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(54) **Magnetic mechanism for venetian blinds actuation positioned in between double glazing with the use of a small DC electric motor**

(57) The present modification regards to the use of a small 24Volts DC motor for venetian blinds actuation positioned in between double glazing. The DC motor is connected to the axis of the external mechanism containing the long cylindrical magnet of two pairs and is activated by the wall mounted controller - receiver either manually or by remote control. The rotation of the external magnet is transmitted through magnetic induction to the respective internal magnet and thus control the venetian blind.

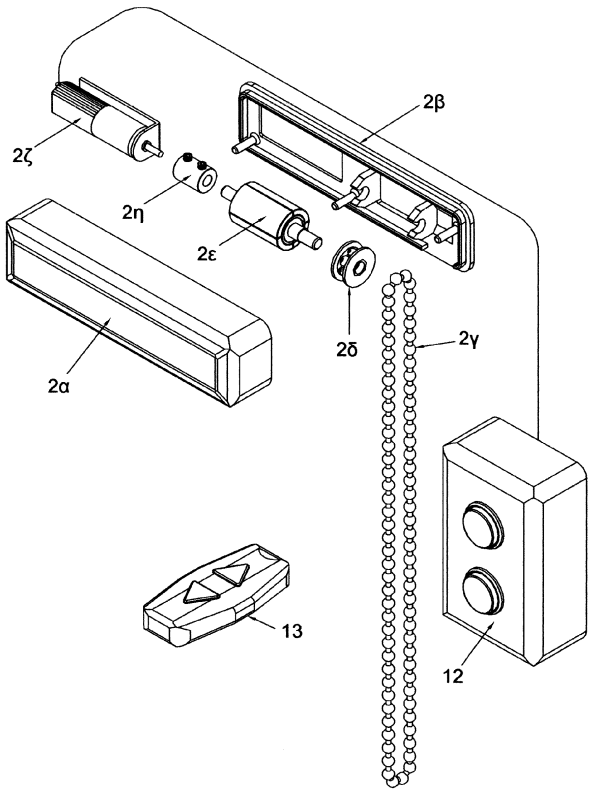

FIGURE 4

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Description

[0001] The invention regards to a mechanism used to control the up and down movement of venetian blinds positioned in between double glazing, with the use of long cylindrical magnet protected by Greek Patent No: 1007536 dated February 20th, 2012.

[0002] The present modification regards to the addition of a small DC electric motor. The electric motor operates with 24V DC through a transformer 230Volts - 50 Hz, which is placed inside a controller - receiver. The controller - receiver is mounted on the wall next to the door or window which contains the double glazing with the venetian blind inside. The commandments for up - down and stop of the electric motor are given through the controller - receiver manually or from a distance with the use of remote control.

[0003] The electric motor is placed inside a box containing the long cylindrical magnet group of two pairs and is connected to it's axis. On the axis a pulley and chain arrangement enables the operation by hand and thus the control of the venetian blinds in case of power disruption. The motor rotates the axis of the external magnet, on which the two pairs of long cylindrical magnets are placed through a coupling and due to magnetic induction the rotation is transmitted to the internal two pairs of long cylindrical magnets. The internal magnet through a series of small gears, contained in a small gear box, transmits the movement to the venetian blinds.

[0004] The stopping of the 24V DC motor at the upper or lower limit is achieved with the use of position sensors. The sensors are placed at the desired upper or lower point inside the frame of the double glazing and transmit the stop command to the wall mounted controller - receiver.

[0005] The initial invention and the modification are described below with the help of an example.

FIGURE 1 shows the overall configuration of the mechanism consisting of the following:

1. Internal mechanism
2. External mechanism (with DC motor)
3. Basic housing profile
4. Plastic side covers for basic housing profile
5. Metal cover for basic housing profile
6. Main axis
7. Cord winders
8. Slats
9. Aluminum profile for double glazing
10. Plastic fasteners for double glazing profile
11. Glasses
12. Wall mounted transformer - receiver
13. Remote control
14. Position sensors

FIGURE 2 shows the internal mechanism (1) connected to the main axis (6) on which the cord winders (7) are fixed, placed in the basic housing profile (3) and covered with the metal cover (5). The whole assembly is connected to the glazing profile (9) with the use of plastic side covers (4) and glazing profile plastic fasteners (10).

