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

(11) EP 1 936 103 B1

(12) **EUROPEAN PATENT SPECIFICATION**

(45) Date of publication and mention of the grant of the patent:
21.07.2010 Bulletin 2010/29

(51) Int Cl.:
E06B 9/32 *(2006.01)* ***E06B 9/68*** *(2006.01)*

(21) Application number: **07122510.6**

(22) Date of filing: **06.12.2007**

(54) **System for actuating a roller shutter with a portable control device containing the electric energy supply**

System zum Betätigen eines Rollladens mit einer tragbaren Steuereinheit mit elektrischer Energiequelle

Système pour l'actionnement d'un volet roulant avec une unité de commande portable comportant une source d'alimentation électrique

(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 MT NL PL PT RO SE SI SK TR

(30) Priority: **13.12.2006 IT BS20060219**

(43) Date of publication of application:
25.06.2008 Bulletin 2008/26

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Description

[0001] The present invention relates to the field of doors or windows having motor driven closing means such as for example Venetian blinds, plissé, roller blinds or roller shutter windows, and in particular it refers to an actuating system for such closing means.

[0002] Doors or windows provided with a motor apparatus for moving closing means such as the blades of a Venetian blind are essentially divided in two types, as regards the manufacture of the actuating means and the actuating mode.

[0003] A first type envisages including all the electrical and electronic devices that command and control the motor apparatus in an element of the door or window frame. Only an actuating device is fixed outside the door or window, typically consisting of at least two electrical contacts or switches, that the user must actuate to activate the motor control and command devices in the desired mode.

[0004] A second type envisages the use of a remote control for activating the motor control and command devices. In this case there is the advantage of remotely actuating the means for closing the door or window but it is necessary to include means for transmitting the command signal in the remote control and means for receiving said signal in the door or window. An example of this type of solution is disclosed in US 2006/0076113 A1.

[0005] In both cases, the command and control devices of the motor apparatus provided in the door or window frame must be connected to the mains to be powered. Since the motor apparatus operates at low voltage, a transformer should further be provided to reduce the mains voltage to the motor operating voltage.

[0006] In the practice, therefore, the electrical system of a room must be designed and modified so as to always be provided with a current outlet in the vicinity of a motor driven door or window.

[0007] In both types mentioned above, moreover, each motor apparatus is associated to its own command and control devices, all integrated in the door or window frame. In the presence of multiple window and door frames, these devices must therefore be multiplied by the number of motor apparatus used.

[0008] In the case of Venetian blinds with double glazing, the motor apparatus and the relevant electrical/electronic devices are located inside a sealed air space. If one of these elements undergoes failure, it is necessary to remove the entire blind and one is often forced to send it to the manufacturer for repair and reassembly.

[0009] In a former patent application IT BS 20050035 by the same applicant, the limits and the disadvantages mentioned above have been solved by a system for actuating a Venetian blind, a plissé, a roller blind, a roller shutter or similar means for closing a door or window, comprising:

[0010] - an electro-motor apparatus seated in a body or part of a frame of said door or window, without any electrical or electronic power and control device inside said body or frame part,

[0011] - an electrical plug element electrically connected to said electro-motor apparatus and fixed to the door or window in a position accessible by a user, and

[0012] - a command device comprising electrical supply means of the electro-motor apparatus and electronic means to control said apparatus, said command device being transportable by a user and having an electrical outlet element suitable for coupling with said plug element for electrically connecting said supply means and said electronic means for controlling the electro-motor apparatus.

[0013] WO 03/095781 discloses a portable power supply assembly capable of providing electrical power to an electric motor of a shutter assembly. The shutter assembly comprises an electrical power receiving port, preferably in the form of a wall-mounted plate or bracket connected to the electrical motor of the shutter assembly. The plate is preferably adapted so as to both mechanically and electrically receive the detachable body of the power supply assembly.

[0014] If, on the one end, such solutions allow obtaining clear advantages over the known actuating systems, on the other end it requires the user to make the electrical coupling between plug and outlet each time he/she must move the blind and keep such coupling for all the actuation time. In other words, the user must manually hold the control device while it is connected to the electrical outlet since such device is projecting from the outlet. Moreover, since the electrical outlet must contain the electrical contact suitable for receiving the control device plug, it has a non negligible thickness that could alter the aesthetic appearance of the frame.

[0015] Starting from such premises, the object of the present invention is to obviate the limits and disadvantages mentioned above and propose a system for actuating motor driven doors or windows even more comfortable to use and with very limited overall dimensions.
Such object is achieved with an actuating system according to claim 1.

[0016] The dependent claims describe preferred embodiments.

[0017] Besides the above advantages of the magnet coupling system of the invention, the actuating system described allows obtaining the following advantages.

[0018] The elements seated in the blind for its operation are minimised; in the practice, only the electro-motor apparatus is inserted in the blind while all the electronic control circuits thereof are external thereto. This is particularly advantageous in double glazing blinds wherein any failure of a component inside the sealed air space requires full disassembly of the blind and the intervention of skilled personnel.

[0019] The electronic and supply part is located in a usual box shaped container external to the blind and can be easily fixed in the event of a failure or replaced without intervening on the blind.

[0020] The electrical connection of the electro-motor

apparatus to the supply is greatly simplified compared to the current blinds, where electrical conductors to connect to the mains protrude from the blind. There is not the constraint of having to provide an outlet in the proximity of the motor driven blind.

[0021] The use of a control device with rechargeable batteries allows avoiding the use of heavy and bulky voltage transformers.

[0022] It is possible to use a single control device to control multiple electro-motor apparatus of different blinds. In other words, a considerable money and time saving is obtained since for each motor apparatus, the relevant electronic command and control circuits are not provided.

[0023] The blind therefore exhibits the known use comfort of a motor driven movement but is simpler and more expensive to make, reliable over time and in any case easy to maintain.

[0024] Further details and advantages of the actuating system according to the present invention will appear more clearly from the description of a preferred embodiment, made by way of an indicative non-limiting example with reference to the annexed drawings, wherein:

[0025] figure 1 shows an overall view of a Venetian blind and of a relevant control device according to the present invention;

[0026] figure 2 shows a perspective view of a Venetian blind without a glass locking frame;

[0027] figure 3 shows a view of a portion of a Venetian blind in a second embodiment thereof, wherein the actuating device is shown excessively enlarged;

[0028] figure 4 shows a cutaway view of a Venetian blind at the level of the electro-motor apparatus;

[0029] figure 5 shows the contact holder plate of the actuating system;

[0030] figure 6 shows the back side of the control device;

[0031] figure 7 shows the front side of the control device;

[0032] figure 8 shows a perspective exploded view of the contact holder plate; and

[0033] figure 9 shows a perspective exploded view of the control device.

[0034] In particular, the actuating system for actuating a Venetian blind 10 of the present invention is advantageously applicable to a Venetian blind 10 with double glazing, that is, a blind 10 wherein the adjustable blades 12 and the relevant moving means are arranged in a sealed air space delimited by two glasses 10'.

[0035] The invention in any case is applicable in the same way to other types of doors or windows, such as roller shutters, provided with a motor driven apparatus for moving the closing means of such doors or windows.

[0036] The system for actuating the Venetian blind 10 comprises an electro-motor apparatus 11 (Figure 4) suitable for moving in an automated manner the rise and the lowering of blades 12 of said Venetian blind 10. The electro-motor apparatus 11 is seated in portion of a frame 13 supporting blind 10. Preferably, the electro-motor apparatus 11 comprises a motor-reduction gear 14 coupled to a roller or shaft 15 for winding/unwinding ropes 12' for moving blades 12.

[0037] Motor-reduction gear 14 and shaft 15 are located in a seat 16 with horizontal extension obtained in a box or a top portion 17 of frame 13 of the blind 10.

[0038] According to a preferred embodiment, shaft 15 is associated to a mechanical stop device 18 suitable for stopping the movement of said shaft 15 when the blind 10 reaches a predetermined height position.

[0039] Seat 16 has no further electrical or electronic device for supplying 22 and controlling 20 the electro-motor apparatus 11.

[0040] A contact holder plate 19 is fixed to frame 13 of blind 10, or to one of glasses 10', in any case in a position comfortably accessible by a user, wherein at least two electrical contacts 19' electrically connected to the motor-reduction gear 14 are buried.

