(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) **EP 1 762 680 A2**

(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
14.03.2007 Bulletin 2007/11

(51) Int Cl.:
E05D 7/082 *(2006.01)* *E05D 11/00* *(2006.01)*

(21) Application number: **06018381.1**

(22) Date of filing: **01.09.2006**

(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC NL PL PT RO SE SI SK TR
Designated Extension States:
AL BA HR MK YU

(30) Priority: **09.09.2005 GB 0518419**

(71) Applicant: **Keystone Lintels Limited**
Cookstown County Tyrone
BT90 9DG (GB)

(72) Inventor: **Coyle, Sean of Ballyreagh Industrial Estate,**
County Tyrone,
Northern Ireland (GB)

(74) Representative: **McCarthy, Denis Alexis et al**
MacLachlan & Donaldson
47 Merrion Square
Dublin 2 (IE)

(54) **A hinge arrangement for aiding the assembly/installation of roof windows**

(57) A hinge arrangement (1) for aiding the assembly/installation of roof windows, the hinge arrangement (1) comprising a two part hinge having a first component part of a hinge having a member for receiving a locating member. A second component part (2) of the hinge has a locating member (9) being movably mounted on the second component part (2) of the hinge and an arrangement (21, 22, 25) for releasably fixing the position of the locating member (9) relative to the second component part (2) of the hinge.

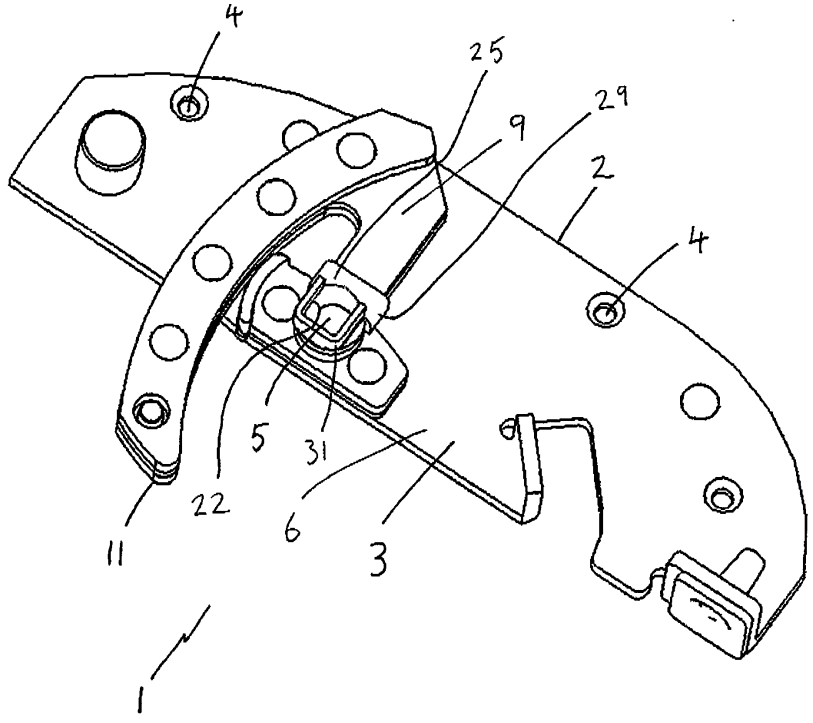

Figure 2

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Description

[0001] The present invention relates to a hinge arrangement for aiding the assembly/installation of roof windows.

[0002] The present method of installing roof windows involves an opening being cut in the rafters of the roof and the cut rafters being boxed off. A window frame is then set into the boxed off opening for holding an openable glazed frame portion of the roof window and the window frame is secured into the boxed off opening in the roof. A first component of a roof window hinge is generally mounted on the internal surface of both lateral frame members of the window frame. A person installing the roof window must then lift the glazed famed portion of the roof window and move it into alignment with the opening in the window frame. The first component of each roof window hinge has an opening leading into a slot. The opening and slot are formed for receiving a locating means, typically a finger pivotally mounted on a second component of each roof window hinge which is generally mounted on a corresponding position on the external surface of both lateral frame members of the glazed framed portion of the roof window.

