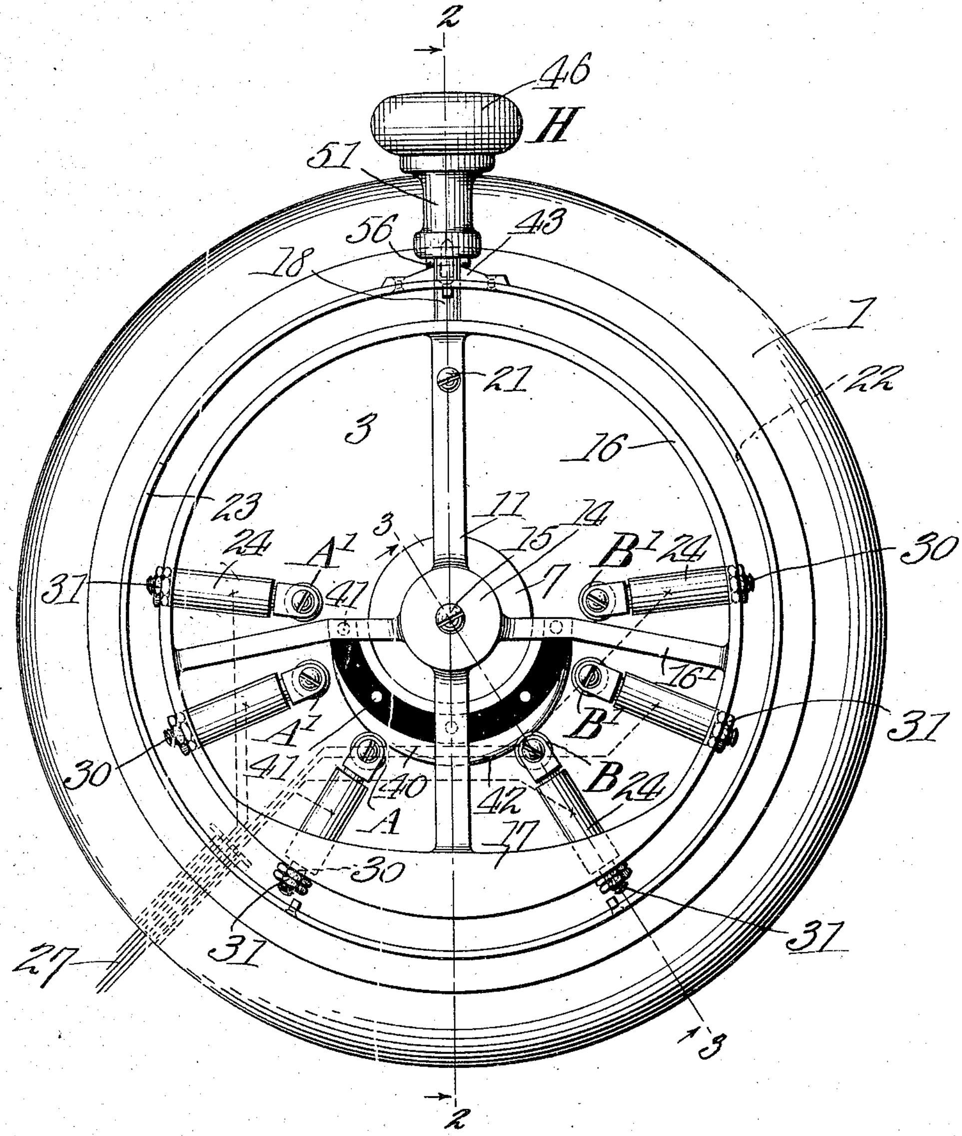
J. A. MOORE.
ELECTRIC CONTROLLER.
APPLICATION FILED APR. 10, 1912.

1,043,340.

Patented Nov. 5, 1912.

2 SHEETS—SHEET 1.

Fig. 1.



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2 SHEETS—SHEET 2.

Fig. 2.