[0041] The contact holder plate 19 is suitable for electrically coupling to a control device 20 comprising electrical supply means 22 of the motor-reduction gear 14 and electronic control means 44 of said gear 14. The control device 20 is shaped as a usual remote control, that is, it is a device included in a box shaped container 26 separate from blind 10 and that can be carried by a user. The control device 20 is provided with electrical contacts 23 suitable for electrically coupling to the electrical contacts 19' of plate 19 for electrically connecting the supply means 22 and the electronic control means 44 to the electro-motor apparatus 11.

[0042] According to an advantageous embodiment, the contact holder plate 19 is glued to glass 10' (Figures 3, 4), screwed to frame 13 (Figure 1) or to a simple glass locking frame 50 removably coupled to the frame 13 (figure 2), according to the needs. Plate 19 is connected to the motor-reduction gear 14 by electrical conductors 24, for example shaped as a plate, which extends along an external element 25 of the blind frame 13 and which can advantageously be hidden by the glass locking frame 50, so as to be substantially hidden to sight.

[0043] In the case described herein of the blind 10 with double glazing 10', the electrical conductors 24. are associated to sealing means suitable for preventing any air passage between the inside of the air space and the external environment.

[0044] According to a general embodiment of the invention, the contact holder plate 19 and the control device 20 can be magnetically coupled to each other so as to obtain the electrical connection between the respective electrical contacts 19', 23. In other words, the matching between plate 19 and control device 20 that allows establishing an electrical connection between the respective electrical contacts 19', 23 is given by a magnetic field that attracts the control device 20 to the plate 19.

[0045] To this end, the contact holder plate 19 is provided with a magnet 29 suitable for attracting an element made of a ferromagnetic material 23 associated to the

control device 20.

[0046] According to an embodiment, the contact holder plate 19 is provided with two magnets 29 suitable for coupling with corresponding plates of ferromagnetic material associated to the control device 20 and acting as electrical contacts 23.

[0047] According to a preferred embodiment, each electrical contact 19' of plate 19 is placed in contact with a respective magnet 29 so as to make a single conductor element therewith. In other words, magnets 29 have the dual function of coupling means between the control device 20 and plate 19 and electrical conduction means between contacts 23 of the control device 20 and contacts 19' of plate 19. It should be noted that the presence of the electrical contacts 19' is suitable because it would be complicated to connect, for example by welding, the electrical conductors 24 directly to magnets 29.

[0048] Advantageously, moreover, the magnetic coupling is such as to overcome the weight force of the control device 20, which remains fixed to plate 19 as soon as it is moved near it, without the need of being manually supported by the user and without the use of further coupling means.

[0049] The ferromagnetic material of electrical contacts 23 for example is ferric phosphate.

[0050] According to a preferred embodiment, the contact holder plate 19 comprises a base 30 suitable for being fixed, for example by a two-faced sheet 31, to the glass 10' or to the frame 13 of the door or window. Two seats 32 are obtained in said base 30, in each there is seated an electrical contact 19' and a magnet 29 superimposed thereto. The electrical contacts 19' exhibit a laminar shape and are welded to conductors 24 that protrude from plate 19. Magnets 29 also exhibit a flat shape as a tablet. Plate 19 is completed by a cover 33 fixed to base 30, for example by screws 34. At the level of magnets 29, the cover 33 has respective windows 35 wherethrough the outer surface of magnets 29 protrudes, suitable for contacting plates 23 of the control device 20.

[0051] Plate 19 therefore has a very small thickness, for example in the range of few millimetres. Magnets 29 are almost buried in plate 19, that is, they do not considerably protrude from the front surface of the plate 19 itself.

[0052] Base 30 and cover 33 of plate 19 may also be made of plastic material or rubber, for example transparent polycarbonate, so as to hide as much as possible with the frame 13 or the glass 10'.

[0053] Also plates 23 of the control device 20 have a flat shape so as to not considerably protrude from the box shaped container 26 of the control device 20.

[0054] Advantageously, moreover, plates 23 have a contact surface sufficiently wide to allow the immediate centring and thus locking between control device 20 and plate 19. In other words, the user needs not be careful to the alignment between magnets 29 of plate 19 and plates 23 of the control device 20; instead, as the user approaches the control device 20 to plate 19, so that the side of the box shaped container 26 carrying plates 23 faces plate 19, the magnetic field force makes the two parts conjugate immediately in a correct manner.

[0055] According to a preferred embodiment, plates 23 are fixed to the box shaped container 26 of the control device 20 by contact screws 40. The contact screws 40 penetrate in said box shaped container 26 and are electrically connected to the power 22 and control means 44 of the motor apparatus 11. For example, said screws 40 are screwed to locking washers 41 that fasten the screws 40 themselves to a pair of electrical cables 42 that connect the electrical contacts 23, 40 to the supply 22 and control means 44 of the motor apparatus 11 provided into the box shaped container 26.

[0056] In one embodiment, the power supply means 22 comprise at least one electrical battery, preferably of the rechargeable type. To this end, the control device 20 is provided with an electrical plug 27 for the connection to a battery charger (not shown).

[0057] According to an advantageous embodiment, the electronic control means 44 comprise:

[0058] - means for controlling the rise and lowering of the blind 10, allowing the stop thereof in any position;

[0059] - means for controlling a slow movement of the Venetian blind 10, allowing the blade 12 rotation and thus the light adjustment;

[0060] - at least one circuit for acquiring the position and speed of the motor-reduction gear 14 and a circuit for detecting the current absorbed by said gear 14;

[0061] - means with self-learning function of the blind position according to the current absorbed by the electro-motor apparatus 11;

[0062] - means for calibrating the current absorbed by the electro-motor apparatus 11 according to the blind 10 weight and dimensions.

[0063] The means with self-learning function allow storing a travel end position subsequent to the detection of a current peak due to the activation of the mechanical stop device 18.

[0064] The circuit for detecting the current absorbed is provided for interrupting the supply to the electro-motor apparatus 11 when the absorbed current exceeds a predetermined threshold value.

[0065] Advantageously, the control device 20 comprises at least one electrical switch actuable by a user by a key 28, 28' or a button for activating/deactivating an electrical connection between the power supply means 22 and/or the electronic control means 44 of the control device 20 and the electro-motor gear 14.

[0066] For example, a key 28 may be provided for controlling the rise of blind 10 and a key 28' for controlling the lowering of the blind 10.

[0067] The control device 20 is further provided with light signalling devices 52 for indicating, for example, the correct movement of the blind 10 rising or lowering, or the status of battery.

[0068] It should be noted that advantageously, the actuating system with magnetic coupling according to the invention allows a user to press a blind rise 28 or lowering

28' key and thanks to the fact that the control device 20 remains autonomously connected to the contact holder plate 19, leaving the control device 20 while the blind 10 is moved, for example for controlling other blinds 10.

[0069] Once the blind 10 is actuated, the control device 20 can be disconnected from plate 19, but can also remain connected thereto.

Claims

1. System for actuating a Venetian blind (10), a plissé, a roller blind, a roller shutter or other similar means for closing a door or window, comprising:

   - an electro-motor apparatus (11) suitable for moving said Venetian blind (10), shutter or the like, said apparatus (11) being suitable to be located in a seat (16) formed in a body or part of a frame (13) of said door or window, said seat (16) being free from any electrical or electronic power and control device (22, 20),
   - a contact holder plate (19) suitable for being fixed to the glass (10') of the door or window in a position accessible by a user and comprising at least two electrical contacts (19') electrically connected to said electro-motor apparatus (11), and
   - a control device (20) comprising electrical supply means (22) of the electro-motor apparatus (11) and electronic control means (44) to control said apparatus (11) said control device (20) being transportable by a user and having at least two electrical contacts (23) suitable for coupling with the electrical contacts (19') of the contact holder plate (19) for electrically connecting said supply means (22) and said electronic means (44) for controlling the electro-motor apparatus (11),

   characterised in that the contact holder plate (19) is provided with two magnets (29), each electrical contact (19') of the contact holder plate (19) being placed in contact with a respective magnet (29) so as to make a single conductor element therewith, and **in that** the control device (20) comprises two elements (23) made of a ferromagnetic material suitable for being attracted by said magnets (29) and acting as the electrical contacts (23), in such a way the contact holder plate (19) and the control device (20) are suitable to be magnetically coupled to each other so as to obtain the electrical connection between the respective electrical contacts (19', 23).