[0003] The real problem is encountered during installation at the critical moment when the person holding the glazed frame portion offers it up to the fixed frame portion when both fingers are required to be precisely orientated to facilitate insertion of the fingers into the two openings of the first component of the two part hinges. If the fingers are not exactly orientated so as to facilitate smooth insertion into the openings, then one or both of the fingers can abut against a solid portion of the hinge adjacent the opening and the fingers move further away from the desired orientation of insertion. The problem is exacerbated when the roof window is large especially widthwise and when there is only one person present to install the window.

[0004] It is an object of the present invention to obviate or mitigate the problem of alignment of hinge fingers and hinge openings of two part hinges during the installation of roof windows.

[0005] Accordingly, the present invention provides a hinge arrangement for aiding the assembly/installation of roof windows, the arrangement comprising a two part hinge having a first component part of a hinge having means for receiving locating means and a second component part of the hinge having a locating means being movably mounted on the second component part of the hinge and means for releasably fixing the position of the locating means relative to the second component part of the hinge.

[0006] Ideally, the means for receiving locating means is provided by the first component part of the hinge having an opening leading into a guide slot.

[0007] Preferably, the locating means is a locating finger.

[0008] Ideally, the locating means is pivotally mounted on the second component part of the hinge.

[0009] Preferably, the locating finger is pivotally mounted on a pivot pin extending from the second component part of the hinge.

[0010] Ideally, the means for releasably fixing the position of the locating means relative to the second component part of the hinge comprises brake means acting between the second component part of the hinge and the locating means.

[0011] Preferably, the brake means is acting between the pivot pin and the locating finger.

[0012] Ideally, the second component part has a base plate which is mountable to the external surface of both lateral frame members of a glazed frame portion of a roof window.

[0013] Preferably, the base plate has apertures.

[0014] Ideally, a pivot pin protrudes substantially orthogonally from a main face of the base plate.

[0015] Preferably, a locating finger is pivotally mounted on the pivot pin for rotation in a plane substantially parallel to the main plane of the base plate.

[0016] Ideally, a first component part of the hinge arrangement has an opening extending into a guide slot for receiving initially the free end and subsequently the entire length of the locating finger.

[0017] Preferably, the brake means comprises a pair of flats formed on the pivot pin adjacent the free end of the pivot pin and a widget comprising a main body having an opening for locating the widget on the pivot pin. Advantageously, the flats are formed at a position on the pivot pin so that when the locating means are fixed on the flats, the locating means protrude at an angle to allow ready insertion into the opening of the first component parts extending into the guide slots.

[0018] Ideally, the flats are substantially parallel on opposing sides of the pivot pin.

[0019] Ideally, the main body has a pair of lateral flanges for engaging a portion of the locating finger and a u-shaped bracket for operable engagement with the flats extending away from the main body in the opposite direction to the lateral flanges.

[0020] Preferably, the u-shaped bracket has a base portion and two legs and is mounted to the main body by the base portion only.

[0021] Ideally, the two legs are free to flex in a plane parallel to the main plane of the main body.

[0022] Ideally, the legs are spaced apart a predetermined distance so as to apply a compressive force on a cylindrical portion of the free end of a cylindrical pivot pin and to releasably fix the angular position of the locating fingers relative to the pivot pin and the base plate when the legs rotate onto the flats formed on the free end of the pivot pin.

[0023] Accordingly, the present invention also provides a method of installing a roof window having a pair of two part hinges, a first component part of each hinge arrangement having means for receiving a locating means and the second component part of each hinge

having a locating means movably mounted thereon and means for releasably fixing the position of the locating means relative to the second component part, the installation method comprising installing an outer frame with a pair of mutually opposing first or second component parts of a hinge in a roof, releasably fixing the position of each locating means relative to the second component parts of each hinge and moving a glazed frame portion of a roof with a pair of mutually opposed correspondingly located first or second component parts of the hinge arrangement towards the outer frame so that the locating means are both releasably fixed substantially in alignment with the means for receiving the locating means when the glazed frame portion is offered up to the outer frame.