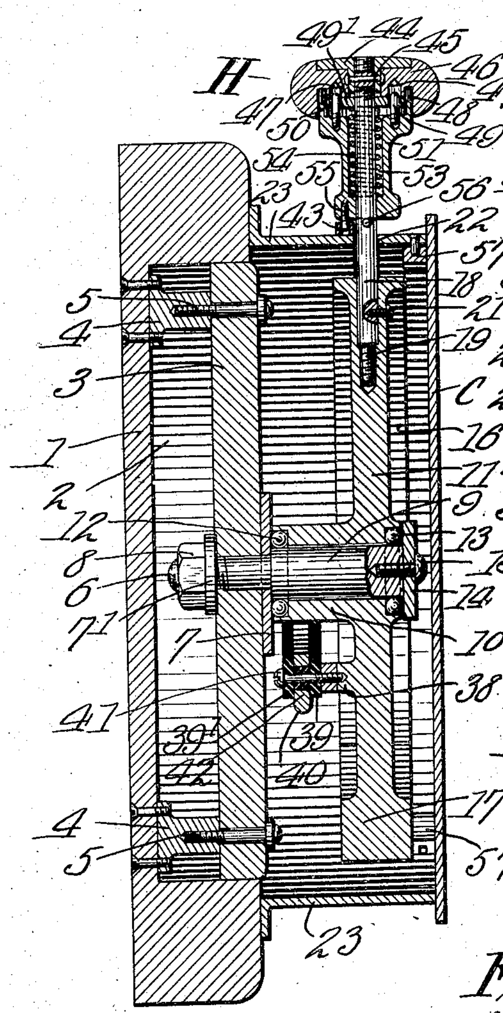


Fig. 3.

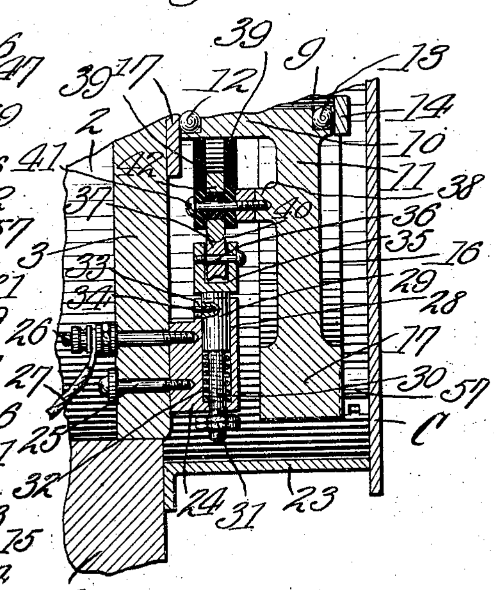
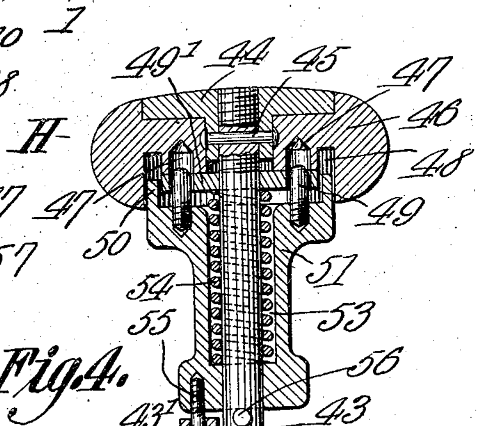


Fig. 4.



Witnesses
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UNITED STATES PATENT OFFICE.

JOHN A. MOORE, OF CHICAGO, ILLINOIS.

ELECTRIC CONTROLLER.

1,043,340. Specification of Letters Patent. Patented Nov. 5, 1912.

Application filed April 10, 1912. Serial No. 689,876.

To all whom it may concern:

Be it known that I, JOHN A. MOORE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Electric Controller, of which the following is a specification.

The present invention relates to improvements in electric controllers, the primary object of the invention being the provision of a novel form of controlling mechanism especially adapted for use in connection with electrically operated elevators, such control mechanism having a reversible member whereby the elevator may be operated to be moved up or down, the control element of the same being gravity actuated so as to automatically return to open circuit position when released, and necessitating the gripping thereof by the conductor when running the elevator.

A further object of the invention is the provision of a novel form of locking means for retaining the controlling element in circuit open position and for preventing the movement thereof accidentally.

A still further object of the invention is the provision of an anti-frictionally mounted control element provided with an overbalanced portion which is disposed in such relation thereto to exert a tension by gravity to return the element to neutral position if released by the operator.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed can be made within the scope of what is claimed without departing from the spirit of the invention.