2. System according to claim 1, wherein the contact holder plate (19) comprises a base (30) suitable for being fixed to the glass (10') or to the door or window frame (13) wherein two seats (32) are obtained, in each there is seated an electrical contact (19') and a magnet (29) superimposed thereto.

3. System according to claim 2, wherein the electrical contacts (19') have a laminar shape and are welded to respective conductor cables (24) protruding from the plate (19).

4. System according to claim 3, wherein the magnets (29) also have a flat shape as a tablet, so as to be substantially buried in the base (30) of the contact holder plate (19).

5. System according to claim 4, wherein the contact holder plate (19) is closed by a cover (33) wherein at the magnets (29) there are obtained respective windows (35) wherethrough the outer surface of the magnets (29) protrudes, suitable for contacting the plates (23) of the control device (20).

6. System according to any one of the previous claims, wherein the magnetic coupling between contact holder plate (19) and control device (20) is such as to overcome the weight force of said control device (20).

7. System according to any one of the previous claims, wherein the contact holder plate (19) is made of a plastic material or rubber, for example transparent polycarbonate.

8. System according to any one of the previous claims, wherein the electrical contacts (23) of the control device (20) are fixed to a box shaped container (26) of the control device (20) by contact screws (40) that penetrate in said container (26) and are electrically connected to the electrical supply (22) and control (44) means of the control device (20).

9. System according to any one of the previous claims, wherein said electro-motor apparatus (11) comprises a motor-reduction gear (14).

10. System according to claim 9, wherein said motor-reduction gear (14) is coupled to a roller or shaft (15) for winding/unwinding the Venetian blind (10), the roller shutter or the like.

11. System according to any one of the previous claims, wherein said electrical supply means (22) comprise at least one electrical battery, for example of the rechargeable type.

12. System according to any one of the previous claims, wherein the control device (20) comprises at least one electrical switch actuable by a user by a key or a button (28, 28') for activating/deactivating an electrical connection between the electrical supply

means (22) and/or the electronic control means (44) of the control device (20) and the electro-motor apparatus (11).

13. System according to any one of the previous claims, wherein said electronic control means (44) comprise means for actuating a movement in one direction and in the opposite direction of the blind (10), roller shutter or the like, allowing the stop thereof in any position.

14. System according to any one of the previous claims, wherein said electronic control means (44) comprise means for controlling a slow movement of the Venetian blind (10) roller shutter or the like, allowing the rotation and the adjustment of the light.

15. System according to any one of the previous claims, wherein said electronic control means (44) comprise at least one circuit for acquiring the position and the speed of the electro-motor apparatus (11) and a circuit for detecting the current absorbed by said apparatus (11).

16. System according to claim 15, wherein said circuit for detecting the current absorbed is provided for interrupting the supply to the electro-motor apparatus (11) when the absorbed current exceeds a predetermined threshold value.

17. System according to claim 10, wherein the shaft or roller (15) coupled to the electro-motor apparatus (11) is associated to a mechanical stop device (18) suitable for stopping the movement of said shaft (15) when the blind (10), roller shutter or the like reaches a predetermined position.

18. System according to claim 17, wherein said electronic control means (44) comprise means with self-learning function allowing storing a travel end position subsequent to the detection of a current peak due to the activation of the mechanical stop device (18).

19. System according to any one of the previous claims, wherein said electronic control means (44) comprise means for a calibration of the current absorbed by the electro-motor apparatus (11) based on the weight and the dimensions of the Venetian blind (10), roller shutter or the like.

20. Door or window having a Venetian blind (10), a roller shutter or similar movable means as closing means, comprising a system according to anyone of the previous claims for actuating the Venetian blind (10), roller shutter or similar movable means, wherein the electro-motor apparatus (11) is located in a seat (16) formed in a body or part of a frame (13) of said door or window, said seat (16) being free from any electrical or electronic power and control device (22, 20) inside said body or frame part, and wherein the contact holder plate (19) is fixed to the glass (10') or to the frame (13) of the door or window or to a glass locking frame (50) of the door or window, in a position accessible by a user.

21. Door or window according to claim 20, wherein the contact holder plate (19) is glued to the glass (10') or screwed to the frame (13) or to the glass locking frame (50) removably coupled to the frame (13).

22. Door or window according to claim 20 or 21, wherein the contact holder plate (19) is connected to the electro-motor apparatus (11) by electrical conductors (24), extending along an external element (25) of the door or window frame (13) and hidden by the glass locking frame (50) so as to be substantially hidden to sight.

Patentansprüche

1. System zum Betätigen einer Jalousie (10), eines Plissés, eines Springrollos, eines Rollladens bzw. Rolltors oder anderen ähnlichen Mitteln zum Schließen bzw. Verschließen einer Tür oder eines Fensters, umfassend:

- eine Elektromotorvorrichtung (11), die geeignet ist, die Jalousie (10), den Laden bzw. das Tor oder dergleichen zu bewegen, wobei die Vorrichtung (11) geeignet ist, in einem Sitz (16) angeordnet zu sein, der in einem Körper oder Teil eines Rahmens (13) der Tür oder des Fensters gebildet ist, wobei der Sitz (16) frei von jeglicher elektrischer oder elektronischer Leistungs- und Steuer- bzw. Regelvorrichtung (22, 20) ist,
- eine Kontakthalterplatte (19), die geeignet ist, an dem Glas (10') der Tür oder des Fensters in einer Position fixiert bzw. befestigt zu werden, die für einen Benutzer zugänglich ist, und umfassend zumindest zwei elektrische Kontakte (19'), die elektrisch mit der Elektromotorvorrichtung (11) verbunden sind, und
- einer Steuer- bzw. Regeleinrichtung (20), umfassend elektrische Versor-gungsmittel (22) der Elektromotorvorrichtung (11) und elektronische Steuer- bzw. Regelmittel (44), um die Vorrichtung (11) zu steuern bzw. zu regeln, wobei die Steuer- bzw. Regeleinrichtung (20) durch einen Benutzer trans-portiert ist und zumindest zwei elektrische Kontakte (23) aufweist, die ge-eignet sind, mit den elektrischen Kontakten (19') der Kontakthalterplatte (19) zu koppeln, um die Versorgungsmittel (22) und die elektronischen Mit-

tel (44) elektrisch zu verbinden, um die Elektromotorvorrichtung (11) zu steuern bzw. zu regeln,

dadurch gekennzeichnet, dass die Kontakthalterplatte (19) mit zwei Magneten (29) versehen ist, wobei jeder elektrische Kontakt (19') der Kontakthalterplatte (19) mit einem jeweiligen Magneten (29) in Kontakt platziert ist, um ein einzelnes Leiterelement mit diesem zu bilden, und **dadurch**, dass die Steuer- bzw. Regeleinrichtung (20) zwei Elemente (23) umfasst, die aus einem ferromagnetischen Material bestehen, das geeignet ist, von den Magneten (29) angezogen zu werden und als die elektrischen Kontakte (23) zu wirken, wobei die Kontakthalterplatte (19) und die Steuer- bzw. Regeleinrichtung (20) auf diese Weise geeignet sind, magnetisch miteinander gekoppelt zu werden, um die elektrische Verbindung zwischen den jeweiligen elektrischen Kontakten (19', 23) zu erzielen bzw. herzustellen.

2. System nach Anspruch 1, wobei die Kontakthalterplatte (19) eine Basis (30) umfasst, die geeignet ist, an dem Glas (10') oder der Tür oder dem Fensterrahmen (13) fixiert bzw. befestigt zu werden, wobei zwei Sitze (32) erhalten werden, in denen jeweils ein elektrischer Kontakt (19') und ein diesem überlagerter Magnet (29) platziert sind.

3. System nach Anspruch 2, wobei die elektrischen Kontakte (19') eine laminare Form aufweisen und an jeweilige Leiterkabel (24) geschweißt sind, die von der Platte (19) vorstehen.

4. System nach Anspruch 3, wobei die Magneten (29) zudem eine flache Form wie ein Tablett aufweisen, um im Wesentlichen in der Basis (30) der Kontakthalterplatte (19) eingegraben zu sein.

