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(71) Applicant: **Rauk, Grzegorz**
42-580 Wojkowice (PL)

(72) Inventor: **Rauk, Grzegorz**
42-580 Wojkowice (PL)

(74) Representative: **Piela, Marek**
Rzecznik Patentowy Marek Piela
ul. Górnicza 9c/2
42-600 Tarnowskie Gory (PL)

(54) **A corner fastener for framing of a roller blind**

(57) A corner fastener of the roller blind framing is installed inside a glass chamber. It has a body (1) with a vertical arm (2) and a horizontal arm (3), which branch off at right angles and are used for joining the fastener to the framing. There are two sockets for a reed relay (7) on the vertical arm (2) inclined 110° each others. The body (1) has a kinematic element, which has an outside pin for rotational fastening of the rod of the roller blind (5) and an inside hold (4) for fixing a unit driving the roller blind rod. The outside surface of both arms (2) (3) is adjusted to the inside shape of the slat of the roller blind framing and has sliding-over limiters. The reed relay and the motor set fixed in the fastener are powered by energy generated by a photoelement placed in the inner surface of the framing.

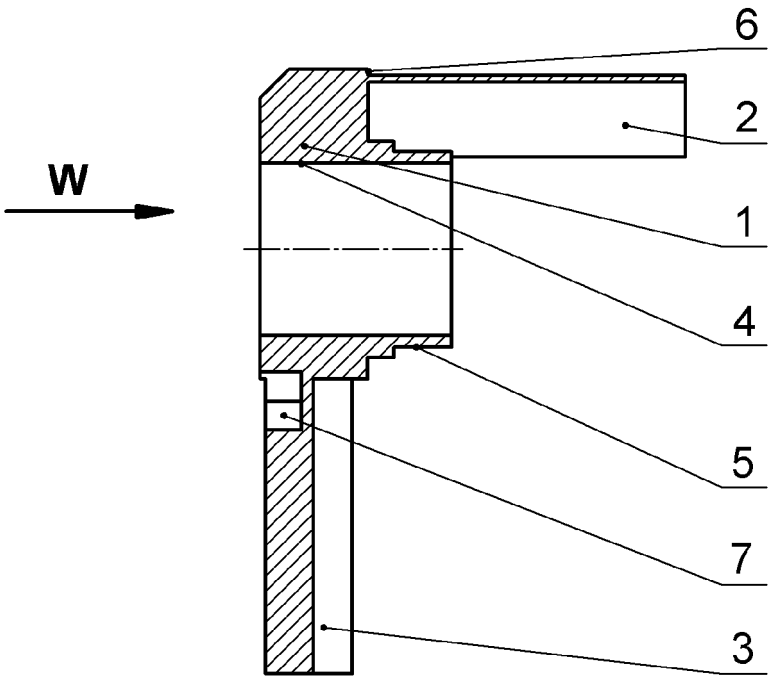

Fig. 1

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Description

Technical Field

[0001] The subject of the invention is a corner fastener intended especially for fastening the framing of a roller blind. The fastener is a component of the system for fastening and driving intra-window roller blinds.

Background Art

[0002] The description of the utility model No. PL 62291 presents a roller blind placed inside a chamber between the window panels, the frame of which, in the upper part, is fastened with a roller blind driven by an electric motor. The upper rod of the roller blind unrolls and rolls up along with the motor rotation and the lower rod slides in the frame and functions as a weight. In case of oblique windows, the lower rod can also be driven by a motor. The upper rod has operating-supplying contacts connected to the motor, which are led outside the window frame.

[0003] As the roller blinds are placed in tight chambers between two panels, their construction must be compact and at the same time, they must work reliably and enable precise operating during pulling up and down. The elements which operate these functions must be constructed and installed in such a way, that they do not impair the look of the window.

Disclosure of Invention

[0004] The essence of the invention is one of the roller blind components - a corner fastener of the framing placed inside a glass chamber. The distinctive feature of this fastener is its body with a vertical and horizontal arm, which branch off at right angles and which join the fastener to the framing slats. There is at least one socket for a reed relay - the socket should be preferably placed in the vertical arm of the body.

[0005] In an advantageous version of the invention, the fastener body has a kinematic element, which has an outside pin for a rotational fastening of the roller blind and an inside holder for fixing a unit driving the roller blind rod - that is a set of electric motor with a gear and clutch.

[0006] In another advantageous version of the invention, the socket for a reed relay is in form of a groove on the outer surface of the vertical arm of the body and it is inclined at 60° to 140° relative to the neighbouring socket on this arm.

[0007] In yet another advantageous version of the invention, the outer surface of both arms, the vertical and the horizontal one, is adjusted to the inside shape of the slat of the roller blind framing and it has sliding-over limiters.

