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(72) Inventor; and

(71) Applicant : FLOREK, Ryszard [PL/PL]; Losie 11, 33-336 Labowa (PL).

(74) Agent: LIESEGANG, Eva; BOEHMERT & BOEHMERT ANWALTSPARTNERSCHAFT MBB, Pettenkoferstraße 20 - 22, 80336 München (DE).

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(54) Title: MOUNTING AID FOR A SHUTTER BOX

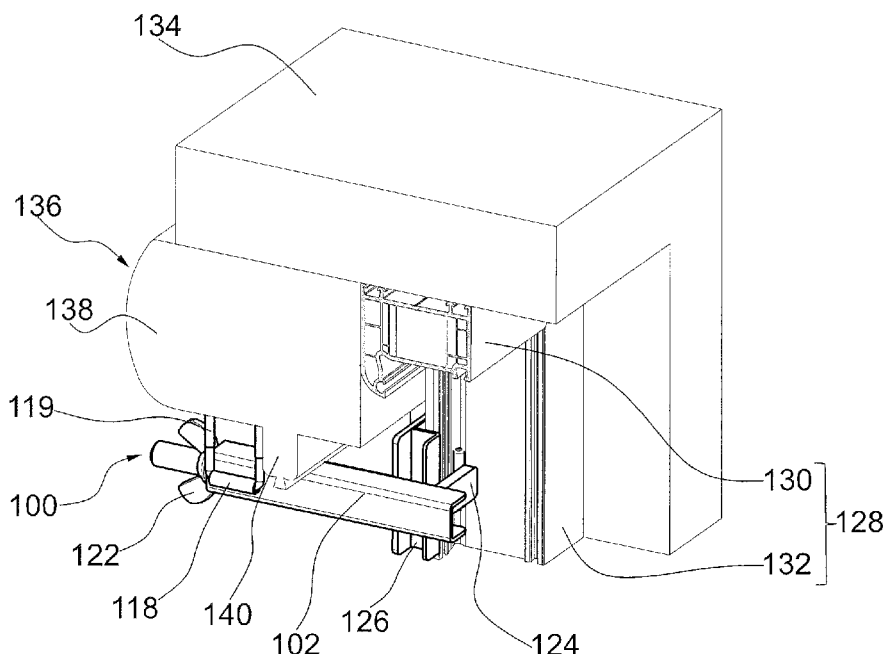


FIG.3

(57) Abstract: This solution relates to a mounting method relating to an external window-mounted roller shutter and an installation kit, wherein the mounting method, according to the solution, involves mounting brackets comprising a clamping portion, a support portion and a locking arm to be able to support the cassette of the roller shutter at the window frame during its installation, possibly close to the top lining of the window opening.

MOUNTING AID FOR A SHUTTER BOX

[0001] The invention relates to a method for mounting a roller shutter, in particular an external window-mounted roller shutter, to a mounting bracket and an installation kit for mounting a roller shutter.

[0002] The mounting method and the installation kit employ mounting brackets for fixing the roller shutter. In particular, the method and installation kit allow for mounting the roller shutter from inside a room, especially when the window which the roller shutter is to be mounted on is difficult to reach from the outside.

[0003] According to a conventional method for mounting an external roller shutter, two side rails are connected to the opposite side ends of a shutter cassette using pins before the roller shutter is installed in a window. Then the cassette and side rails altogether are mounted on the window from the outside and immovably fixed by fastening the side rails to the frame of the window using screws. This method requires at least two persons to perform the installation.

[0004] A method for mounting a roller shutter is described in DE19516419 A1. The solution features fastening elements fixed to the top member of a window frame before the roller shutter is installed in a window. The fastening elements are used to support the roller shutter cassette. The fastening elements are required to be fixed to the window frame so as to keep the cassette horizontally to ensure proper guidance of the blind material within side rails attached to the cassette. This method requires a mounting clearance in order to support the cassette within the window opening using the fastening elements. As a result, a gap above the roller cassette is necessary, increasing the space requirement for the roller shutter.

[0005] US6039295 A describes a method for mounting a roller shutter cassette using a special mounting rail fixed to the window lintel or sill and fastening elements. The fastening elements are fixed to the window lintel or sill in front of the window arrangement using ordinary fixing

means. This solution requires an appropriate arrangement of mounting rails relative to the sloped window lintel or sill in order to arrange the roller shutter cassette horizontally.

[0006] A mounting method for a roller shutter, in particular an external roller shutter, is known from PL388823, in which roller shutter side rails into which the cassette is inserted from below are first mounted on the window. The cassette is then moved along the rails upwards to be momentarily fixed in an immovable manner using top fastening elements of top caps of the cassette, and, next, the cassette is fixed permanently using a pressing block located in the rails.

[0007] The present invention relates to mounting a roller shutter on a window frame using temporary brackets fixed to the window frame, in particular for the installation from inside a room. The window frame comprises two side members, which are, for example, parallel to each other, a top member and a bottom member. The external roller shutter comprises a cassette with a roller used to wind up a blind material and two guide elements, preferably two side rails.

[0008] According to the present invention, mounting the roller shutter involves fixing temporary brackets for supporting the roller shutter cassette to the side members of the window frame. The temporary brackets are fixed at a predetermined height.

[0009] In an embodiment, the predetermined height corresponds to a cassette height so as to position the cassette as close as possible to the lintel of the window during the installation. Accessing the cassette is thereby facilitated.

[0010] In an embodiment, the temporary brackets are each equipped with a pivotable locking arm. The pivotable locking arms are hinged onto the respective temporary bracket and are pivotable around a respective axis. The pivotable locking arms can be pivoted into an upright position directing towards the lintel of the window. Accordingly, the pivotable locking arms support the cassette of the roller shutter and secure it from falling out.

