No. 728,590. PATENTED MAY 19, 1903.

J. B. LINN.

LOCK FOR CONTROLLER HANDLES.

APPLICATION FILED JAN. 29, 1901.

NO MODEL.

Fig. 1.

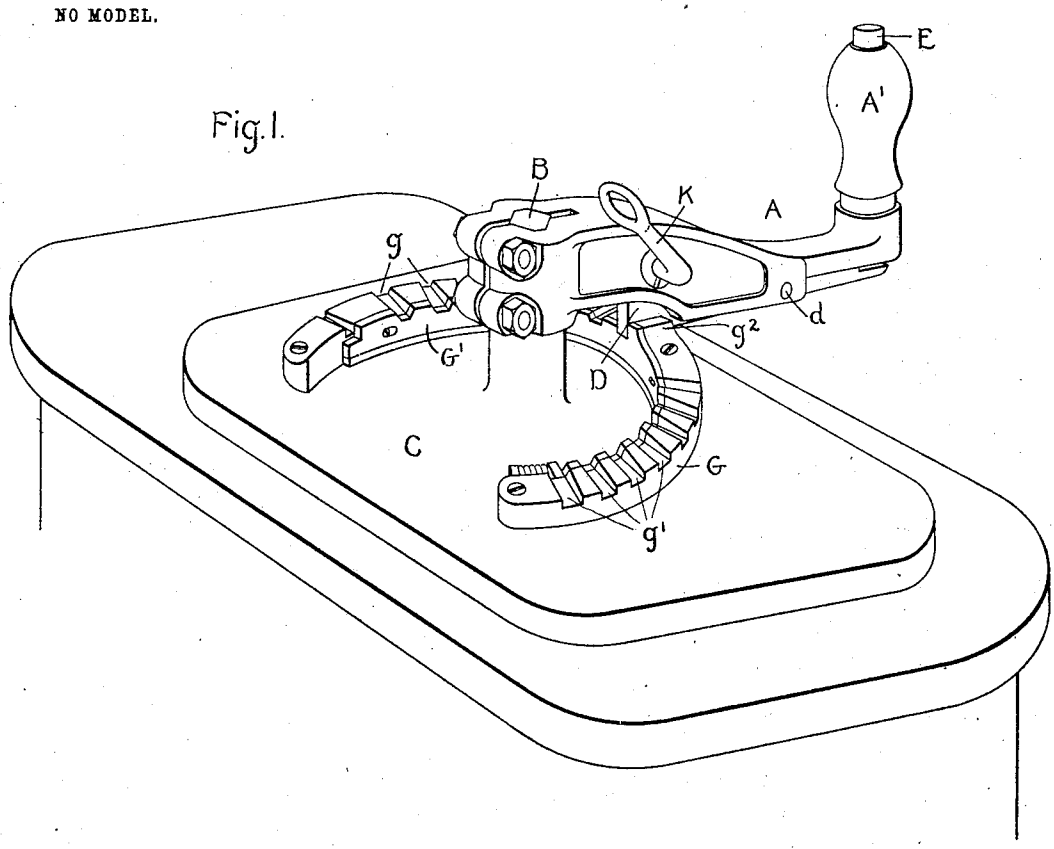


Fig. 2.

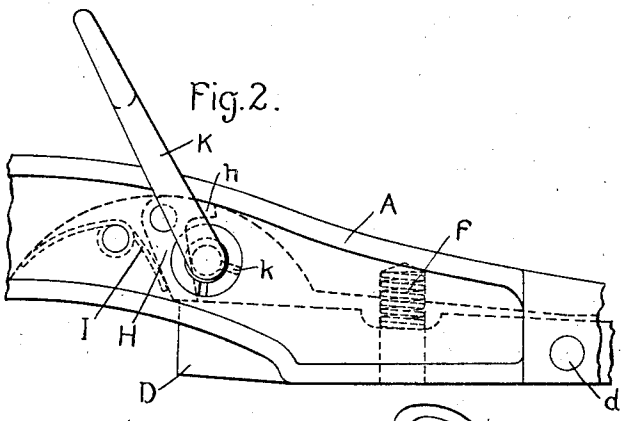


Fig. 3.