[0008] In another advantageous version of the invention, the fastener has a photoelement on its extension. Depending on the insolation, the photoelement may be encased in the horizontal or vertical slat of the framing in such a way, that after installation it is inside the glass chamber.

Advantageous Effects of the Invention

[0009] According to the invention, the fastener facilitates the initial installation of the roller blind and ensures its reliable functioning after it has been placed between the panels. Moreover, the fastener makes it possible to install the motor set in the window in such a way, that it is not visible and the reed relays enable precise movement of the roller blinds, especially in the final stages of pulling the blinds up and down.

Brief Description of Figures in the Drawings

[0010] The invention will be described and explained more precisely by means of a drawing in which

Fig. 1 presents the upper fastener in the axial section;
Fig. 2 - the upper fastener in the "W" view with fig. 1;
Fig. 3 - the lower fastener viewed from the side; and
Fig. 4 - the lower fastener in the "V" view with fig. 3.

Best Mode for Carrying Out the Invention

[0011] According to the invention, the upper fastener (Fig. 1) has body 1 with a horizontal arm 2 and a vertical arm 3 branching off at right angles. In body 1 there is a kinematic element consisting of a holder 4 for permanent fixing of the motor set and a pin 5 for rotational mounting of the upper rod of the shutter. The motor set is coupled with the roller blind rod and it puts the rod in rotary pulling up-pulling down movement. The function of arm 2 and 3 is to join the elements of the framing (the upper and side slats) at right angles. On both these arms 2 and 3 there are limiters 6, which stiffen the whole construction after it has been assembled. The vertical arm 3 (Fig. 2) has sockets 7 on its outer surface. The sockets are set out at α =120° relative to one another and after assembling the framing, reed relays are put into them. They function as limit switches supporting automatic operation of the roller blinds.

[0012] According to the invention, the lower fastener (Fig.3) has body 101 with a horizontal arm 102 and a vertical arm 103, which are in the same shape. On the fasteners there are limiters 106. The horizontal arm 102 is put into the side slat of the framing and the vertical arm 103 is put into the lower slat. The lower fastener does not have a kinematic element. There are sockets 107 for reed relays on the outer surface of the vertical arm (Fig. 4). The sockets are set out at β = 110° relative to one another.

[0013] One reed relay placed in each of the fasteners is sufficient for proper operation of the shutter. Sockets 7 and 107 set out at angles α, β allow unidirectional situation of the reed relays, regardless of whether the fas-

tener is situated on the right or left side of the framing.

[0014] The reed relay and the motor set fixed in the fastener are powered by energy generated by a photoelement placed in the inner surface of the framing, on the extension of arm 103.

Claims

1. A corner fastener of the roller blind framing, installed inside a glass chamber **characterised in that** it has a body (1, 101) with a vertical arm (2, 102) and a horizontal arm (3, 103), which branch off at right angles and are used for joining the fastener to the framing whereas there is at least one socket for a reed relay (7, 107) on the vertical arm (2, 102).

2. A fastener, according to claim 1 **characterised in that** the body (1) has a kinematic element, which has an outside pin for rotational fastening of the rod of the roller blind (5) and an inside hold (4) for fixing a unit driving the roller blind rod.

3. A fastener, according to claim 1 **characterised in that** the socket (7, 107) for a reed relay is in form of a groove on the outer surface of the vertical arm (2, 102) and is inclined at 60° to 140° relative to the neighbouring socket on this arm.

4. A fastener, according to claim 1 **characterised in that** the outside surface of both arms, the vertical (2, 102) and the horizontal one (3, 103), is adjusted to the inside shape of the slat of the roller blind framing and has sliding-over limiters.

5. A fastener, according to claim 1. **characterised in that** there is a photoelement fixed on the extension of its arm (3, 102, 103).