5. System nach Anspruch 4, wobei die Kontakthalterplatte (19) durch eine Ab-deckung (33) verschlossen ist, wobei an den Magneten (29) jeweilige Fenster (35) erhalten werden, durch welche die äußere Fläche bzw. Oberfläche der Magneten (29) vorsteht, geeignet, die Platten (23) der Steuer- bzw. Regeleinrichtung (20) zu kontaktieren.

6. System nach einem der vorhergehenden Ansprüche, wobei die Magnetkopplung zwischen der Kontakthalterplatte (19) und der Steuer- bzw. Regeleinrichtung (20) so ist, um die Gewichtskraft der Steuer- bzw. Regeleinrichtung (20) zu überwinden.

7. System nach einem der vorhergehenden Ansprüche, wobei die Kontakthalter-p latte (19) aus Kunststoffmaterial oder Gummi, beispielsweise transparentem Polycarbonat besteht.

8. System nach einem der vorhergehenden Ansprüche, wobei die elektrischen Kontakte (23) der Steuer- bzw. Regeleinrichtung (20) an einem kastenförmigen Behälter (26) der Steuer- bzw. Regeleinrichtung (20) durch Kontaktschrauben (40) fixiert bzw. befestigt sind, die in den Behälter (26) penetrieren und elektrisch mit der elektrischen Versorgung (22) und Steuer- bzw. Regelmitteln (44) der Steuer- bzw. Regeleinrichtung (20) verbunden sind.

9. System nach einem der vorhergehenden Ansprüche, wobei die Elektromotor-vorrichtung (11) ein Motoruntersetzungsgetriebe (14) umfasst.

10. System nach Anspruch 9, wobei das Motoruntersetzungsgetriebe (14) mit einer Rolle oder Welle (15) gekoppelt ist, um die Jalousie (10), den Rollladen bzw. das Rolltor oder dergleichen hochzurollen/runterzurollen.

11. System nach einem der vorhergehenden Ansprüche, wobei die elektrischen Versorgungsmittel (22) zumindest eine elektrische Batterie, beispielsweise der wiederaufladbaren Art umfassen.

12. System nach einem der vorhergehenden Ansprüche, wobei die Steuer- bzw. Regeleinrichtung (20) zumindest einen elektrischen Schalter umfasst, der von einem Benutzer durch eine Taste oder Knopf (28, 28') betätigbar ist, um eine elektrische Verbindung zwischen den elektrischen Versorgungsmitteln (22) und/oder den elektronischen Steuer- bzw. Regelmitteln (44) der Steuer- bzw. Regeleinrichtung (20) und der Elektromotorvorrichtung (11) zu aktivieren/deaktivieren.

13. System nach einem der vorhergehenden Ansprüche, wobei die elektronischen Steuer- bzw. Regelmittel (44) Mittel zum Betätigen einer Bewegung in einer Richtung und in der entgegengesetzten Richtung der Jalousie (10), des Roll-ladens bzw. Rolltors oder dergleichen umfassen, die das Stoppen derselben in jeder Position erlauben.

14. System nach einem der vorhergehenden Ansprüche, wobei die elektronischen Steuer- bzw. Regelmittel (44) Mittel zum Steuern bzw. Regeln einer langsamen Bewegung der Jalousie (10), des Rollladens bzw. Rolltors oder dergleichen umfassen, die das Drehen und Einstellen des Lichts erlauben.

15. System nach einem der vorhergehenden Ansprüche, wobei die elektronischen Steuer- bzw. Regelmittel (44) zumindest eine Schaltung zum Erlangen der Position und der Geschwindigkeit der Elektromotorvorrichtung (11) und eine Schaltung zum Detektieren des durch die Vorrichtung (11) absorbierten Stroms umfassen.

16. System nach Anspruch 15, wobei die Schaltung zum Detektieren des absor-bierten Stroms vorgesehen ist, um die Versorgung der Elektromotorvorrichtung (11) zu unterbrechen, wenn der absorbierte Strom einen vorbestimmten Schwellenwert überschreitet.

17. System nach Anspruch 10, wobei die Welle oder Rolle (15), die mit der Elekt-romotorvorrichtung (11) gekoppelt ist, einer mechanischen Stoppeinrichtung (18) zugeordnet ist, die geeignet ist, die Bewegung der Welle (15) zu stoppen, wenn die Jalousie (10), der Rolladen bzw. Rolltor oder dergleichen eine vorbestimmte Position erreicht.

18. System nach Anspruch 17, wobei die elektronischen Steuer- bzw. Regelmittel (44) Mittel mit Selbstlernfunktion umfassen, die das Speichern einer Bewegungsendposition im Anschluss an das Detektieren einer Stromspitze auf Grund der Aktivierung der mechanischen Stoppeinrichtung (18) erlauben.

19. System nach einem der vorhergehenden Ansprüche, wobei die elektronischen Steuer- bzw. Regelmittel (44) Mittel für eine Kalibrierung des von der Elektromotorvorrichtung (11) absorbierten Stroms basierend auf dem Gewicht und den Abmessungen der Jalousie (10), des Rollladens bzw. Rolltors oder dergleichen umfassen.

20. Tür oder Fenster mit einer Jalousie (10), einem Rollladen bzw. Rolltor oder ähnlichen beweglichen bzw. bewegbaren Mitteln als Schließmitteln, umfassend ein System nach einem der vorhergehenden Ansprüche zum Betätigen der Jalousie (10), des Rollladens bzw. Rolltors oder ähnlicher beweglicher bzw. bewegbarer Mittel, wobei die Vorrichtung (11) in einem Sitz (16) angeordnet ist, der in einem Körper oder Teil eines Rahmens (13) der Tür oder des Fensters gebildet ist, wobei der Sitz (16) frei von jeglicher elektrischer oder elektronischer Leistungs- und Steuer- bzw. Regelvorrichtung (22, 20) im Inneren des Körpers oder Rahmenteils ist, und wobei die Kontakthalterplatte (19) an dem Glas (10') oder an dem Rahmen (13) der Tür oder des Fensters oder an einem Glasverriegelungsrahmen (50) der Tür oder des Fensters in einer Position fixiert bzw. befestigt ist, die für einen Benutzer zugänglich ist.

21. Tür oder Fenster nach Anspruch 20, wobei die Kontakthalterplatte (19) an das Glas (10') geklebt oder an den Rahmen (13) oder den Glasverriegelungsrahmen (50) geschraubt ist, der entfernbar mit dem Rahmen (13) gekoppelt ist.

22. Tür oder Fenster nach Anspruch 20 oder 21, wobei die Kontakthalterplatte (19) mit der Elektromotorvorrichtung (11) durch elektrische Leiter (24) verbunden ist, die sich entlang eines externen Elements (25) der Tür oder des Fensterrahmens (13) erstrecken und durch die Glasverriegelungsrahmen (50) verborgen sind, um im Wesentlichen dem Blick verborgen zu sein.

Revendications

1. Système pour actionner un store vénitien (10), un store plissé, un store rideau, un volet roulant ou d'autres moyens similaires pour fermer une porte ou une fenêtre, comprenant :

- un appareil à moteur électrique (11) approprié pour déplacer ledit store vénitien (10), volet ou analogue, ledit appareil (11) étant approprié pour être placé dans un siège (16) formé dans un corps ou une partie d'un châssis (13) de ladite porte ou fenêtre, ledit siège (16) étant exempt de tout dispositif d'alimentation et de commande électrique ou électronique (22, 20),
- une plaque porte-contact (19) appropriée pour être fixée au verre (10') de la porte ou de la fenêtre dans une position accessible à un utilisateur et comprenant au moins deux contacts électriques (19') connectés électriquement audit appareil à moteur électrique (11), et
- un dispositif de commande (20) comprenant des moyens d'alimentation électriques (22) de l'appareil à moteur électrique (11) et des moyens de commande électroniques (44) pour commander ledit appareil (11), ledit dispositif de commande (20) pouvant être transporté par un utilisateur et ayant au moins deux contacts électriques (23) appropriés pour un couplage avec les contacts électriques (19') de la plaque porte-contact (19) afin de connecter électriquement lesdits moyens d'alimentation (22) et lesdits moyens électroniques (44) pour commander l'appareil à moteur électrique (11),

caractérisé en ce que la plaque porte-contact (19) est munie de deux aimants (29), chaque contact électrique (19') de la plaque porte-contact (19) étant placé en contact avec un aimant respectif (29) afin de former un seul élément conducteur avec celui-ci et **en ce que** le dispositif de commande (20) comprend deux éléments (23) fabriqués en matériau ferromagnétique appropriés pour être attirés par lesdits aimants (29) et agissant comme les contacts électriques (23), de sorte que la plaque porte-contact (19) et le dispositif de commande (20) soient appropriés pour être couplés magnétiquement l'un avec l'autre afin d'obtenir la connexion électrique entre les contacts électriques respectifs (19', 23).