[0011] In an embodiment, each of the temporary brackets comprises a support portion for supporting bodies of the roller shutter, e.g. the cassette thereof. For example, the support portion has the shape of an elongated bar with a rectangular cross-section. When the temporary brackets are

fixed to the side members of the window frame, the respective support portion is arranged perpendicular to the pane of the window. The roller shutter can be supported on an upper surface of the support portions of the temporary brackets. Alternatively or additionally, the roller shutter can be supported on the pivotable locking arm when the locking arm is in the upright position.

[0012] For example, the cassette can have a protruding portion which protrudes vertically downwards from a bottom surface of the cassette. The protruding portion can be configured for standing on top of the support portions of the temporary brackets, thereby supporting the cassette on the temporary brackets. In addition, the bottom surface of the cassette can rest upon the pivotable locking arms that are pivoted into the upright position.

[0013] In an embodiment, the pivotable locking arm is hinged at a lateral surface of the support portion of the respective temporary bracket. For example, the pivotable locking arm can be hinged about halfway between the top surface of the bottom surface of the support portion. Accordingly, the pivoting movement of the pivotable locking arm, either upwards or downwards, is terminated at the lateral surface. Accordingly, the pivotable locking arm abuts against the lateral surface when it is arranged in the upright position. Optionally, the pivotable locking arms are provided with a respective latch which defines one or more locking positions for the pivotable locking arm.

[0014] In a further embodiment, the pivotable locking arm is hinged at a bottom edge between the lateral surface and the bottom surface of the support portion. Accordingly, the pivoting movement of the pivotable locking arm terminates when the pivotable locking arm abuts against the lateral surface. This position corresponds to the upright position, in which the pivotable locking arm is directed upwards and is suited for supporting the cassette.

[0015] In an embodiment, the pivotable locking arm is provided as one of two leaves of a hinge. The other one of the two leaves is attached to the bottom surface of the support portion of the respective temporary bracket. Accordingly, the pivotable locking arm is pivotable with respect to the bottom surface. The pivotable movement of the pivotable locking arm terminates when the pivotable locking arm abuts against the lateral surface. This position corresponds to the upright

position, in which the pivotable locking arm is directed upwards and is suited for supporting the cassette.

[0016] Whenever reference is made to a relative position, such as upper and lower or bottom surface, inner and outer surface, upwards and downwards or upright position or the like, this orientation refers to the temporary bracket as mounted on a window frame for supporting the cassette.

[0017] In an embodiment, the cassette and the side rails of the roller shutter can be mechanically joined to one another. For example, a pin is provided on both face sides of the cassette, on which the side rails can be mounted. The cassette can be fixed to the window frame by being supported on the side rails. In an example, the side rails are first fixed to the window frame and support the cassette. During the installation, the cassette can be mounted on the window first and hold in that position using the temporary brackets while the side rails are fixed to the window frame, e.g. using screws. In another example, the side rails are first fixed to the window frame in an immovable manner and the side rails and the cassette are joined to one another. After installing the window side rails, the temporary brackets are removed and standard steps are performed to complete the installation of the roller shutter.

[0018] An installation kit for installing a roller shutter having a cassette with a roller to wrap a blind material comprises at least two temporary brackets to support the cassette at the top member of the window frame during the installation.

[0019] The temporary bracket consists of a clamping portion, a support portion and a pivotable locking arm. The clamping portion is used to fasten the brackets to the side members of the window frame during the installation. The support portion supports the cassette of the roller shutter. The pivotable locking arm prevents the cassette of the roller shutter from falling out during the installation.

[0020] The present invention further relates to a method for mounting a roller shutter using temporary brackets, in particular during the installation from inside a room.

[0021] The advantages of the proposed kit and method include using temporary brackets include that the external roller shutter can be installed from inside a room without requiring access to the window from the outside, e.g. using a man lift. The temporary brackets hold the roller shutter cassette at the window frame during the installation, thereby facilitating the installation. Further, the cassette can be engaged with side rails of the roller shutter before the side rails are immovably attached to the side members of the window frame. The temporary brackets are applicable to any window and any roller shutter having a suitable cassette suitable.

[0022] Examples of the invention are described with reference to the drawings in which:

Fig. 1 shows a perspective view of an example of a temporary bracket;

Fig. 2 shows another perspective view of the temporary bracket of Fig. 1;

Fig. 3 shows a further perspective view of the temporary bracket of Fig. 1 being attached to a window frame;

Fig. 4 shows a cross sectional view of the temporary bracket of Fig. 3;

Fig. 5 shows a front view of an example of two temporary brackets being attached to a window frame;

Fig. 6 shows a partial view of one of the temporary brackets of Fig. 5;

Fig. 7 shows a perspective view of another example of a temporary bracket; and

Fig. 8 shows another perspective view of the temporary bracket of Fig. 7.

[0023] Fig. 1 and 2 show a temporary bracket 100 comprising a support portion 102. The support portion 102 has the shape of an elongated bar with an inner lateral surface 104, an outer lateral surface 106, a top surface 108, a bottom surface 110, a front end 112 and a rear end 114. A clamping portion 116 is laterally attached to the support portion 102 in a position close to the rear end 114. A hinge 118 is laterally attached to the support portion 102 in a position close to the front end 112.

[0024] The support portion 102 encases a threaded pin 120 arranged parallel to the lateral surfaces 104, 106. The threaded pin 120 protrudes from the front end 112 of the support portion 102. A wing nut 122 is set on the threaded pin 120 from the front end side. The wing nut 122 is configured to move along the threaded pin 120 when being rotated.