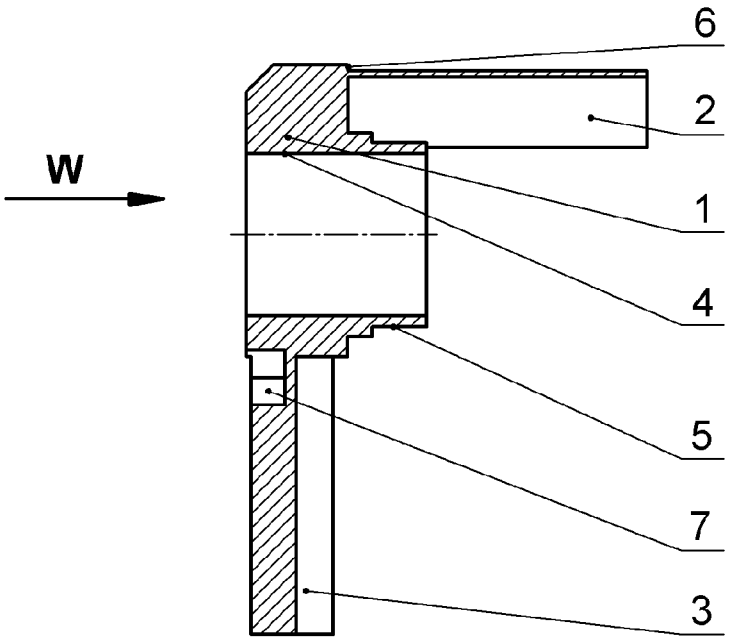

Fig. 1

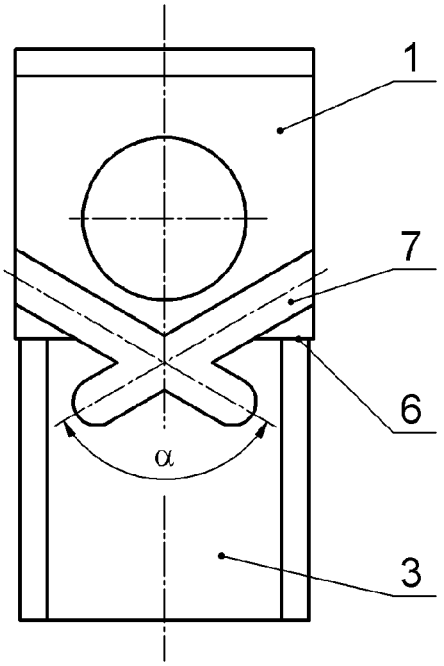

Fig. 2

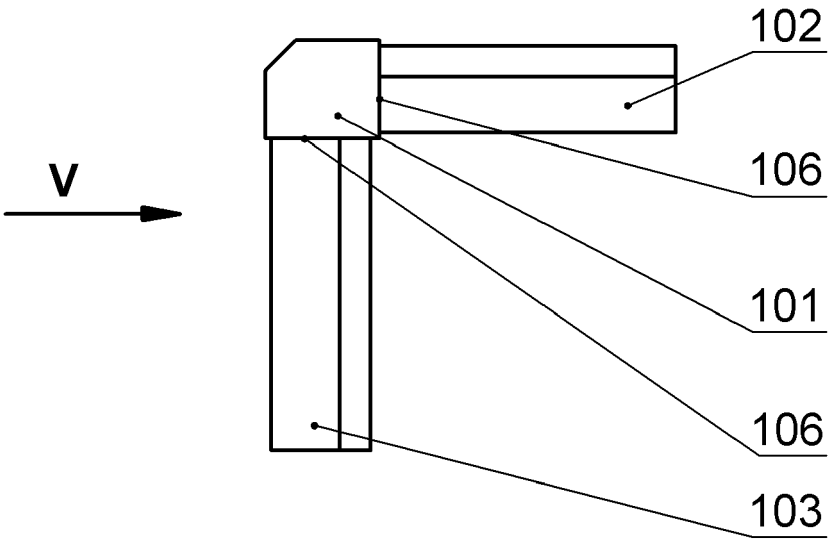

Fig. 3

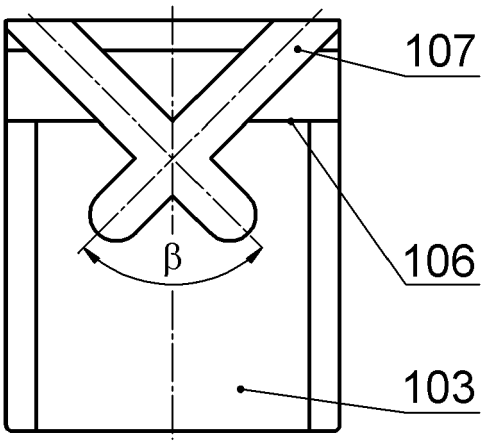

Fig. 4

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EUROPEAN SEARCH REPORT

Application Number
EP 08 10 4875

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	US 2007/144684 A1 (HUTCHINGS DOUGLAS F [US] ET AL) 28 June 2007 (2007-06-28) * figure 4 * * paragraph [0004] * * paragraph [0021] * -----	1-5	INV. E06B9/264

TECHNICAL FIELDS SEARCHED (IPC)

E06B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	3 April 2009	Cornu, Olivier

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
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T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
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2

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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 08 10 4875

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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03-04-2009

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2007144684 A1	28-06-2007	NONE	

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- PL 62291 **[0002]**