2. Système selon la revendication 1, dans lequel la plaque porte-contact (19) comprend une base (30) ap-

propriée pour être fixée sur le verre (10') ou sur le châssis de la porte ou de la fenêtre (13), dans laquelle on obtient deux sièges (32) dans chacun desquels est logé un contact électrique (19') avec un aimant (29) qui lui est superposé.

3. Système selon la revendication 2, dans lequel les contacts électriques (19') ont une forme laminaire et sont soudés à des câbles conducteurs respectifs (24) faisant saillie de la plaque (19).

4. Système selon la revendication 3, dans lequel les aimants (29) ont également une forme aplatie comme un comprimé de manière à être sensiblement noyés dans la base (30) de la plaque porte-contact (19).

5. Système selon la revendication 4, dans lequel la plaque porte-contact (19) est fermée par un couvercle (33), dans lequel il se présente au niveau des aimants (29) des fenêtres respectives (35) à travers lesquelles la surface externe des aimants (29) fait saillie, ce qui s'avère approprié pour la mettre en contact avec les plaques (23) du dispositif de commande (20).

6. Système selon l'une quelconque des revendications précédentes, dans lequel le couplage magnétique entre la plaque porte-contact (19) et le dispositif de commande (20) est conçu pour pallier la force pondérale dudit dispositif de commande (20).

7. Système selon l'une quelconque des revendications précédentes, dans lequel la plaque porte-contact (19) est fabriquée en matériau plastique ou en caoutchouc, par exemple en polycarbonate transparent.

8. Système selon l'une quelconque des revendications précédentes, dans lequel les contacts électriques (23) du dispositif de commande (20) sont fixés à un récipient en forme de boîte (26) du dispositif de commande (20) par des vis de contact (40) qui pénètrent dans ledit récipient (26) et sont connectés électriquement aux moyens d'alimentation électrique (22) et de commande (44) du dispositif de commande (20).

9. Système selon l'une quelconque des revendications précédentes, dans lequel ledit appareil à moteur électrique (11) comprend un moteur à engrenage réducteur (14).

10. Système selon la revendication 9, dans lequel ledit moteur à engrenage réducteur (14) est couplé à un rouleau ou à un arbre (15) pour enrouler/dérouler le store vénitien (10), le volet roulant ou analogue.

11. Système selon l'une quelconque des revendications précédentes, dans lequel lesdits moyens d'alimentation électrique (22) comprennent au moins une batterie électrique, par exemple du type rechargeable.

12. Système selon l'une quelconque des revendications précédentes, dans lequel le dispositif de commande (20) comprend au moins un commutateur électrique pouvant être actionné par un utilisateur à l'aide d'une touche ou d'un bouton (28, 28') pour activer/désactiver une connexion électrique entre les moyens d'alimentation électriques (22) et/ou les moyens de commande électroniques (44) du dispositif de commande (2 0) et 1 ' appareil à moteur électrique (11).

13. Système selon l'une quelconque des revendications précédentes, dans lequel lesdits moyens de commande électroniques (44) comprennent des moyens pour assurer un mouvement dans un sens et dans le sens opposé du store (10), du volet roulant ou analogue, permettant son arrêt dans n'importe quelle position.

14. Système selon l'une quelconque des revendications précédentes, dans lequel lesdits moyens de commande électroniques (44) comprennent des moyens pour commander un mouvement lent du store vénitien (10), du volet roulant ou analogue, permettant la rotation et l'ajustement de la lumière.

15. Système selon l'une quelconque des revendications précédentes, dans lequel lesdits moyens de commande électroniques (44) comprennent au moins un circuit pour acquérir la position et la vitesse de l'appareil à moteur électrique (11) et un circuit pour détecter le courant absorbé par ledit appareil (11).

16. Système selon la revendication 15, dans lequel ledit circuit pour détecter le courant absorbé est fourni pour interrompre l'alimentation de l'appareil à moteur électrique (11) lorsque le courant absorbé dépasse une valeur de seuil prédéterminée.

17. Système selon la revendication 10, dans lequel l'arbre ou le rouleau (15) couplé à l'appareil à moteur électrique (11) est associé à un dispositif d'arrêt mécanique (18) approprié pour arrêter le mouvement dudit arbre (15) lorsque le store (10), le volet roulant ou analogue atteint une position prédéterminée.

18. Système selon la revendication 17, dans lequel lesdits moyens de commande électroniques (44) comprennent des moyens avec une fonction d'auto-apprentissage permettant d'enregistrer une position de fin de déplacement à la suite de la détection d'un pic de courant dû à l'activation du dispositif d'arrêt mécanique (18).

19. Système selon l'une quelconque des revendications

précédentes, dans lequel lesdits moyens de commande électroniques (44) comprennent des moyens pour l'étalonnage du courant absorbé par l'appareil à moteur électrique (11) en se basant sur le poids et les dimensions du store vénitien (10), du volet roulant ou analogue.

20. Porte ou fenêtre ayant un store vénitien (10), un volet roulant ou un moyen mobile similaire, tel qu'un moyen de fermeture, comprenant un système selon l'une quelconque des revendications précédentes pour actionner le store vénitien (10), le volet roulant ou un moyen mobile similaire, dans laquelle l'appareil à moteur électrique (11) est placé dans un siège (16) formé dans un corps ou une partie d'un châssis (13) de ladite porte ou fenêtre, ledit siège (16) étant exempt de tout dispositif d'alimentation et de commande électrique ou électronique (22, 20) à l'intérieur dudit corps ou de ladite partie de châssis, et dans laquelle la plaque porte-contact (19) est fixée au verre (10') ou au châssis (13) de la porte ou de la fenêtre ou à un châssis de verrouillage de verre (50) de la porte ou de la fenêtre, dans une position accessible à un utilisateur.

21. Porte ou fenêtre selon la revendication 20, dans laquelle la plaque porte-contact (19) est collée au verre (10') ou vissée sur le châssis (13) ou sur le châssis de verrouillage de verre (50) couplé de manière amovible au châssis (13).

22. Porte ou fenêtre selon la revendication 20 ou 21, dans laquelle la plaque porte-contact (19) est connectée à l'appareil à moteur électrique (11) par des conducteurs électriques (24), s'étendant le long d'un élément externe (25) du châssis de porte ou de fenêtre (13) et cachés par le châssis de verrouillage de verre (50) de manière à être entièrement dérobé au regard.