[0025] The hinge 118 has the shape of a hollow cylinder penetrated by a rectangular-ring-shaped locking arm 119. The locking arm 119 is therefore pivotably supported at the hinge 118. As shown in Fig. 1, the hinge 118 is positioned on the lateral surface 104 about halfway between the top and bottom surfaces 108, 110. Hence, the locking arm 119 can be pivoted between two positions in which the locking arm 119 abuts against the lateral surface 104 above and below the hinge 118. In either position, the locking arm 119 is stabilized by the lateral surface 104 of the support portion. The bracket of Fig. 1 and 2 hence can be used in either orientation of the locking arm 119, on both sides of the window frame, as illustrated and described with reference to Fig. 5. The temporary bracket of Fig. 1 and 2 also is designated a universal bracket.

[0026] As shown in Fig. 2, the clamping portion 116 comprises a first jaw 124 and a second jaw 126. The first jaw 124 is mechanically coupled to the threaded pin 120. For example, the first jaw 124 is formed integrally with a rear portion of the threaded pin 120. The second jaw 126 mechanically coupled to the outer lateral surface 106.

[0027] When the wing nut 122 is moved towards the rear end 114, i.e. in a rear direction, the wing nut 122 abuts against the front end face 112 of the support portion 102. As a result, at least one of the support portion 102 is pushed in the rear direction and the threaded pin 120 is pulled in a front direction that is opposite to the rear direction.

[0028] During installation, the first and second jaws 124, 126 are spaced from one another so as to receive a part of a window frame in between. After the temporary bracket 100 is positioned at a predetermined height, the first and second jaws 124, 126 are moved towards each other using the wing nut 122. The clamping portion 116 is thereby fastened on the window frame.

[0029] A roller shutter 136 to be mounted on the window comprises a cassette 138, a blind material and two side rails (not shown). The cassette 138 houses a roller which the blind material can be wrapped around (now shown). An installation kit for mounting a roller shutter includes one or more temporary brackets 100.

[0030] Fig. 3 and 4 show the temporary bracket 100 being fixed to a window frame 128. The window frame 128 comprises a horizontal top member 130, two side members 132 and a hori-

zontal bottom member (not shown). The window frame 128 is installed inside a window with the top member 130 resting against a lintel 134 of the window. The temporary bracket 100 is fastened on the side member 132 of the window frame 128 as described above.

[0031] The roller shutter 136 further comprises a supporting leg 140 that is a portion protruding from the bottom face of the cassette 138. The supporting leg 140 extends vertically downwards from the cassette 138. The supporting leg 140 is, for example, configured to guide the blind material during winding and unwinding. Alternatively or additionally, the supporting leg 140 is configured to stabilize the cassette 138. During the installation of the roller shutter 136 in the window, the supporting leg 140 can rest on top of the temporary bracket 100. In particular, the supporting leg 140 abuts against the top surface 108 of the support portion 102. The temporary bracket 100 is fastened to the side member 132 in a position so that the cassette 138 abuts against the lintel 134 of the window with its top surface and against the top member 130 of the window frame 128 with its rear surface.

[0032] When the supporting leg 140 is supported on the support portion 102, the locking arm 119 is pivoted upwards until locking arm 119 abuts against the lateral surface 104 of the support portion 102 and the cassette 138 is clamped between locking arm 119 and the lintel 134. As a result, the temporary bracket 100 prevents the cassette 138 or the roller shutter 136 from falling off. When provided as a kit, the supporting leg 140 and the locking arm 119 can be arranged so that the roller shutter 136 rests on both the top surface of the supporting portion 102 and on the locking arm 119, in its upwards orientation.

[0033] Although Fig. 3 and 4 only show the temporary bracket 100 for supporting the left side of the roller shutter 136, the above description applies also to a second temporary bracket for supporting the right side of the roller shutter 136 in a similar way. The second temporary bracket can be identical, wherein it is rotated by 180°, with the locking arm also pivoted by 180°, for supporting the opposite side of the roller shutter 136.

[0034] Fig. 5 and 6 show the roller shutter 136 being fixed to a window 142. The roller shutter 136 rests on the temporary bracket 100 as described above. The cassette 138 of the roller shutter 136 is positioned as close as possible to the lintel 134. The left side (as shown in Fig. 5) of the

roller shutter 136 is supported on the temporary bracket 100. The right side of the roller shutter 136 is supported on an additional identical temporary bracket 101. In particular, the temporary bracket 100 has the pivotable locking arm 119 hinged at about half way between the top surface and the bottom surface of the support portion such that the temporary bracket 100 can also be used to support both sides of the roller shutter 136 when pivoting the locking arm 119 in the two opposite directions; see fig. 6 and 7. This is why the bracket also is called a universal bracket.

[0035] The roller shutter 136 further comprises a left side rail 144 and a right side rail 146. The side rails 144, 146 are arranged along the side members 132, 133 of the window frame 128. The side rails 144, 146 are configured to guide the blind material when being lowered. As shown in Fig. 5 and 6, the left side rail 144 is aligned with the left end face 148 of the cassette 138.

[0036] For example, the roller shutter cassette 138 is provided with pins to which the side rails 144, 146 are joined while the cassette 138 is supported on the temporary brackets 100, 101. The cassette 138 is fixed in an immovable manner by fixing the side rails 144, 146 to the window frame 128 using screws (not shown). The temporary brackets 100, 101 can then be removed.

[0037] According to a second example, the external roller shutter 136 is mounted on the window in a similar way, however using two different temporary brackets, namely a left bracket 202 and a right bracket 204.