FIGURE 3 shows the internal mechanism (1) on whose base (1a) the long cylindrical magnet of two pairs (1c) is supported and through the mini gear box (1b) transmits the movement to axis (1e) and by the connector (1d) to the main axis (6).

FIGURE 4 shows the external mechanism (2) on whose base (2b) the long cylindrical magnet of two pairs (2e) is supported and rotated either by the chain (2c) and pulley (2d) or by the DC motor (2g), closed with cover (2a). The chain (2c) and pulley (2d) rotate manually the external long cylindrical magnet (2e) and through magnetic induction rotates the internal long cylindrical magnet (1c)

[0006] The external mechanism (2) is mounted with the use of double sided adhesive tape on any of the glasses (11) so that both long cylindrical magnets of two pairs, of the internal (1c) and of the external (2e) mechanisms are facing each other in a parallel manner on the respective aperture of the basic housing profile (3).

[0007] The choice of the location for creating the aperture on the basic housing profile (3) to enable the communication between internal magnet (1c) and external magnet (2e) depends on the desired position of the external mechanism.

[0008] The slats (8) are placed in string ladders driven by cords wound on the cord winders (7). The cord winders are fixed on the main axis (6) and are driven by the internal mechanism (1) lifting or lowering the venetian blind enclosed in double glazing (11).

[0009] FIGURE 5 shows the overall picture after the assembly and position of the mechanism in double glazing.

Claims

1. EXTERNAL MECHANISM FOR VENETIAN BLINDS ACTUATION WITH LONG CYLINDRICAL MAGNET WITH THE USE OF A SMALL DC ELECTRIC MOTOR

The external actuation mechanism includes the base where the long cylindrical magnet of two pairs (2e) is placed. The magnet (2e) is driven by the chain (2c) and pulley (2d) arrangement. The modification is referring to the addition of a small 24V dc electric motor (2g) powered by the wall mounted controller - receiver (12) positioned next to the door or window, and is connected to the mechanism through the connecting ring (1d). The command is given either manually from the controller- receiver (12) or by remote

control (13). [{The external actuation mechanism (2) is placed at the proper position of the glass panel (11) parallel to the internal actuation mechanism (1) so that the rotating movement of the external magnet (2e) is transmitted through magnetic induction to the internal magnet (1c)}].

2. INTERNAL MECHANISM FOR VENETIAN BLINDS ACTUATION
WITH LONG CYLINDRICAL MAGNET.
The external actuation mechanism (2), according to claim 1, transmits the movement to the internal actuation mechanism (1), which includes the base (1a) where the mini gear box (1b) is mounted. The rotation of gears on mini gear box (1b) is achieved through the rotation of the long cylindrical magnet of two pairs (1c) and is transmitted to the rotation axis (1e). The rotation axis is connected to the main axis (6) through a connecting ring (1d).

3. BASIC ALUMINIUM PROFILE
The basic aluminum profile (3) is appropriate and designed to house the internal mechanism (1), which according to claim 1, is actuated by the external mechanism (2). [{The basic housing aluminum profile (3) contains the internal mechanism (1) connected to the main axis (6) where the cord winders (7) are fixed, placed at the upper part of the double glazing profile (9) and secured with the use of the plastic side covers (4) of the basic housing aluminum profile (3).}]