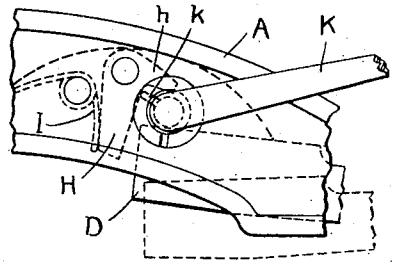


Fig. 4

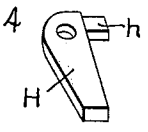
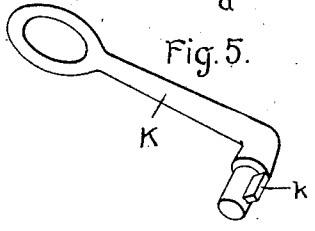


Fig. 5.



Witnesses.

John Ellis Glenn.

Benjamin B. Hicks.

Inventor.

John B. Linn

by Allen & Sons

Atty.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 728,590. Patented May 19, 1903.

UNITED STATES PATENT OFFICE.

JOHN B. LINN, OF SCHENECTADY, NEW YORK, ASSIGNOR TO GENERAL ELECTRIC COMPANY, A CORPORATION OF NEW YORK.

LOCK FOR CONTROLLER-HANDLES.

SPECIFICATION forming part of Letters Patent No. 728,590, dated May 19, 1903.

Application filed January 29, 1901. Serial No. 45,196. (No model.)

To all whom it may concern:

Be it known that I, JOHN B. LINN, a citizen of the United States, residing at Schenectady, county of Schenectady, State of New York, have invented certain new and useful Improvements in Locks for Controller-Handles, of which the following is a specification.

This invention relates to controllers for electric motors, and especially those used in electric-railway work for controlling two motors by the series-parallel system.

Municipal governments frequently restrict the speed at which electric-railway cars shall run within certain portions of the town, while permitting a higher rate of speed outside of those limits; but if a motorman is able to run his car beyond the prescribed speed there is a strong temptation to do this when he gets behind time or has a clear track. The frequent arrest and fining of motormen for thus disobeying the law is an annoyance and expense both to the railroad company and to the municipal authorities.

The object of my invention is to render it impossible for a motorman to exceed a given speed within the prescribed limits; and to this end the invention consists in means for preventing the controller-cylinder from being turned beyond a given point, such as the series position, until released by an authorized official, who will be stationed at that point on the road where the change in speed is permissible. As the motors cannot be connected in multiple or otherwise speeded up until the cylinder is thus released, the speed of the car cannot exceed a certain rate within the prescribed portions of the town.

Various specific modes of carrying out my invention might be suggested; but I prefer the one shown in the accompanying drawings, in which—

Figure 1 is a perspective view of the cap-plate, handle, and rack of a controller. Figs. 2 and 3 are side elevations of a portion of the handle. Fig. 4 is a perspective view of the locking-tumbler. Fig. 5 is a perspective view of the key.

The controller contact-cylinder is rotated by a handle A, secured to the cylinder-shaft B, projecting up through the cap-plate C of the controller-casing. The handle is hollowed to house a latch-lever D, pivoted at d and arranged to be lifted by a thumb-piece E, bearing on the outer end of the lever and running up through the crank-handle A'. A spring F keeps the latch normally depressed and in engagement with a notch in a curved rack G, concentric with the shaft B. The notches correspond with the several positions of the controller, those lettered g relating to the series positions and those lettered g' to the parallel positions of the contact-cylinder.