[0024] The invention will now be described with reference to the accompanying drawings, which show by way of example only one embodiment of a hinge arrangement for aiding with assembly/installation of roof windows. In the drawings:

Figure 1 is a perspective view of a second component part of a hinge arrangement;
Figure 2 is a second perspective view of the second component part of hinge arrangement of Figure 1;
Figure 3 is a front elevational view of the second component part of Figures 1 and 2;
Figure 4 is a first perspective view of a brake member; and
Figure 5 is a second perspective view of a brake member.

[0025] Referring to the drawings and initially to Figures 1, 2 and 3 there is shown a second component part 2 of a hinge arrangement indicated generally by the reference numeral 1. The second component part 2 comprises a base plate 3 which is mounted to the external surface of both lateral frame members of a glazed frame portion of a roof window by screws or some similar fixing means via apertures 4. It will of course be appreciated that the second component part could equally be mounted on the window frame fixed in the roof. A pivot pin 5 protrudes substantially orthogonally from a main face 6 of the base plate 3 and a locating finger 9 is pivotally mounted on the pivot pin 5 for rotation in a plane substantially parallel to the main plane of the base plate 3. This pivot pin 5 and locating finger 9 allow the glazed frame portion of the roof window to move/rotate relative to the outer window frame which is secured into the roof. A first component part of the hinge arrangement (not shown) has an opening extending into a guide slot for receiving initially the free end 11 and subsequently the entire length of the locating fingers 9. The difficulty with assembling the roof windows as they currently are arises when a person is holding the glazed frame portion of the roof window with both hands where the locating fingers have been manually positioned by the person before lifting the glazed frame position so as to try and insert the locating fingers 9 into the openings in the first component part of the hinge arrangement. If the roof window is big especially widthwise it proves very cumbersome for the installer to retain the locating fingers 9 at the correct orientation to allow immediate insertion whilst lowering the glazed frame portion into position as well as maintaining a safe stance on the roof. The operation often requires a second person to align the locating fingers 9 at the moment just prior to insertion as the other person holding the glazed frame portion offers it up to the fixed frame portion.

[0026] The present invention provides a brake element indicated generally by the reference numeral 21, comprising a pair of flats 22, see Figure 2 and 3, formed on the pivot pin 5 adjacent the free end of the cylindrical pivot pin 5 and a widget 25, see especially Figures 4 and 5, comprising a main body 26 having an opening 27 for locating the widget 25 on the pivot pin 5. The main body 26 has a pair of lateral flanges 29 for engaging a portion of the locating finger 9 and a u-shaped bracket 31 extending away from the main body 26 in the opposite direction to the lateral flanges 29. The u-shaped bracket 31 has a base portion 33 and two legs 34 and is mounted to the main body 26 by the base portion 33 only, leaving the two legs 34 free to flex in a plane parallel to the main plane of the main body 26. The legs 34 are spaced apart a predetermined distance so as to apply a compressive force on the cylindrical portion of the free end of the pivot pin 5 and to releasably fix the angular position of the locating finger 9 relative to the pivot pin 5 and the base plate 3 when the legs 34 rotate onto the flats 22 formed on the free end of the pivot pin 5.

[0027] The distance between the flats 22 and the distance between the internal surface of the legs 34 are measured so that the force required to move the locating fingers 9 away from their temporarily fixed position is sufficient to prevent small forces occurring as a result of accidental abutment between the locating fingers 9 and other items from causing the locating fingers to be dislodged from the temporarily fixed angular positions. However, the force required to rotate the legs 34 away from the flats 22 is not to be so great as to make the hinge arrangement 1 unnecessarily stiff as the mechanical break means is intended only as an aid for the purposes of installation/assembly. The advantage is that one person can readily install a roof window.

[0028] Variations and modifications can be made without departing from the scope of the invention as defined in the appended claims.

Claims

1. A hinge arrangement (1) for aiding the assembly/installation of roof windows, the hinge arrangement (1) comprising a two part hinge having a first component part of a hinge having means for receiving locating means and a second component part (2) of the hinge having a locating means (9) being movably

mounted on the second component part (2) of the hinge and means (21, 22, 25) for releasably fixing the position of the locating means (9) relative to the second component part (2) of the hinge.