[0038] Fig. 7 and 8 show the left bracket 202 and the right bracket 204, respectively. It is noted that the terms left and right refers to the orientation from the outside of a window on which the roller shutter 136 is to be mounted. Further, the terms left and right are used for distinguishing between the opposite sides of a window.

[0039] The left and right brackets 202, 204 each comprise a support portion 102, a clamping portion 116, a hinge 118, a locking arm 119, a threaded pin 120 and a wing nut 122. The functionality and structure of the elements of the left and right brackets 202, 204 correspond to those of the temporary bracket 100 as described above. The left and right brackets 202, 204 differ from the temporary bracket 100 in that the respective hinge 118 is located at the edge between the inner lateral surface 104 and the bottom surface 110 of the support portion 100 to. Accordingly, the

locking arm 119 can be pivoted until abutting against the inner lateral surface 104. The relative orientation of the clamping portion 116 and the hinge 118 determine whether the bracket is a left bracket or a right bracket.

[0040] During installation of the roller shutter 136, the left bracket 202 and the right bracket 204 are mounted on the left side member 132 and the right side member 133 of the window frame 128, respectively. The installation steps as above described apply to the installation of the roller shutter 136 in the window 142 using the left and right brackets 202, 204 accordingly.

CLAIMS

1. A method for mounting a roller shutter (136) on a window frame (128), the window frame (128) comprising two parallel side members (132, 133), a top member (130) and a bottom member, the mounting method suitable for arranging and fixing a cassette (138) of the roller shutter (136) at a lintel (134) of a window (142), the method comprising: fixing temporary brackets (100, 202, 204) at a predetermined height to the side members (132, 133) of the window frame (128); and supporting the cassette (138) of the roller shutter (136) using the temporary brackets (100, 202, 204).
2. The method according to claim 1, wherein the method comprises clamping the temporary brackets (100, 202, 204) on the side members (132, 133) at a predetermined height so as to place the cassette (138) as close as possible to the lintel (134).
3. The mounting method according to one of preceding claims, wherein the temporary brackets (100, 202, 204) each comprise a support portion (102) and a pivotable locking arm (119) attached to the supporting portion, wherein the method comprises pivoting the locking arm into an upright position towards the lintel (134), wherein the locking arm (119) secures the cassette (138) at the top member (130) of the window frame (128).
4. The method according to claim 3, comprising:
fixing two temporary brackets (100, 202, 204) at both side members (132, 133) of the window frame (128);
positioning the cassette (138) at or below the lintel (134) and above the two temporary brackets (100, 202, 204);
pivoting the locking arms (119) into the upright position and supporting the cassette (138) on the locking arms (119) of the two brackets (100, 202, 204);
fixing the cassette at the lintel (134); and
removing the temporary brackets (100, 202, 204).

5. The method according to claim 4, further comprising supporting the cassette (138) on the support portion (102).
6. The method according to one of preceding claims, wherein the method comprises mounting further components including two side rails (144, 146) of the roller shutter (136), wherein the side rails (144, 146) are fastened to the window frame (128).
7. A temporary bracket (100, 202, 204) for supporting a roller shutter (136) during installation on a window frame (128), comprising:
a support portion (102) having two opposite lateral surfaces (104, 106), a top surface (108) and a bottom surface (110);
a clamping portion (116) connected to the support portion (102) for fastening on the window frame (128); and
a locking arm (119) pivotably connected to one of the lateral surfaces (104, 106) for supporting the roller shutter (136),
wherein the support portion (102) and/or the locking arm (119) are configured to support the roller shutter (136) on the top surface (108) .
8. The temporary bracket according to claim 7, wherein the locking arm (119) is connected to the support portion (102) at a bottom edge of the lateral surface (104, 106).
9. The temporary bracket according to claim 7, wherein the locking arm (119) is connected to the support portion (102) about halfway between the top surface (108) and the bottom surface (110).
10. The temporary bracket according to any of claims 7 to 9, wherein the clamping portion (116) comprises a first jaw (124) and a second jaw (126) capable of moving relative to each other.
11. The temporary bracket according to claim 10, wherein the first jaw (124) is coupled to a threaded pin (120) that is traced by a wing nut (122).

12. The temporary bracket according to claim 10 or 11, wherein the second jaw (126) is provided in the shape of a flat plate for overlapping a window from the outside.
13. The temporary bracket according to any of claims 7 to 12, wherein the locking arm (119) is hinged on the support portion (102).
14. A kit for mounting a roller shutter (136) on a window frame (128) comprising at least two temporary brackets (100, 202, 204) according to any of claims 7 to 13.
15. The kit according to claim 14, wherein one of the temporary brackets (100, 202, 204) is configured to be mounted on a first side member (132, 133) of the window frame (128), and another one of the temporary brackets (100, 202, 204) is configured to be mounted on a second side member (132, 133) of the window frame (128).

