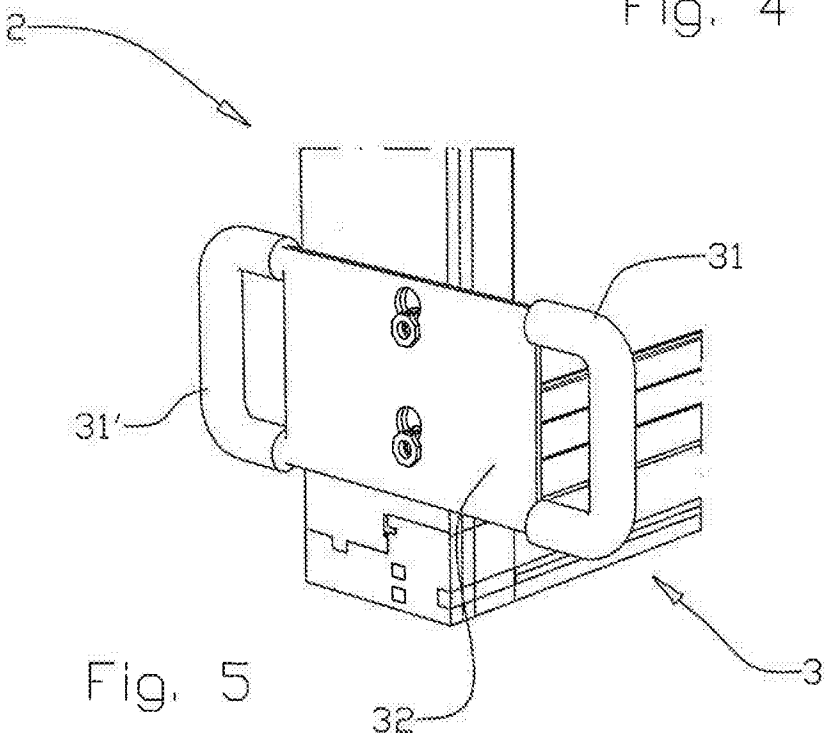

Fig. 5

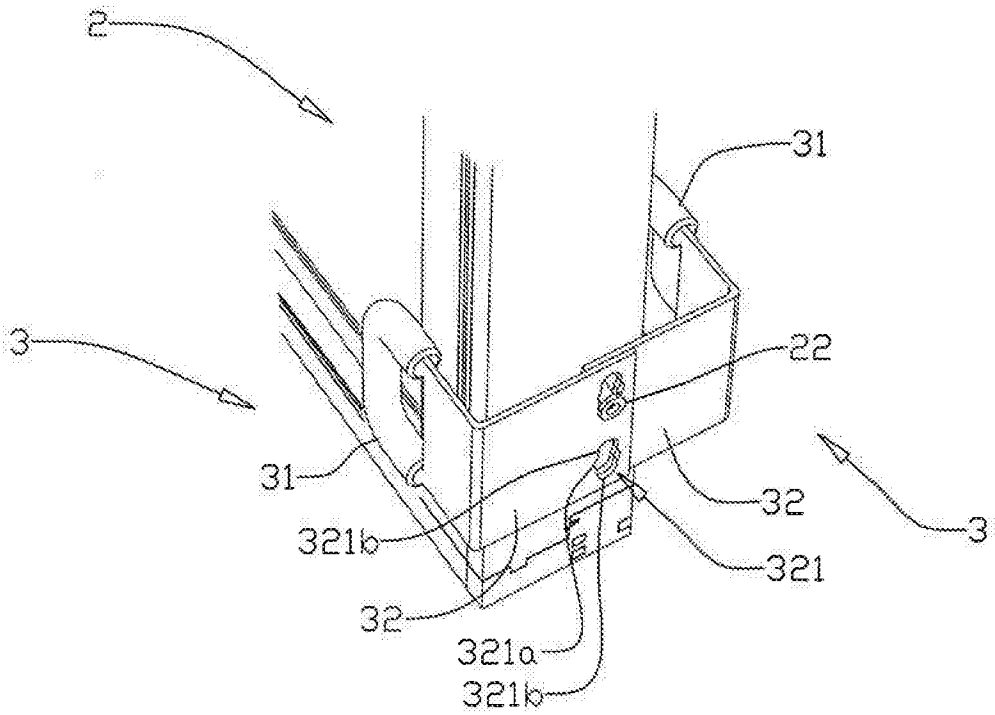

Fig. 6

INTERNATIONAL SEARCH REPORT

International application No.
PCT/NO2015/050002

A. CLASSIFICATION OF SUBJECT MATTER

IPC: see extra sheet

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)

IPC: B65G, E04F, E05D, F16B

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

SE, DK, FI, NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPO-Internal, PAJ, 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	EP 0398054 A1 (ITW ATECO GMBH), 22 November 1990 (1990-11-22); column 1, line 11 - column 1, line 15; column 4, line 7 - column 4, line 42; figure 1 --	1-3, 5-6
X	DE 9419168 U1 (HELMUT MEETH FENSTER UND TUERE), 23 March 1995 (1995-03-23); page 1, line 18 - page 1, line 30; figures 1-2 --	1-3, 5-6
X	DE 202009006816 U1 (LIEBHERR HAUSGERAETE LIENZ), 30 September 2010 (2010-09-30); paragraphs [0036], [0041]; figure 3 --	1-3, 5-6

☒ 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

"E" earlier application or patent but published on or after the international filing date

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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

"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

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

International application No.
PCT/NO2015/050002

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	DE 29717201 U1 (FABRICIUS FASTENER GMBH), 18 December 1997 (1997-12-18); page 3; figure 1 -- --------	1-3, 5-6

International application No.
PCT/NO2015/050002

Continuation of: second sheet

International Patent Classification (IPC)

B65G 7/12 (2006.01)

EP	0398054	A1	22/11/1990	CA	2016871	A1	19/11/1990
				DE	8906204	U1	10/08/1989
				US	5184862	A	09/02/1993
DE	9419168	U1	23/03/1995	NONE			
DE	202009006816	U1	30/09/2010	NONE			
DE	29717201	U1	18/12/1997	NONE			