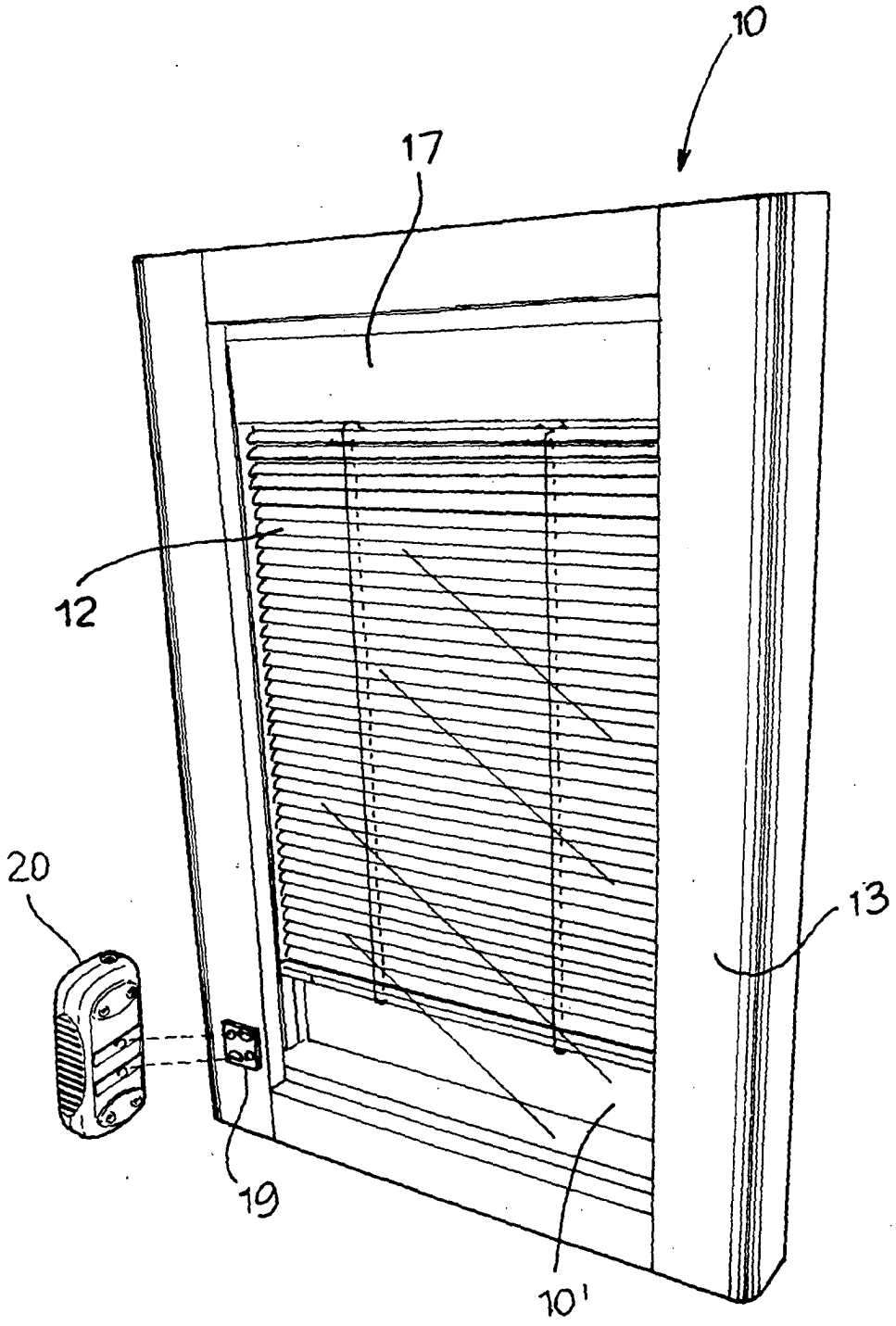


Fig. 1

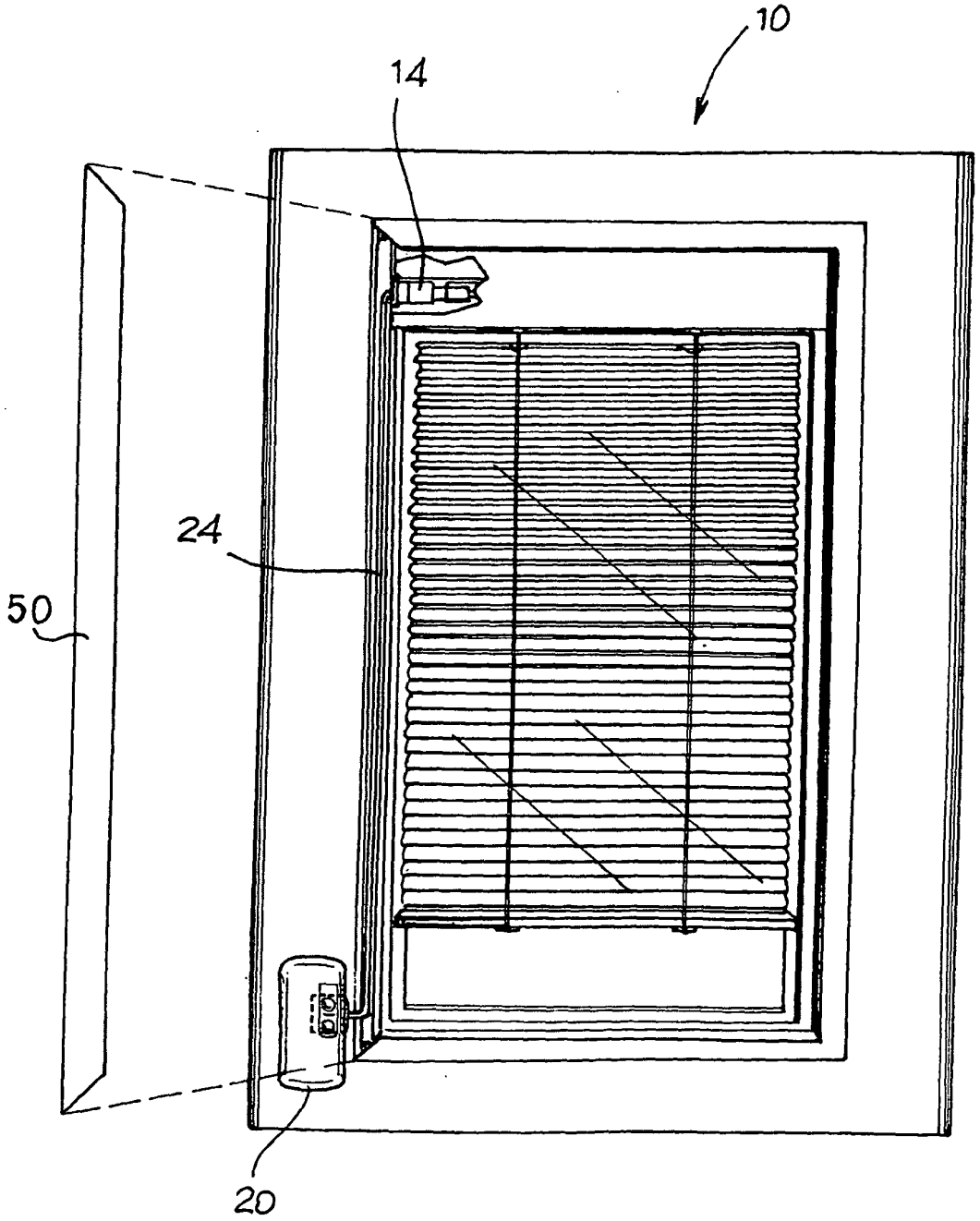