2. A hinge arrangement (1) as claimed in claim 1, wherein the means (21, 22, 25) for releasably fixing the position of the locating means (9) relative to the second component part (2) of the hinge comprises brake means (21) acting between the second component part (2) of the hinge and the locating means (9).

3. A hinge arrangement (1) as claimed in claim 1 or claim 2, wherein the locating means (9) is pivotally mounted on the second component part (2) of the hinge via a pivot pin (5).

4. A hinge arrangement (1) as claimed in claim 3, wherein the brake means (21) acts between the pivot pin (5) and the locating means (9).

5. A hinge arrangement (1) as claimed in claim 3 or claim 4, wherein the brake means (21) comprises a pair of flats (22) formed on the pivot pin (5) adjacent the free end of the pivot pin (5) and a widget (25) comprising a main body (26) having an opening (27) for locating the widget (25) on the pivot pin (5).

6. A hinge arrangement (1) as claimed in claim 5, wherein the main body (26) has a pair of lateral flanges (29) for engaging a portion of the locating means (9) and a u-shaped bracket (31) for operable engagement with the flats extending away from the main body (26) in the opposite direction to the lateral flanges (29).

7. A hinge arrangement (1) as claimed in claim 7, wherein the u-shaped bracket (31) has a base portion (33) and two legs (34) and is mounted to the main body (26) by the base portion (33) only.

8. A hinge arrangement (1) as claimed in claim 7, wherein the two legs (34) are free to flex in a plane parallel to the main plane of the main body (26).

9. A hinge arrangement (1) as claimed in claim 7 or claim 8, wherein the legs are spaced apart a predetermined distance so as to apply a compressive force on a cylindrical portion of the free end of the pivot pin (5) and to releasably fix the angular position of the locating means (9) relative to the pivot pin (5) when the legs (34) rotate onto the flats (22) formed on the free end of the pivot pin (5).

10. A hinge arrangement substantially as hereinbefore described with reference to and as shown in the accompanying drawings.