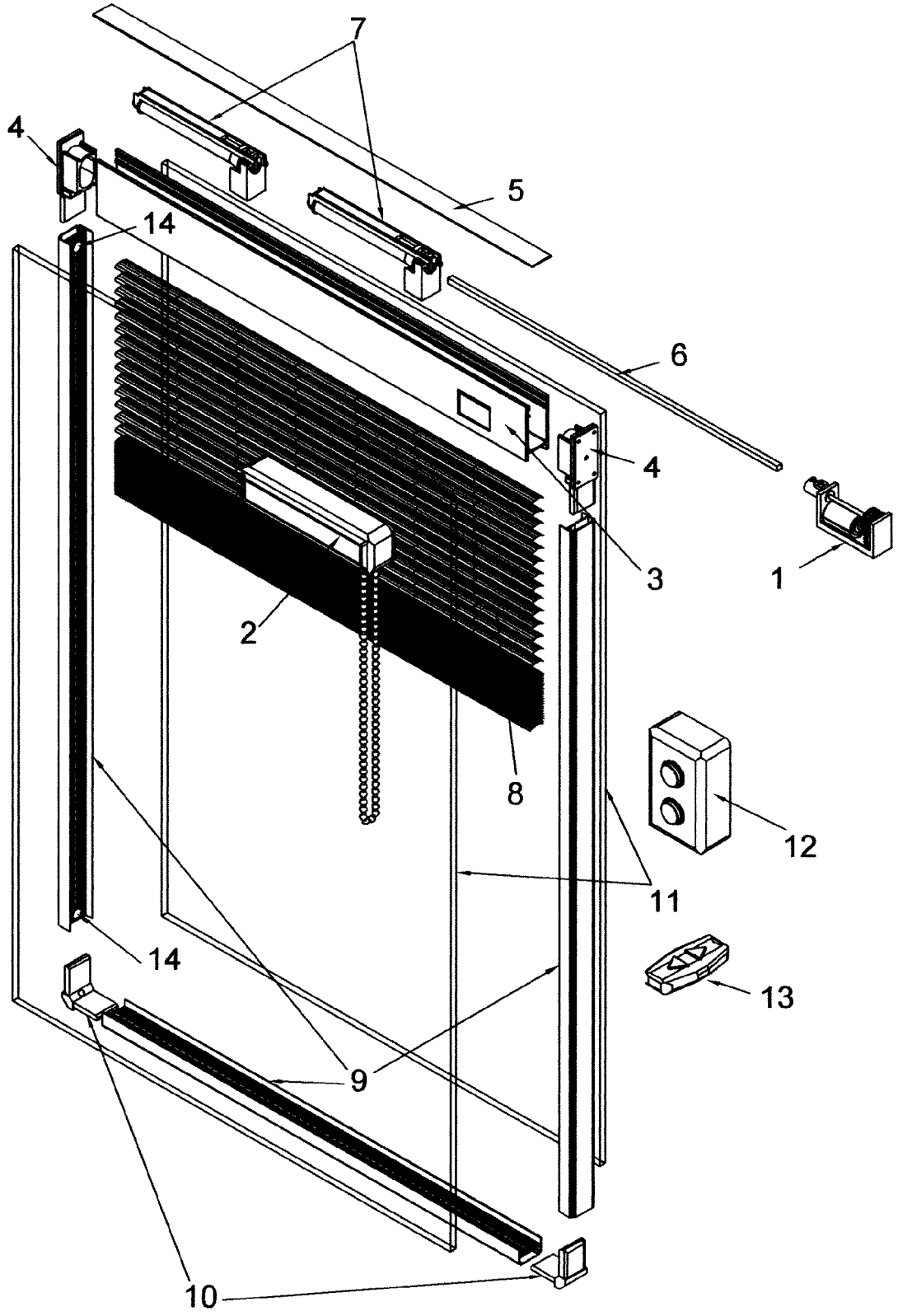

FIGURE 1

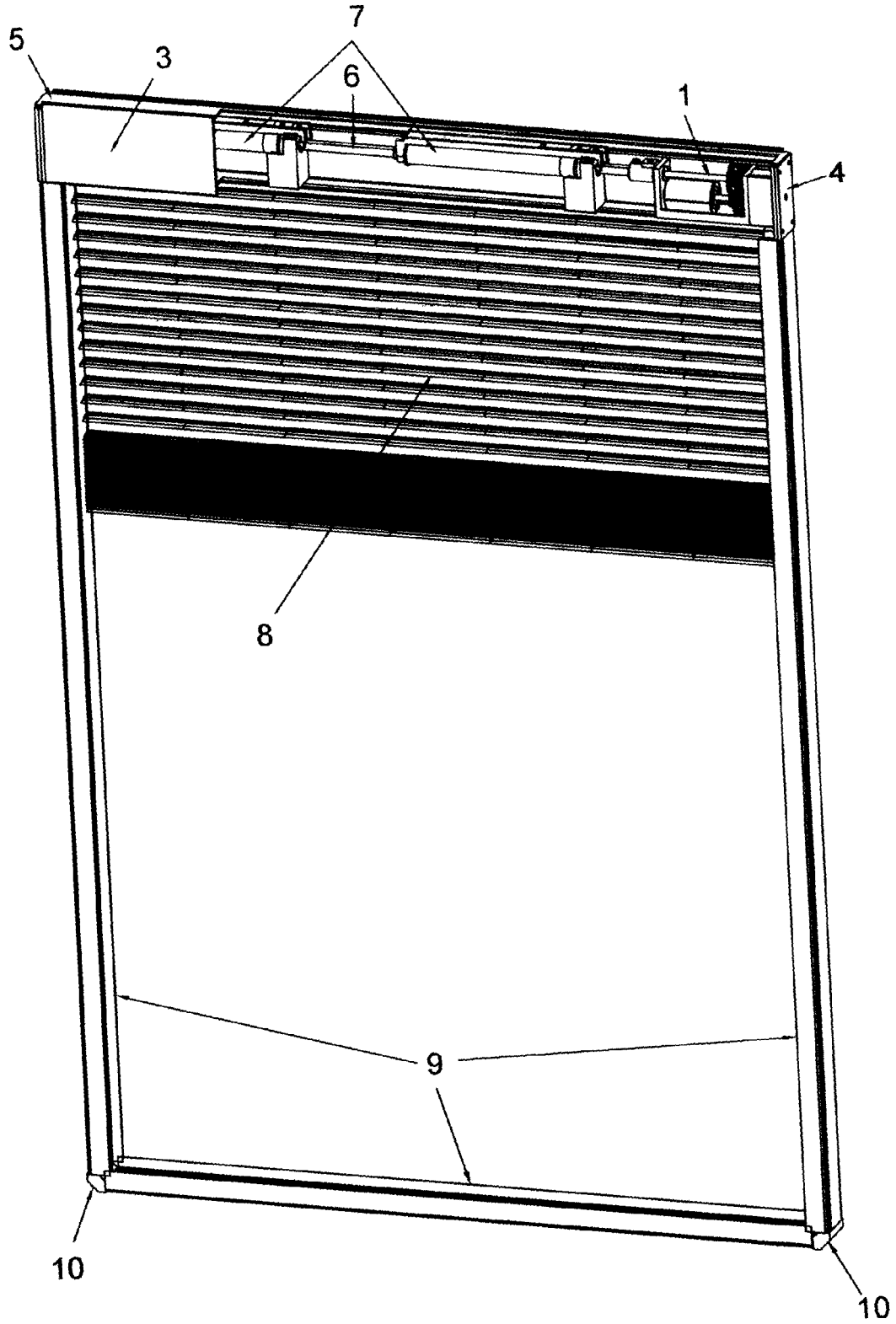

FIGURE 2

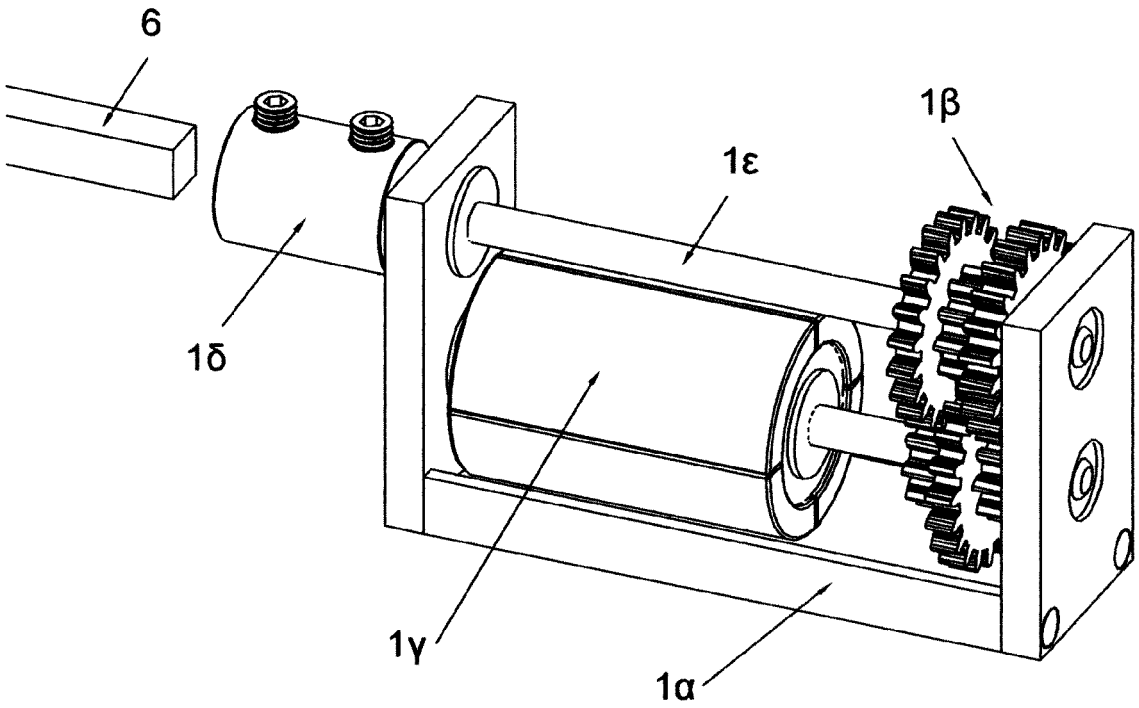

FIGURE 3

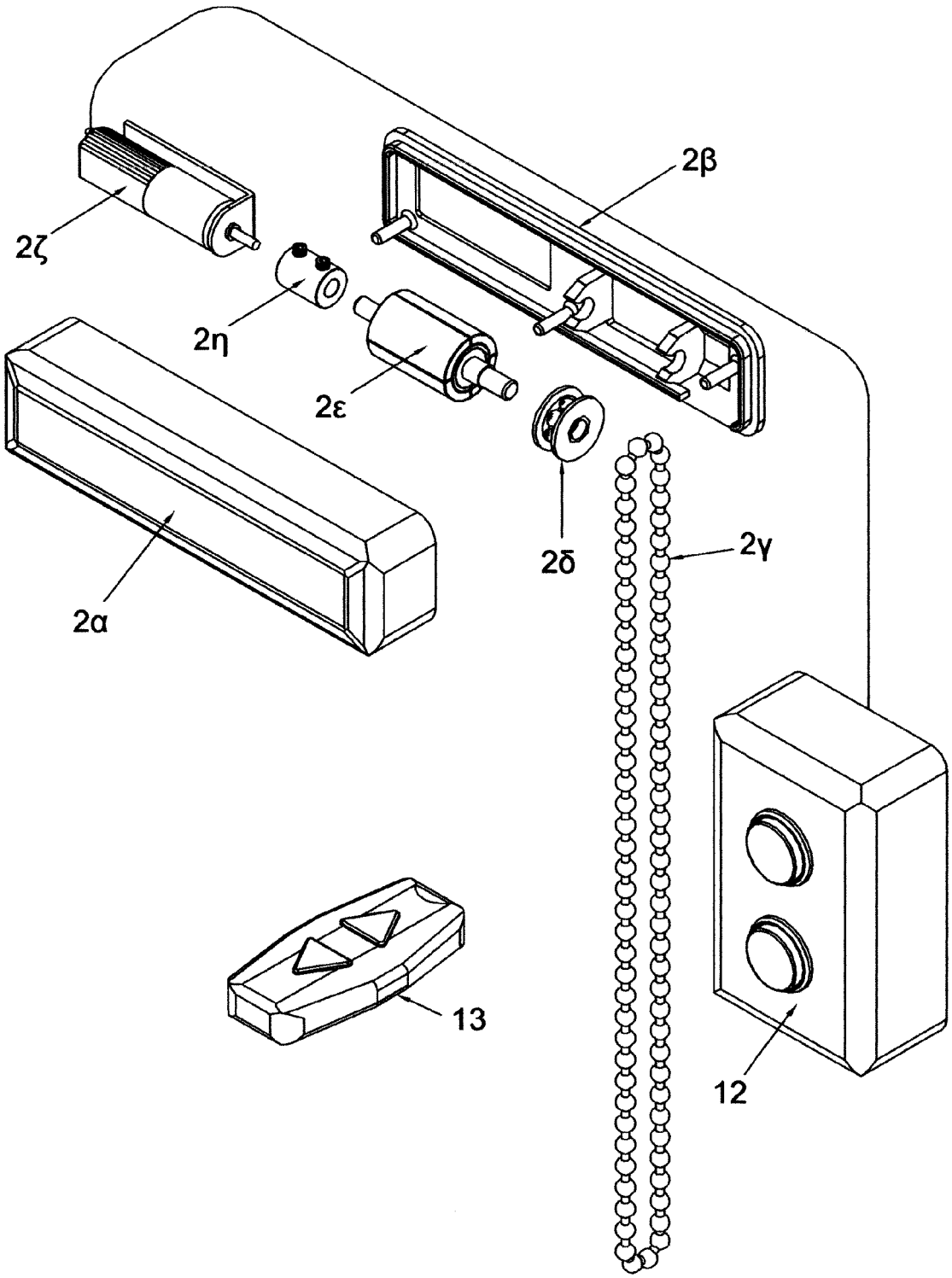

FIGURE 4

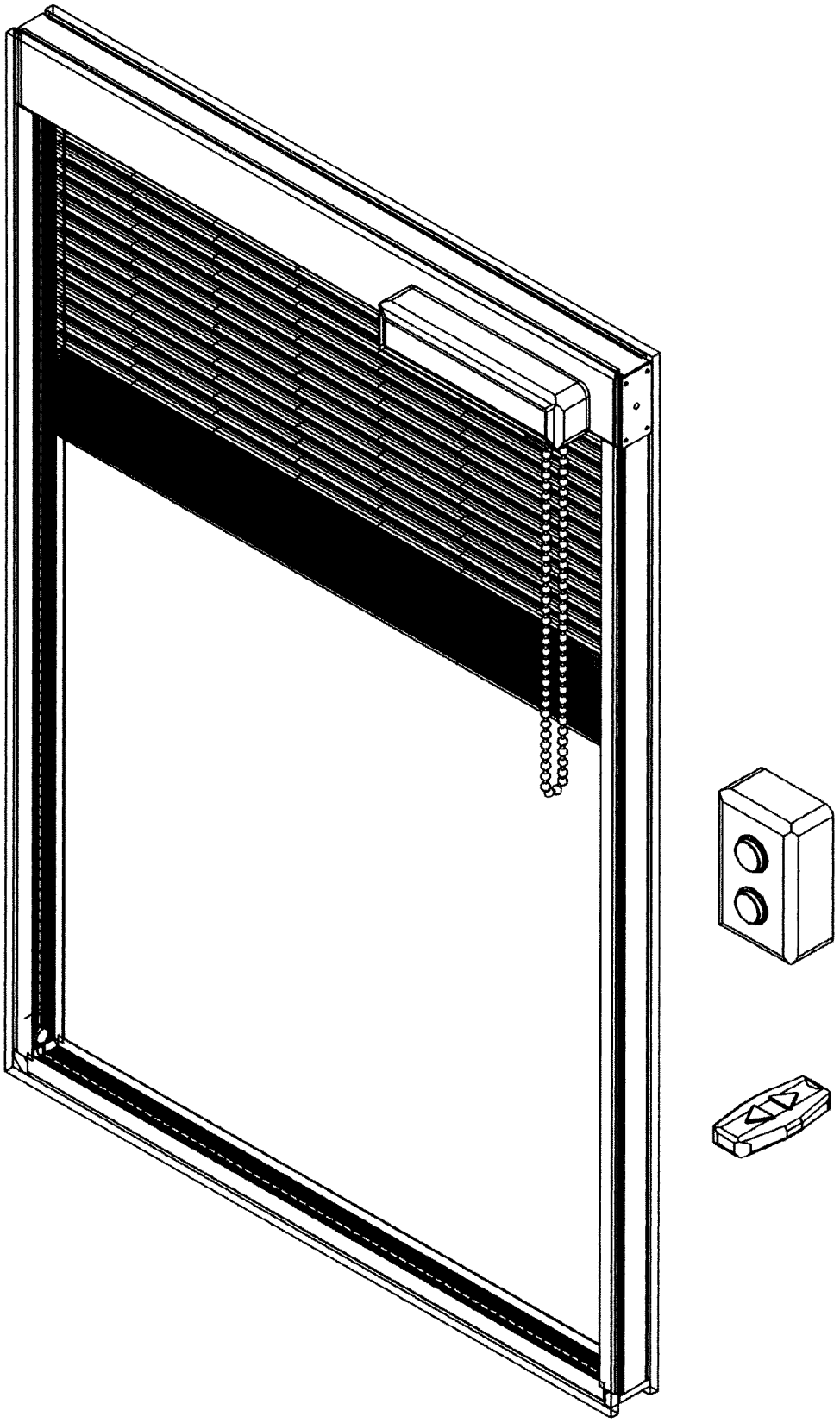

FIGURE 5

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EUROPEAN SEARCH REPORT

Application Number
EP 13 38 6024

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 Y	EP 1 936 103 A2 (SUN BELL S R L [IT]) 25 June 2008 (2008-06-25) * paragraph [0034]; claims 1,22,24,31; figures 1-4 *	1 2-4	INV. E06B9/264
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			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
Munich	10 December 2013	Kofoed, Peter

CATEGORY OF CITED DOCUMENTS

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EPO FORM 1503 03.82 (P04C01)

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 13 38 6024

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10-12-2013

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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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