Fig. 2

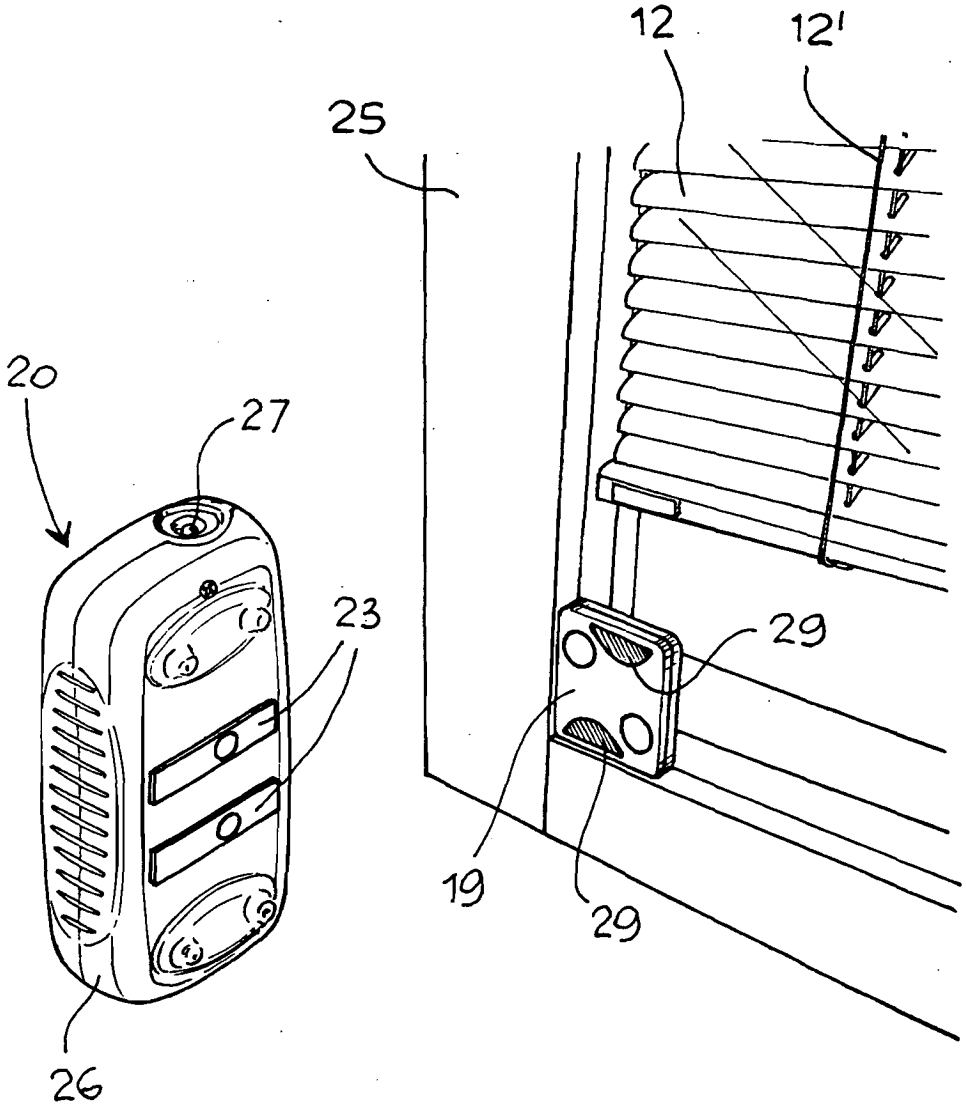
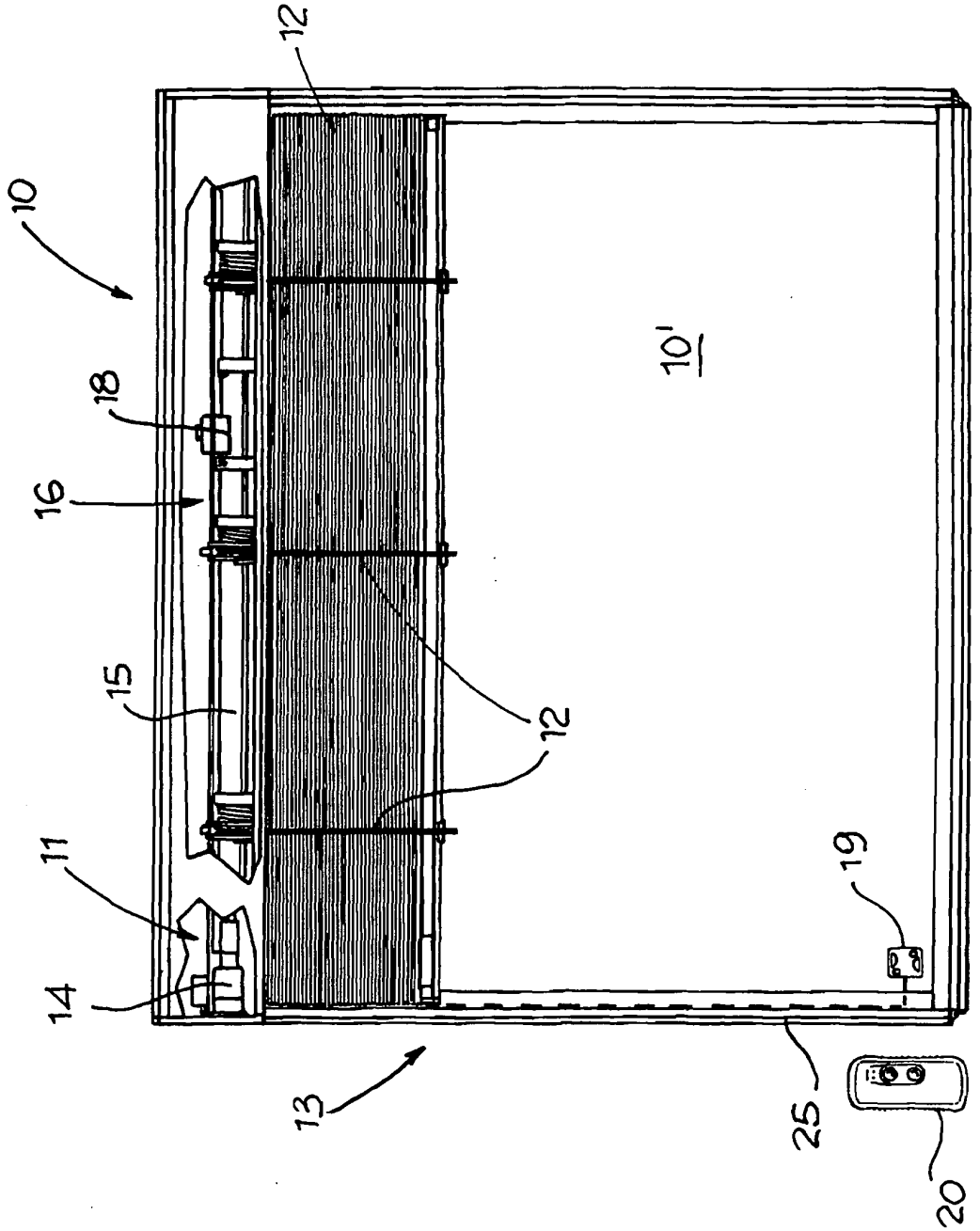