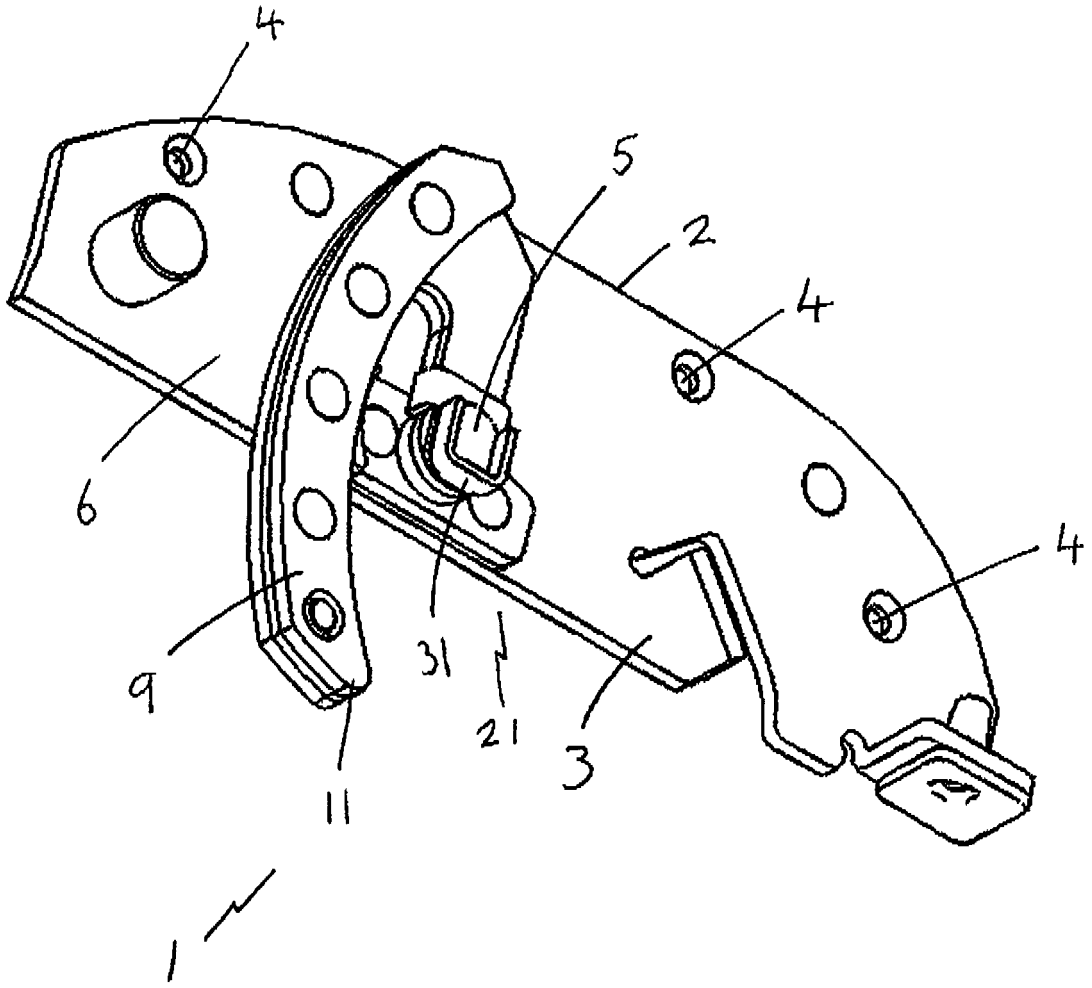

Figure 1