In the drawings—Figure 1 is a front elevation of the complete controller with the cover removed from the casing. Fig. 2 is a section taken on line 2—2 of Fig. 1 with the cover in place. Fig. 3 is an enlarged detail sectional view taken on line 3—3 of Fig. 1. Fig. 4 is an enlarged detail view of the handle structure.

Referring to the drawings, the numeral 1 designates the supporting base of the controller which is provided with the circular recess 2 in which is insertible and held the disk 3 preferably formed of insulation. This disk is maintained in the desired position by means of the insulator support 4 and screws 5, there being any number of these as may be necessary.

Disposed concentrically of the disk 3 is a bolt 6 which is held in rigid position by means of the washers 7 and 7′ and the nut 8. The outer spindle 9 is projected upon the outer face of the supporting disk 3 and has rotatably mounted thereupon the hub 10 of the controlling element 11.

In order to anti-frictionally support the controlling element upon the spindle 9, the anti-frictional balls 12 and 13 are positioned in the respective ends of the hub 10, and the said hub 10 is properly held upon the stationary spindle 9 by means of the retaining disk 14 and screw 15, as clearly shown in Fig. 2.

The rim or annular band 16 of the controlling element is connected to the hub 10 by means of any number of spokes 16′ and is provided with the over-balancing weighted portion 17, so that the element will normally assume the position as shown in Figs. 1 and 2, which is open circuit position. The rod 18 is provided with the threaded end 19 which fits within the spoke of the controlling element and is held in place by means of the locking screw 21, the upper end of the rod 18 being projected through the elongated slot 22 formed in the casing 23 and of such a length as to permit of the proper movement of the controlling element when moved to make the proper electrical circuit for controlling the desired up and down movement of the elevator. The cover C is connected to the outer face of the rim or band 16 and constitutes a protecting casing for the controller mechanism.

Connected to the insulating base or disk 3 is a metal support 24, there being six shown in this structure, by means of the connecting screws and binding posts 25 and 26, as clearly shown in detail in Fig. 3. The respective conductor wires 27 are connected to the binding posts 26 and are led to and from a source of electrical energy and to the motor for raising the elevator as is usual. Each one of the metal supports 24 are provided with the sockets 28 in which are slidably mounted the plungers 29, each one of which is provided with the

reduced spindle 30 and the limiting nuts 31. Surrounding the spindle 30 within the socket 28 is a spring 32 which has a normal tension to move the plunger 29 upwardly and out of the socket. In order to prevent the rotation of the plunger 29 within the socket 28, a slot 33 is provided in the wall thereof for the reception of the removable pin 34 carried by the plunger 29, while carried by the upper end of the plunger 29 is a yoke 35 which has disposed therein, the journaling pin 36 for the rolling contact 37. As before stated in this structure there are six of these rolling contacts, and each of them is disposed to be normally projected a predetermined distance toward and concentric of the hub 10 of the controlling element, the lugs 31 limiting such projection so that normally the metal contact 42 is in neutral position.

The segmental lug 38 is carried by the controlling element and connected thereto are the two segments 39 and 39′ of insulating material, which have disposed therebetween, the crescent shaped metal contact plate 40 which is held in proper relation by means of the screws 41. The lower surface 42 of the contact plate 40 is disposed so as to be eccentric to the hub 10, so that when the same is in the position as shown in Fig. 1, the two contacts A and B are in engagement therewith while the other remaining contacts A′ and B′ are out of contact therewith. By this means the controller will normally be in neutral position and no current will be flowing through the motor. Should, however, the controller be moved to the right or left as viewed in Fig. 1, the contact surface 42 will gradually be brought into engagement with the rolling contacts of the contacts B and B′ or A and A′, and thus close a circuit to operate the motor in a forward or reverse direction to propel the elevator up or down as desired. The counter balancing weight 17 necessitates the holding of the handle H in this position, while the handle H may be released to automatically return the controller to the position as shown in Fig. 1 or in circuit open position.

In order to insure the retention of the controller in open circuit position so that the same may not be accidentally separated to close a circuit in either direction, a lug 43 carried by the casing 23 is provided with a locking notch 43′, the purpose of which will presently be described.