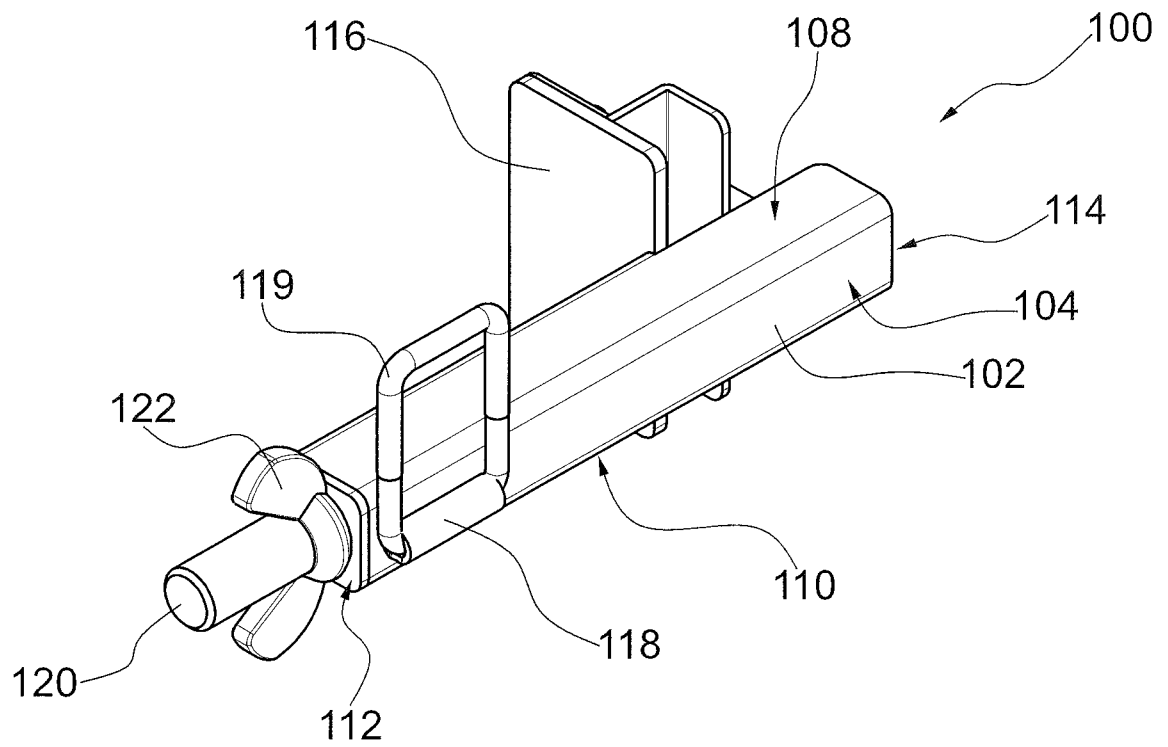


FIG.1

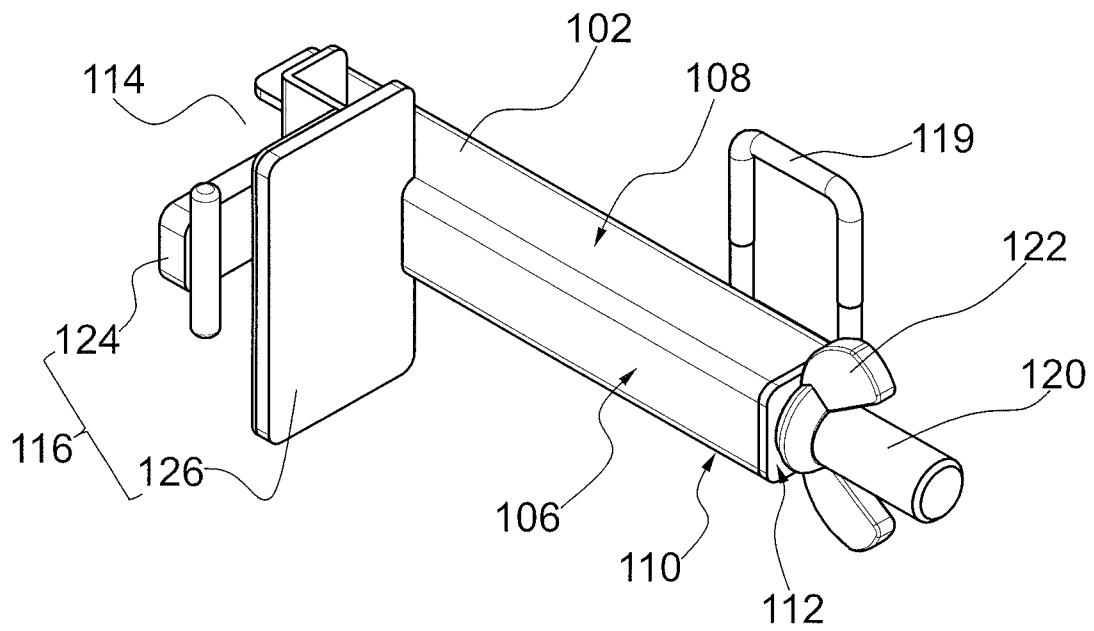


FIG.2

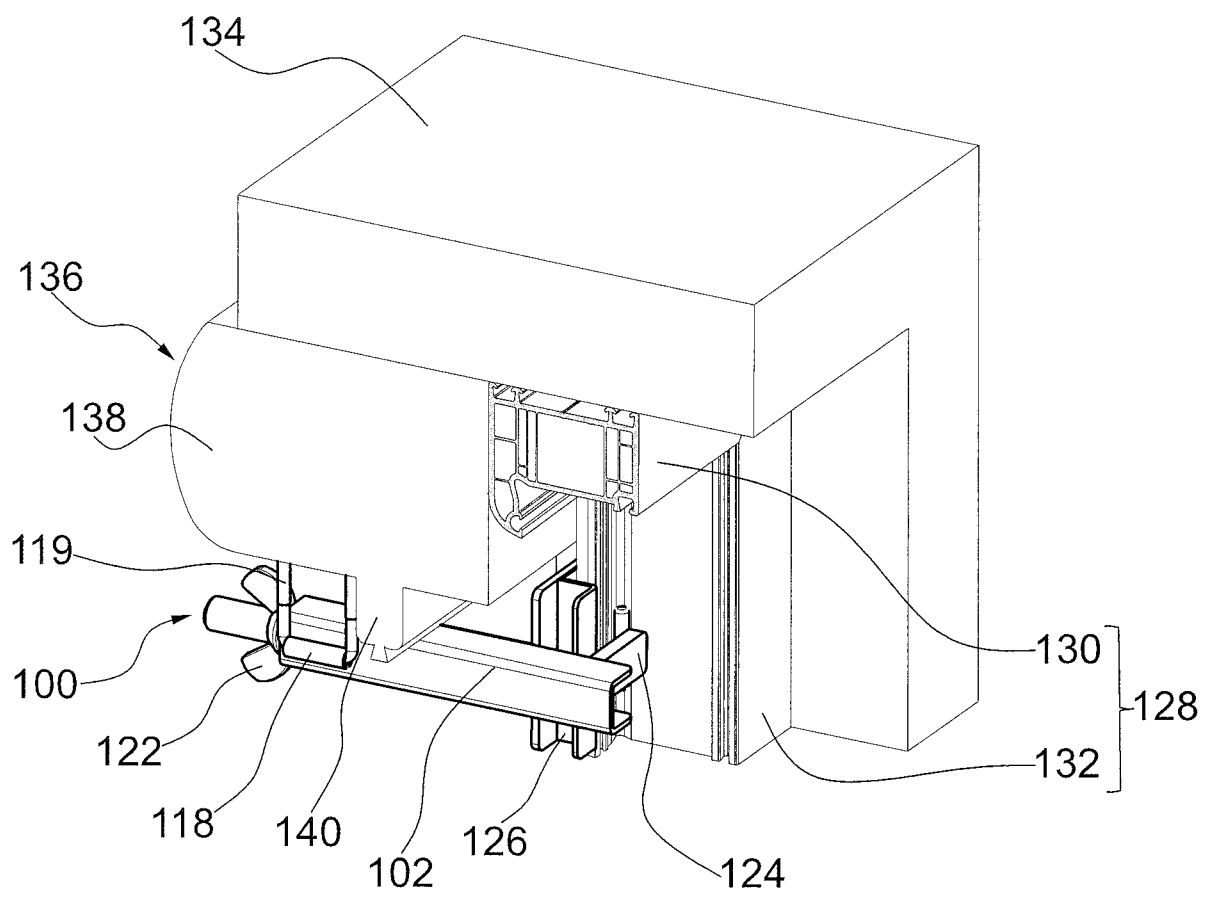


FIG.3

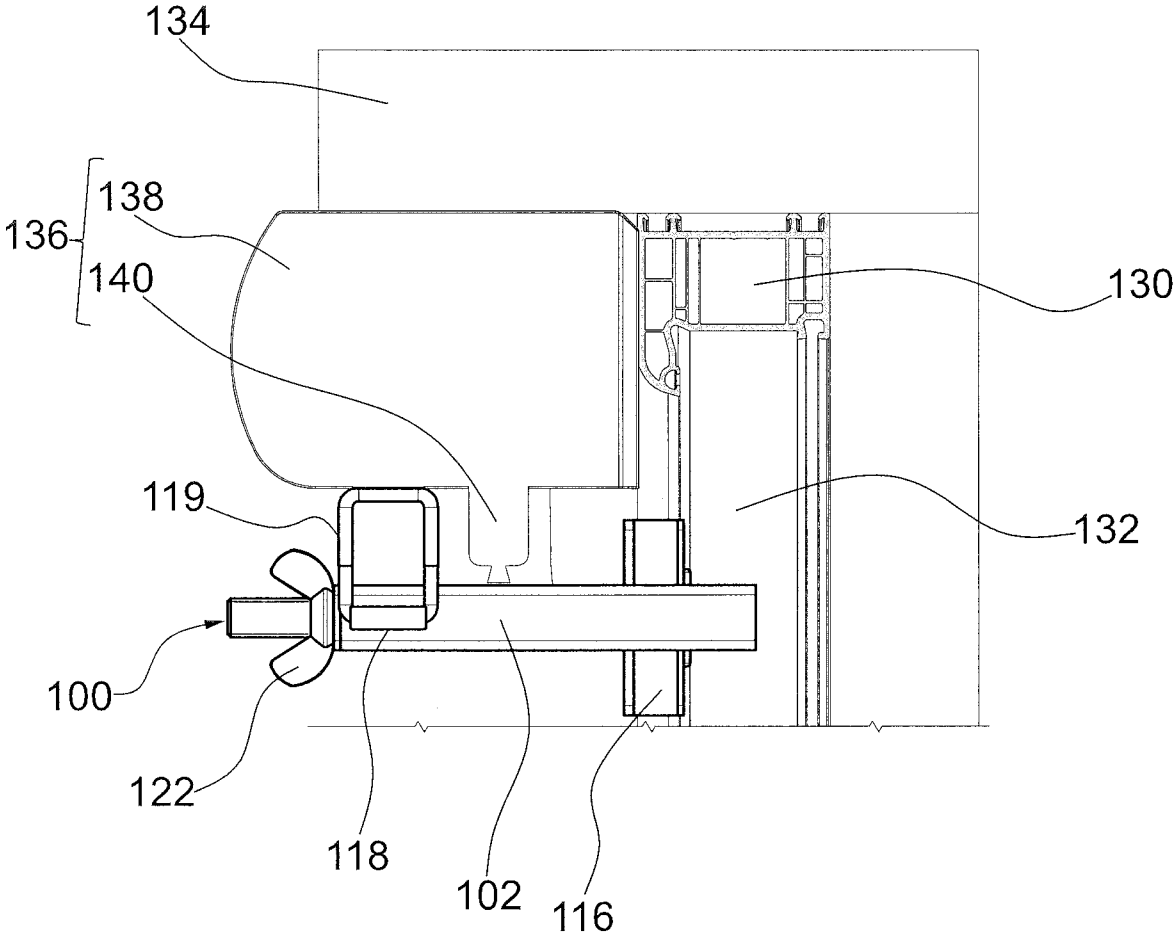


FIG.4

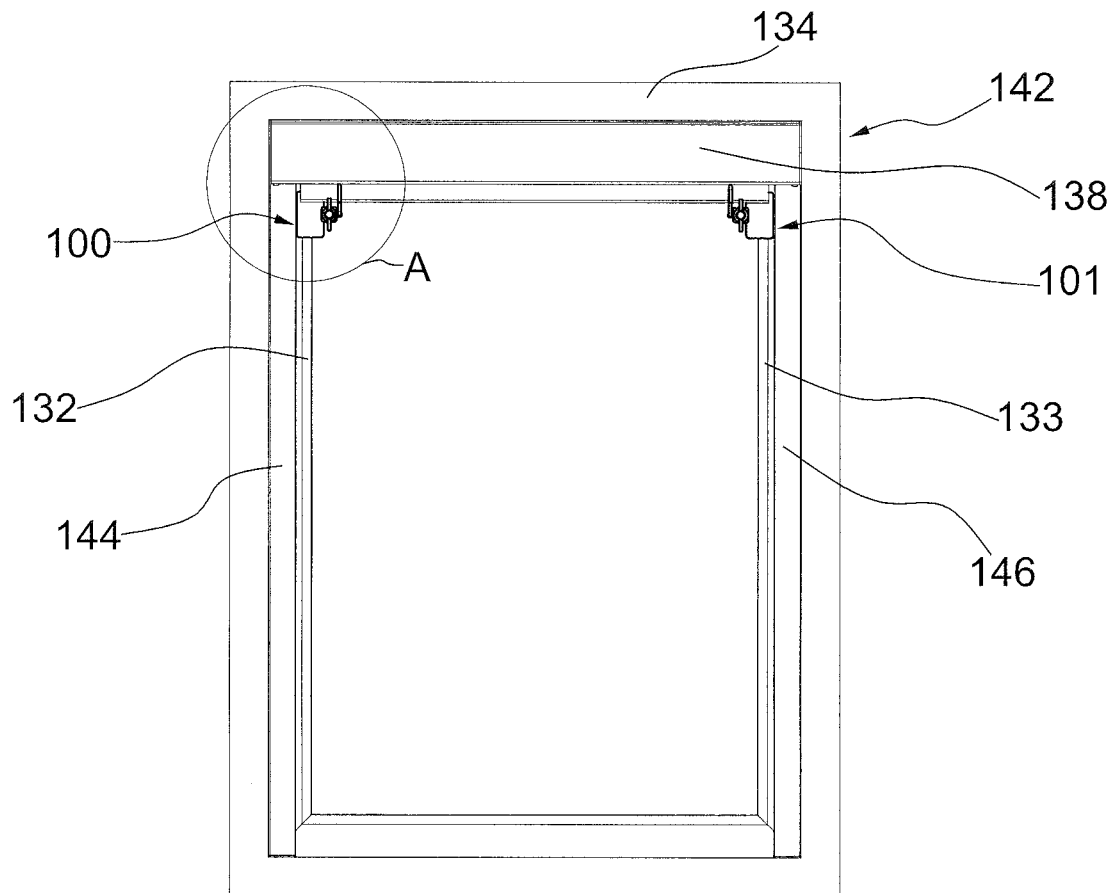


FIG.5

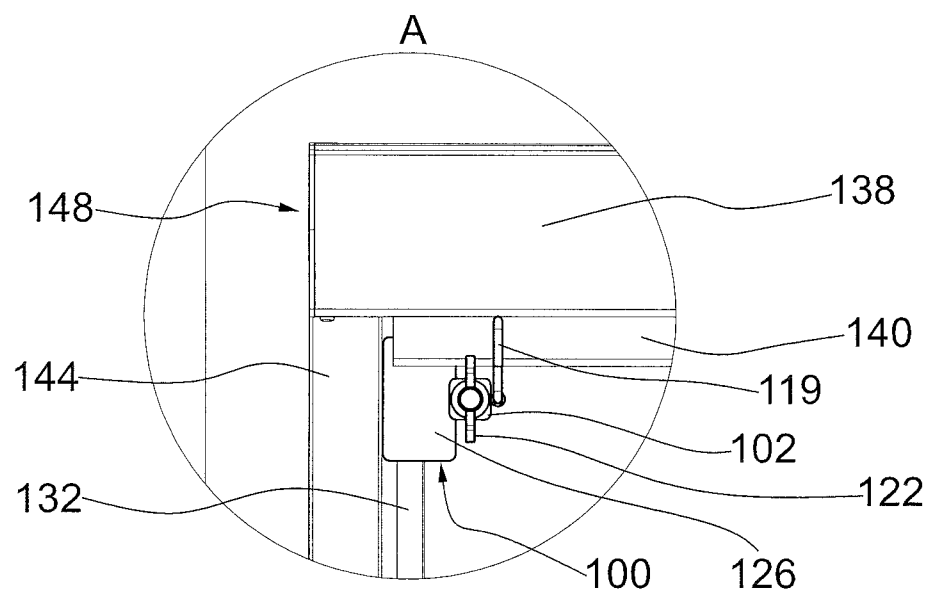


FIG.6

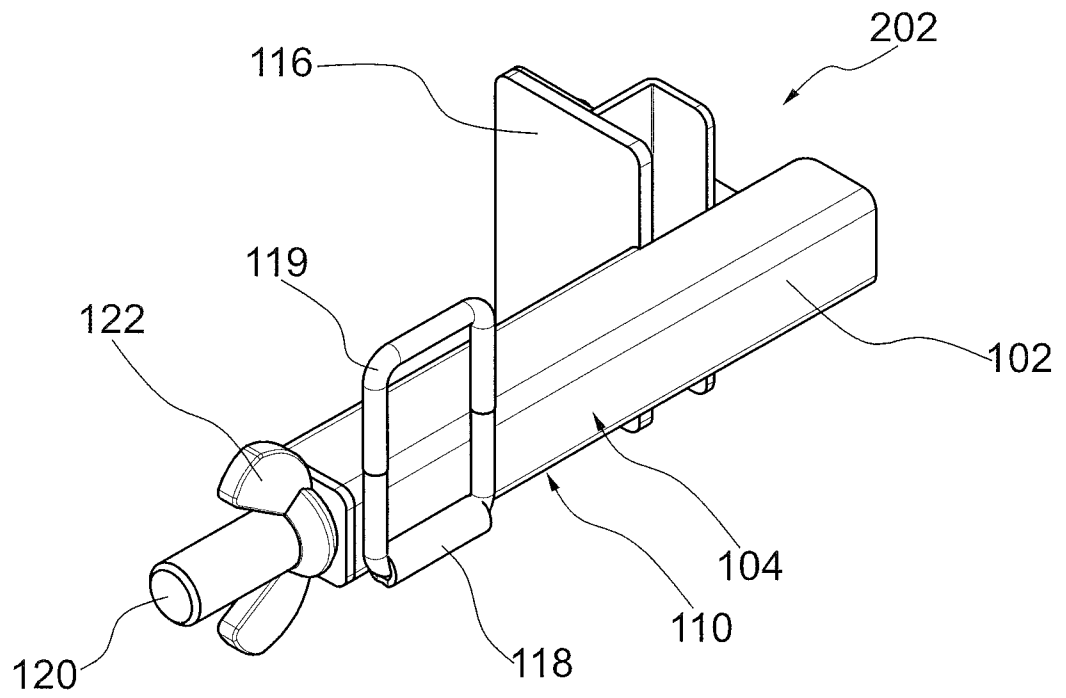


FIG. 7

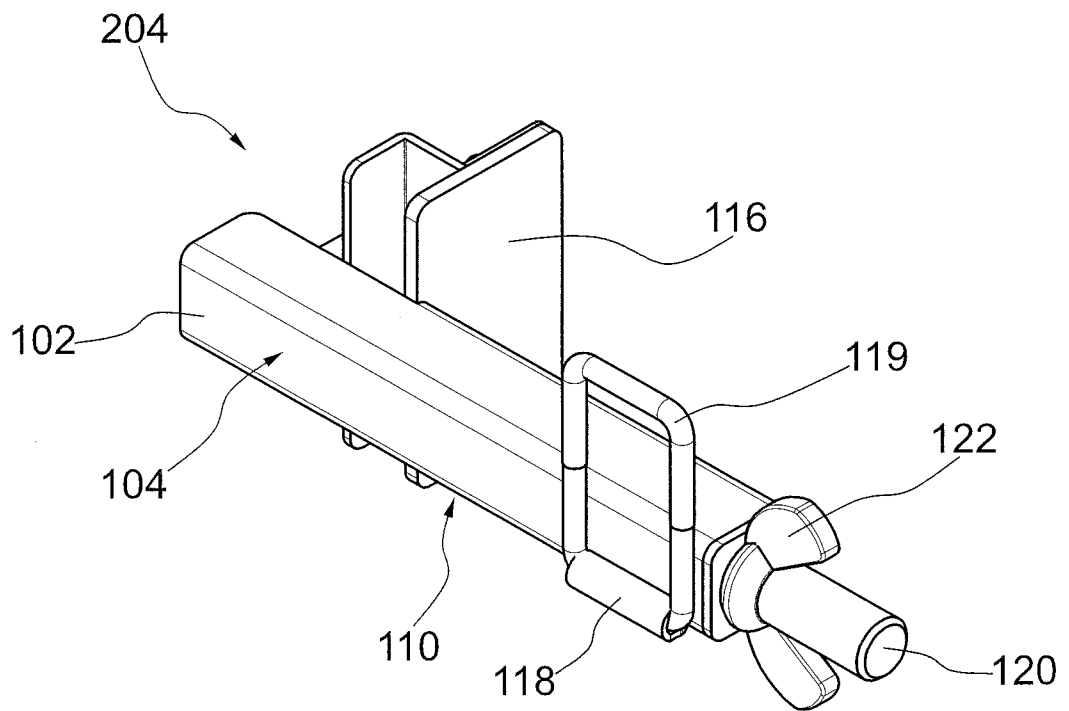


FIG. 8

INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2016/065579

A. CLASSIFICATION OF SUBJECT MATTER
INV. E06B9/17
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	EP 0 263 465 A2 (BESLER ARMIN) 13 April 1988 (1988-04-13)	1,2,6
A	column 3 - column 7; figures 1,1a,5 -----	3-5,7-15
A	EP 2 412 893 A2 (HOECHSTETTER WOLFGANG [DE]) 1 February 2012 (2012-02-01) abstract; claim 1; figure 1 -----	1-15
A	DE 298 07 497 U1 (MOEBUS REINER [DE]) 13 August 1998 (1998-08-13) claim 1; figure 2 -----	1-15



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents :

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

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

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"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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Date of the actual completion of the international search

27 September 2016

Date of mailing of the international search report

11/10/2016

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European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040,
Fax: (+31-70) 340-3016

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Schwertfeger, C

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/EP2016/065579

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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