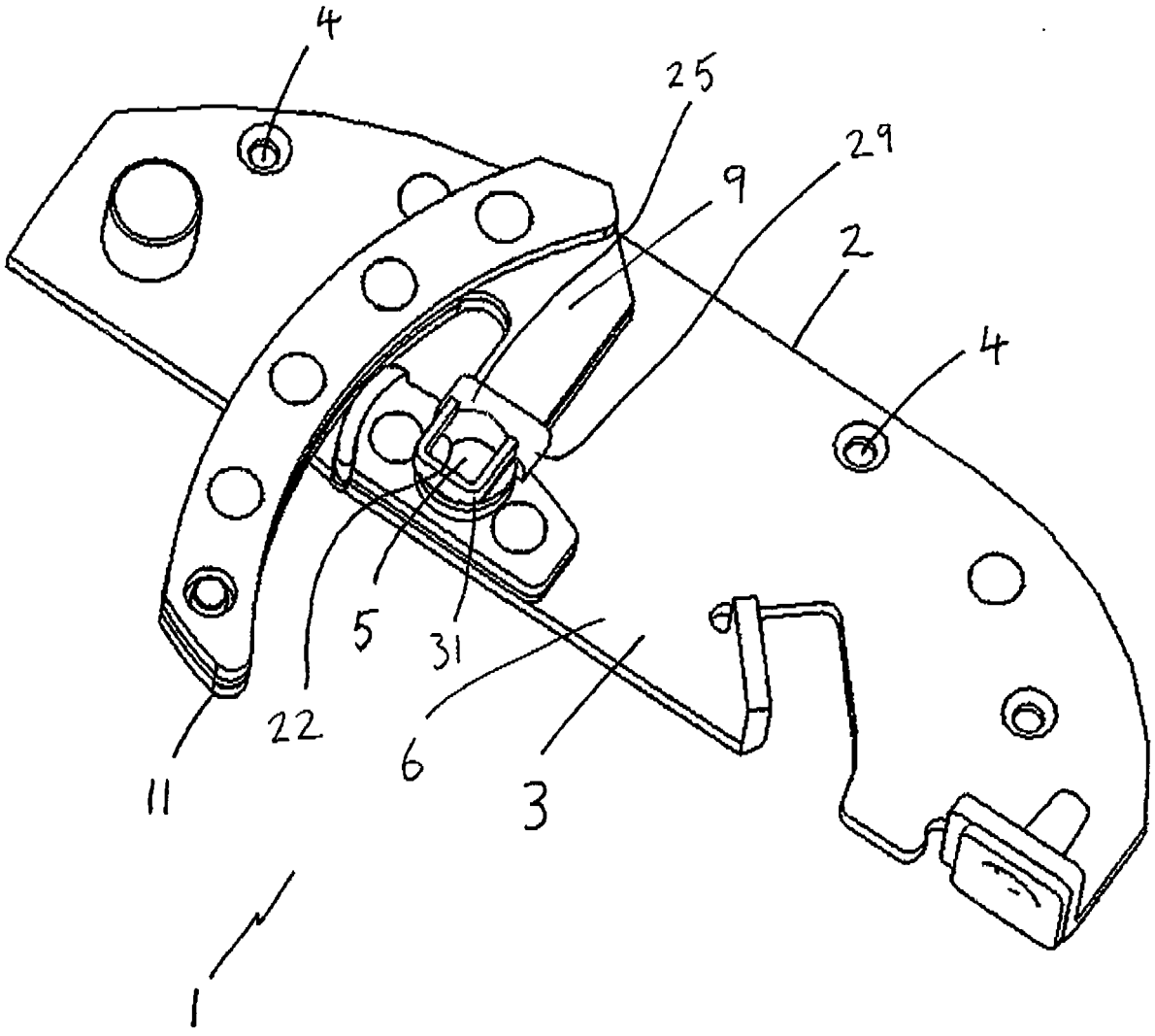

Figure 2

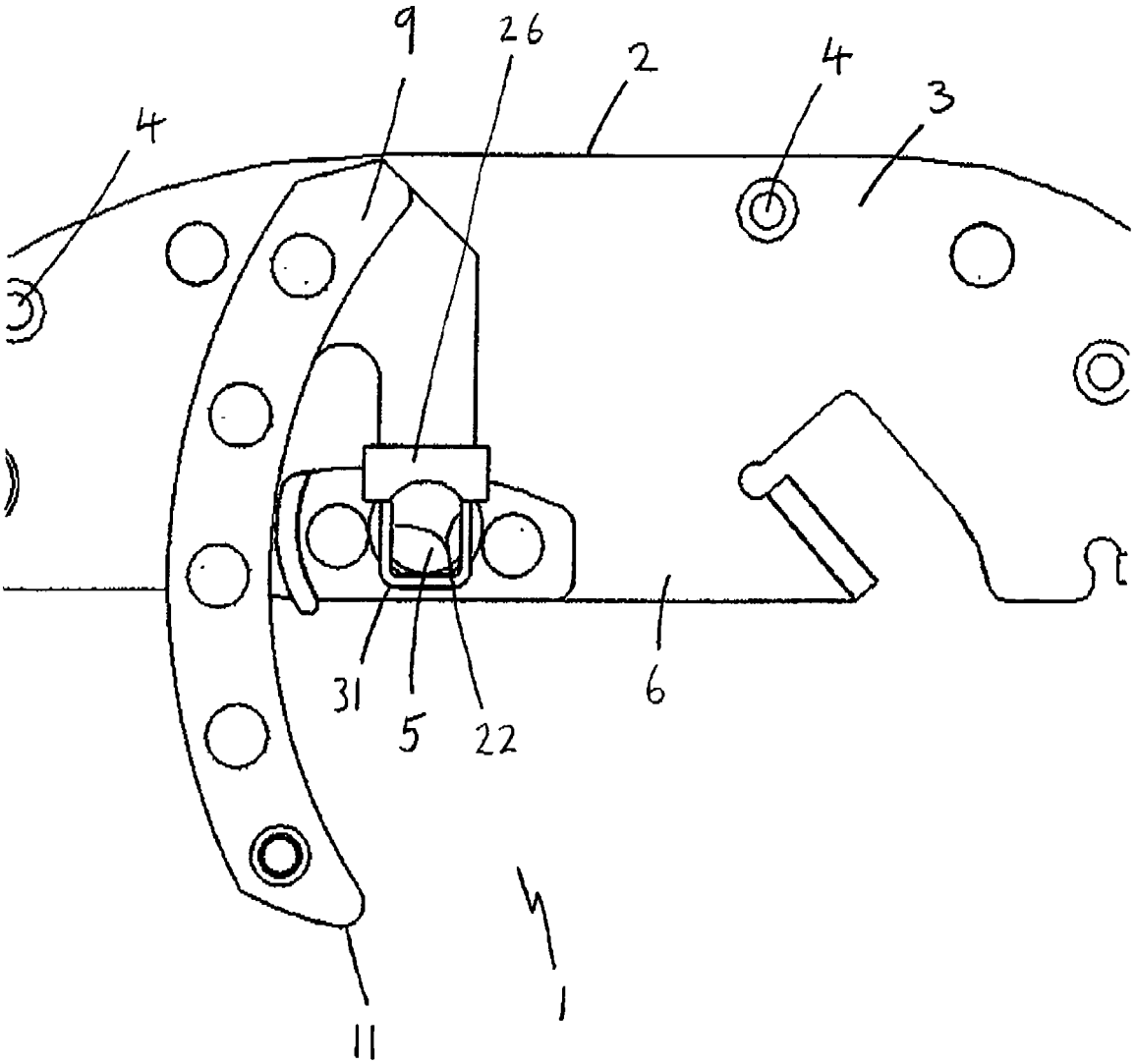