The controller is provided with devices which normally prevent the handle A from passing from one set of notches to the other, but which can be so manipulated as to permit it to pass when desired. The means I prefer for accomplishing this result comprise a stationary abutment rising above the upper surface of the rack G and in the path of the latch preferably a lug g^2, integral with the rack. In the handle A is pivoted a tumbler H, normally maintained over the end of the latch D, as by means of a spring I, so that the lift of the latch is limited by the tumbler, being only sufficient to let the latch clear the teeth between the notches in the rack and not enough to let it pass over the lug g^2. (See Figs. 1 and 2.)

In the side of the handle is a keyhole through which a key K can be inserted, having a bit k, which when the key is turned forces back the tumbler and permits the latch to be lifted high enough to clear the lug g^2 and pass on to the parallel notches g'. So long as the key remains in this position, as shown in Fig. 3, the bit k lies above the axis of the pin of the key, so that the pressure of the spring-actuated tumbler holds the key firmly and prevents it from being jarred out of position. The key cannot be withdrawn without allowing the tumbler to return to the normal position, as shown in Fig. 2, where a lug h strikes the handle and stops the tumbler. The motorman is thus at liberty to swing the handle over the notches g, governing the series positions of the controller; but he cannot move it past the lug g^2 until an official at the city line or other predetermined limit furnishes the key which throws back the tumbler. The official will be provided with a supply of keys sufficient to equip

all outgoing cars and will collect them from all incoming cars.

Different specific modes of embodying my invention may be devised; but I regard them all as falling within the spirit and scope of my invention.

In Fig. 1 the rack is shown provided with an auxiliary spring-rack G', which forms the subject-matter of an application for patent by W. B. Potter, filed December 28, 1900, Serial No. 41,369.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. The combination with a motor-controller having low-speed and high-speed operative positions, of a device for preventing the movement of the controller into a high-speed position, and means separate from the controller for rendering said device inoperative.

2. The combination with a motor-controller having low-speed and high-speed operative positions, of a lock for preventing the movement of the controller into a high-speed position, and a key for said lock.

3. The combination with a series-parallel controller, of a lock for preventing the movement of the controller from series to parallel, and a key for said lock.

4. The combination with a series-parallel controller, of a handle therefor, a lock for preventing said handle from passing from series to parallel, and a key for said lock.

5. The combination with a controller, of a handle, a pivoted latch on said handle, a notched rack for said latch, means for preventing said latch from passing a given point on the rack, and means separate from the controller for rendering the aforesaid means inoperative.

6. The combination with a controller, of a handle, a pivoted latch on said handle, a notched rack, an abutment, a lock preventing the latch from passing the abutment, and a key for the lock.

7. The combination with a series-parallel controller, of a handle, a pivoted latch on said handle, a notched rack, a lug on said rack between series and parallel positions, a device to limit the lift of the latch to less than the height of the lug, and means for rendering said device inoperative.

8. The combination with a controller, of a handle, a pivoted latch thereon, a notched rack, a lug on said rack, a tumbler normally engaging with said latch, and a key to move the tumbler.

9. The combination with a controller, of a hollow handle having a keyhole, a pivoted latch housed in the handle, a tumbler normally lying above said latch, and a key insertible through the keyhole and having a bit to press back said tumbler and permit the latch to rise higher.

10. In a controller, the combination with a hollow handle, of a latch pivoted therein, a spring-actuated tumbler normally lying above the latch, and a key adapted to force back said tumbler and be held against displacement by the pressure of the spring.

11. In combination with a controller-handle, a latch operatively connected with said handle and having a predetermined range of movement, means for operating said latch, and means carried by said handle and independent of said operating means for arresting said latch at a predetermined point intermediate the limits of its movement.

12. In combination with a controller-handle, a latch operatively connected with said handle and having a predetermined range of movement, means carried by said handle for arresting said latch at a predetermined point intermediate the limits of its movement, and means for rendering said arresting means inoperative.

In witness whereof I have hereunto set my hand this 28th day of January, 1901.

JOHN B. LINN.

Witnesses:
BENJAMIN B. HULL,
MARGARET E. WOOLLEY.