Keyed upon the outer rod 18 is a head or disk 44 by means of the rivet or pin 45. The main handle body 46, as shown in Fig. 4, is provided with the two sockets 47 and the annular recess 48. It will be seen that these parts are held in the same relative position to the rod 18 at all times. Mounted for vertical sliding movement upon the rod 18, is a sleeve 51 whose annular rim 50 is moved into and out of the annular recess 48, while the pins 49 prevent the sleeve from turning by sliding through the disk 49′ and into the sockets 47. The sleeve 51 is provided with a socket 53 in which is disposed a spring 54 which exerts a tension against the disk 52 in the lower end of the socket 53 to normally move the sleeve 51 downwardly, so that pin 55 is disposed to normally engage the notch 43′ of the locking lug 43. In order to limit the downward movement of the sleeve 51, a pin 56 is passed through the rod 18.

In order to detachably connect the cover C to the rim of the casing 23, lugs 57 or any number of connectors are provided.

From the foregoing description taken in connection with the drawings, it is evident that the spring actuated sleeve 50 will normally retain the controlling element in the position as shown in Figs. 1 and 2, and that in order to move the controlling element to forward or reverse direction, the operator must grip the handle H and move the same to oscillate the weight 17 and cause the switch 40 to bridge any two of the contacts B—B′ or A—A′, the shape of the contact surface 42 of the switch 40, making it possible to bridge two or more of the contacts, according to the speeds required.

By reason of the fact that the locking lug 43 and the pin 56 carried by the rod 18 is positioned a certain distance above the casing 23, the handle H and controlling element 11 is permitted a free movement or oscillation on either or both sides of the lug 43, but by reason of the weight 17, the controlling element, when released will automatically assume neutral position and be held there by the pin 56 and lug 43.

While herein is described the invention in detail, and is illustrated a combination embodying various features, which may at times be used to advantage, it is not the desire or intention of claimant to be limited to the particular arrangement shown, or to an arrangement embodying the various auxiliary features, except as particularly pointed out in the appended claims.

What is claimed is:

1. A controller, including a base, a support of insulating material carried by the base, a spindle connected concentrically of the support and projecting from one side thereof, a casing connected to the base and inclosing the spindle and support, a plurality of spring projected anti-frictional electrical contacts carried by the support and having their contact ends disposed in a line concentric to the center of the casing, an oscillatory controlling member mounted upon the spindle and within the casing, and a metal segmental switch connected to and insulated from the member, the outer face

of said switch being disposed eccentrically to the spindle and in the path to engage the spring actuated contact points.

2. A controller, including a base, a support of insulating material carried by the base, a spindle connected concentrically of the support and projecting from one side thereof, a casing connected to the base and inclosing the spindle and support, a plurality of spring projected anti-frictional electrical contacts carried by the support and having their contact ends disposed in a line concentric to the center of the casing, an oscillatory controlling member mounted upon the spindle and within the casing, a metal segmental switch connected to and insulated from the member, the outer face of said switch being disposed eccentrically to the spindle and in the path to engage the spring actuated contact points, and a counter-balancing means connected to said member for automatically returning the same to neutral position.

3. A controller, including a base, a support of insulating material carried by the base, a spindle connected concentrically of the support and projecting from one side thereof, a casing connected to the base and inclosing the spindle and support, a plurality of spring actuated anti-frictional electrical contacts carried by the support and having their contact ends disposed in a line concentric to the center of the casing, an oscillatory controlling member mounted upon the spindle and within the casing, a metal segmental switch connected to and insulated from the member, the outer face of said switch being disposed eccentrically to the spindle and in the path to engage the spring actuated contact points, a handle for operating said member, and a spring actuated lock carried by the handle for locking the member in neutral position and against accidental oscillation.

4. A controller, including a base, a support of insulating material carried by the base, a spindle connected concentrically of the support, and projecting from one side thereof, a casing connected to the base and inclosing the spindle and support, a plurality of spring projected anti-frictional electrical contacts carried by the support and having their contact ends disposed in a line concentric to the center of the casing, an oscillatory controlling member anti-frictionally mounted upon the spindle and within the casing, an insulated metal segmental switch connected to and carried by the member, the outer face of which is disposed eccentrically to the spindle and in the path to engage the spring actuated contact points, a counter balancing means connected to said member for automatically returning the same to neutral position, a handle for operating said member, and a spring actuated lock carried by the handle for locking the member in neutral position and against accidental oscillation.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

JOHN A. MOORE.

Witnesses:
HENRY J. PIGGOTT,
WILLIAM J. BOLAND.