Figure 3

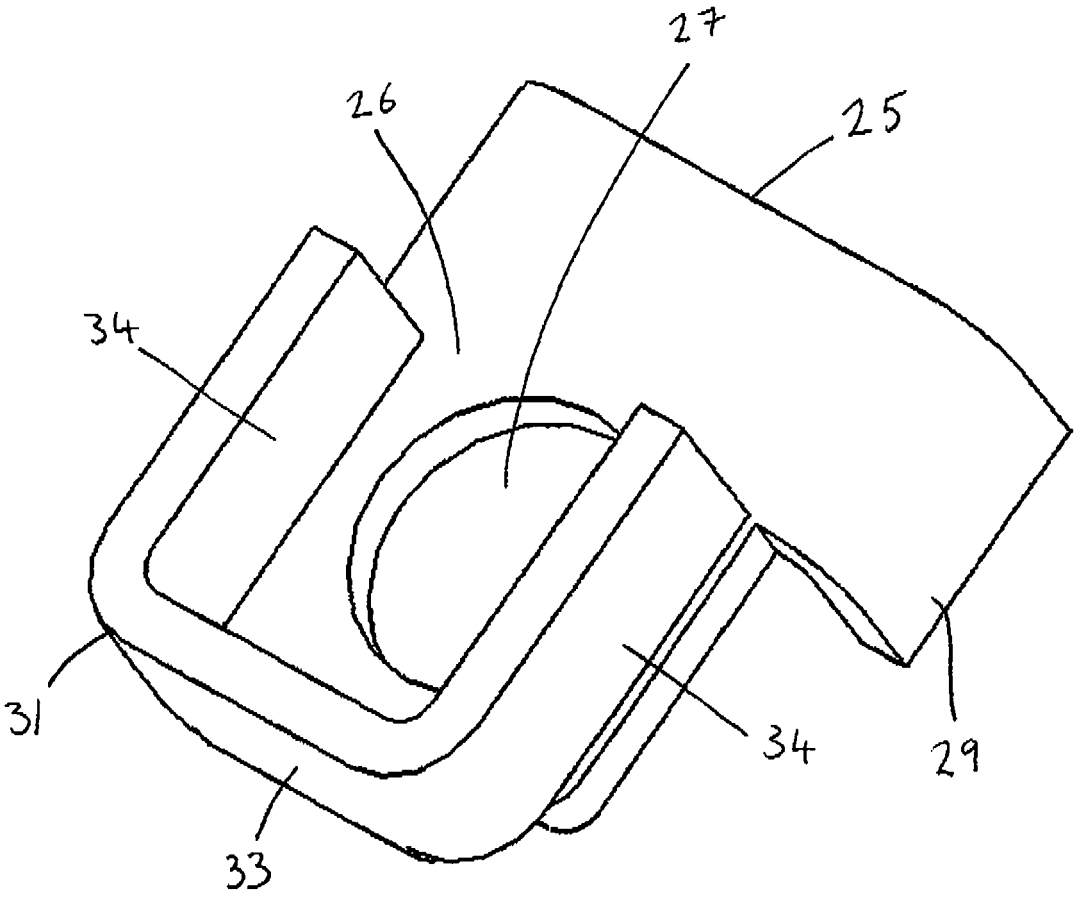