Fig.3

Fig. 4



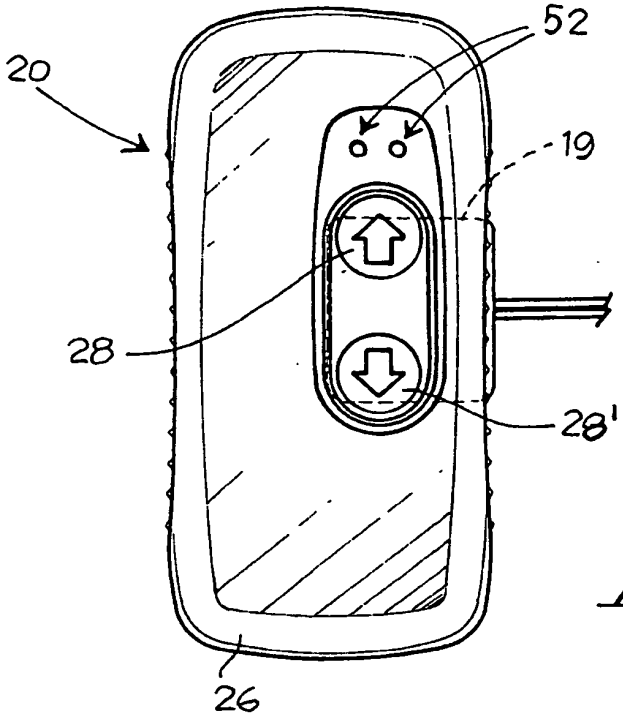


Fig.7

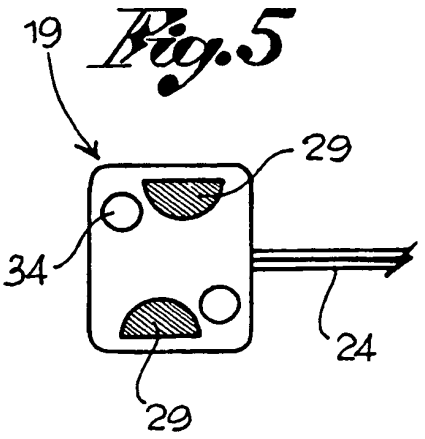


Fig.5

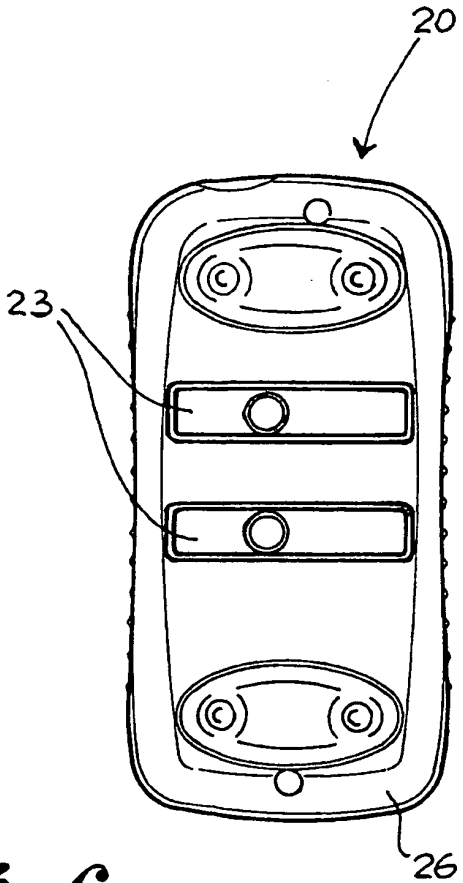


Fig.6

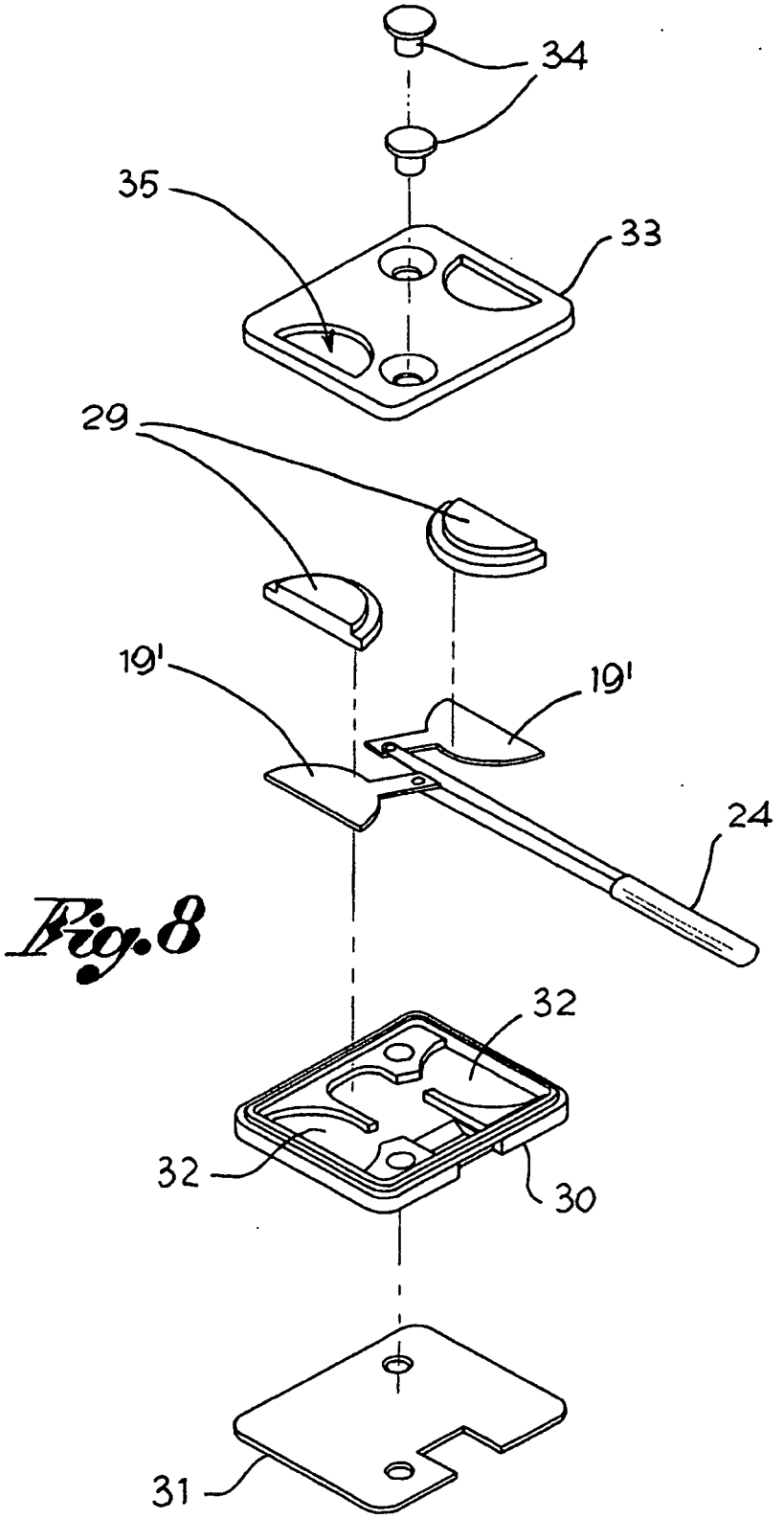


Fig.8

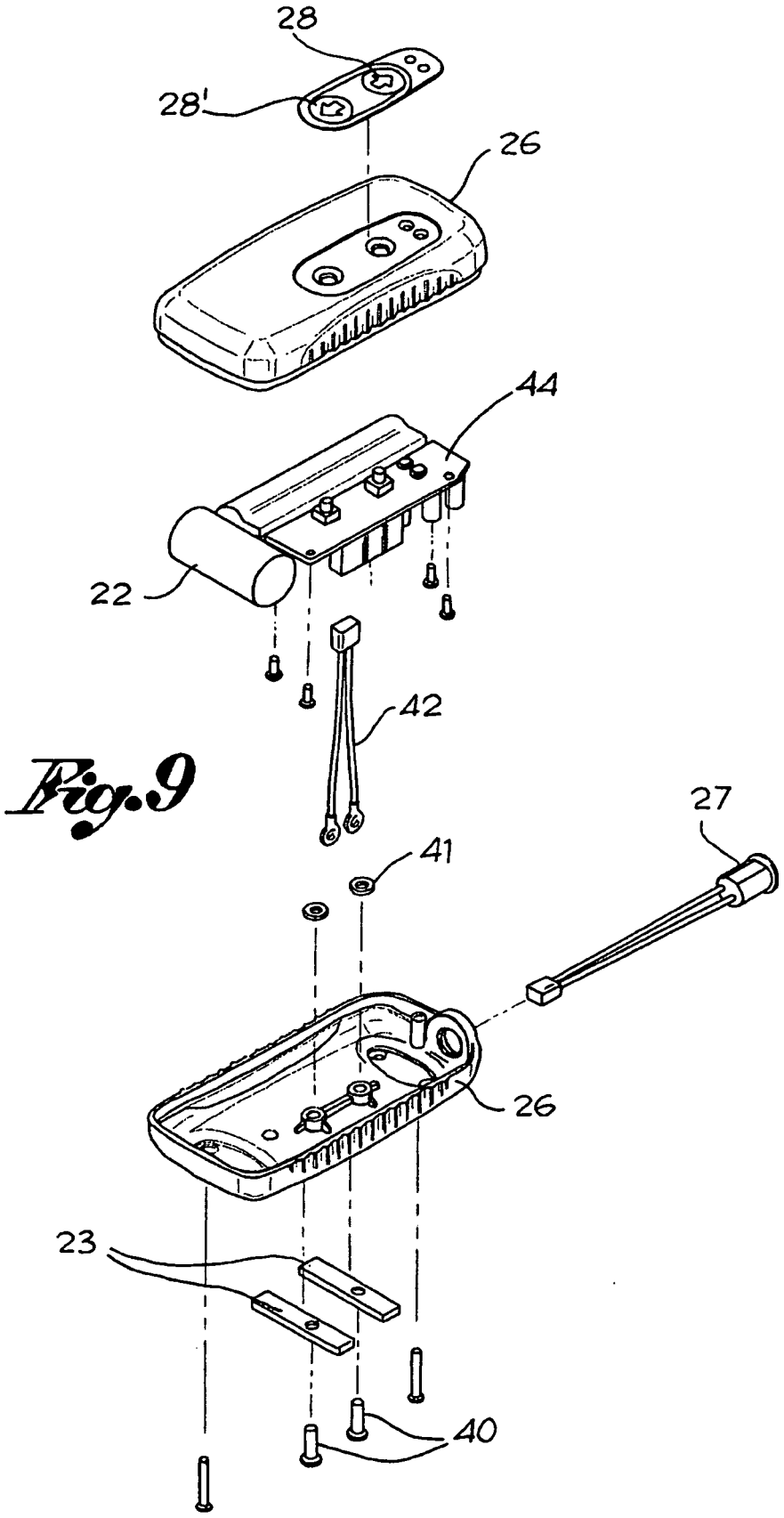


Fig.9

REFERENCES CITED IN THE DESCRIPTION

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