Figure 4

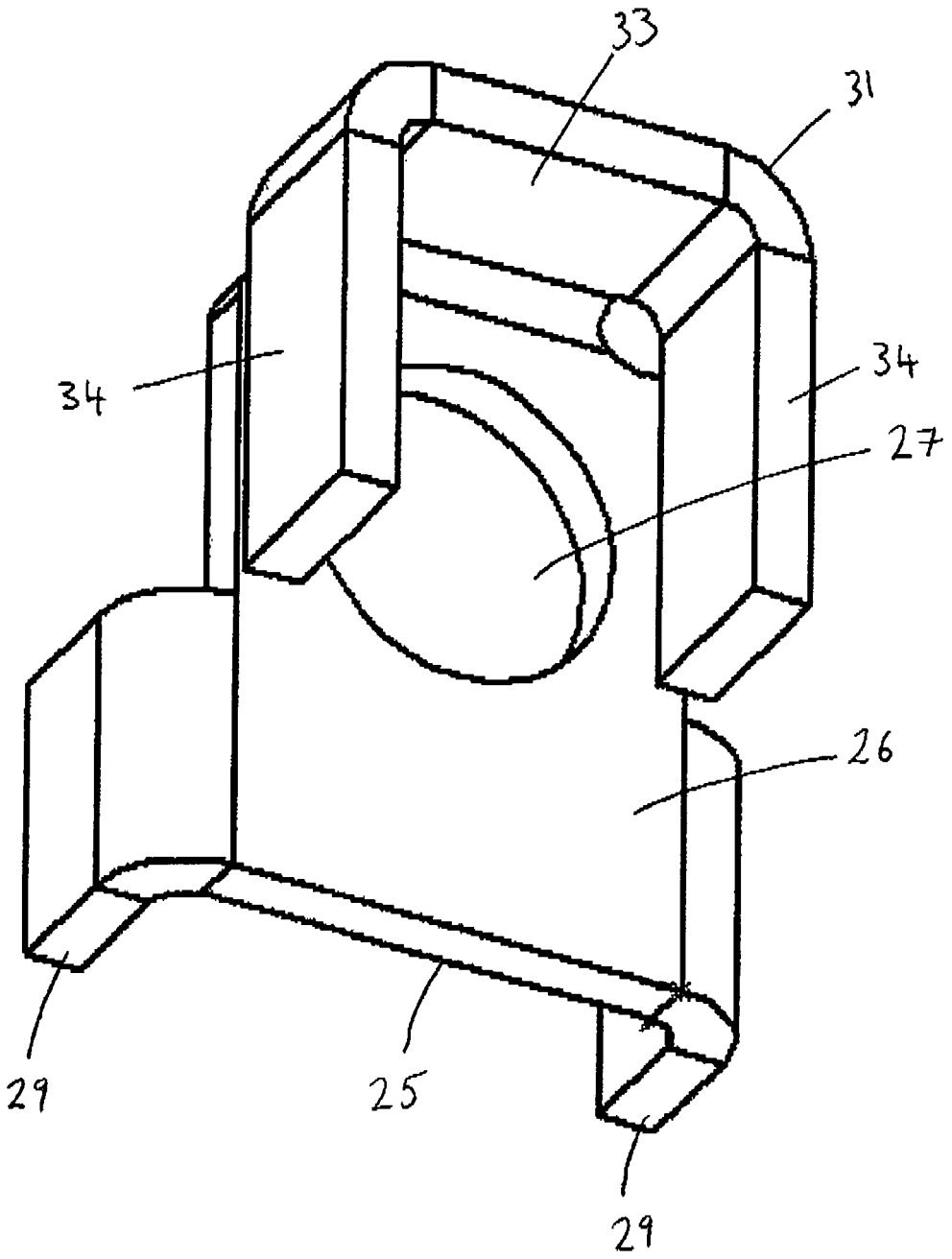

Figure 5