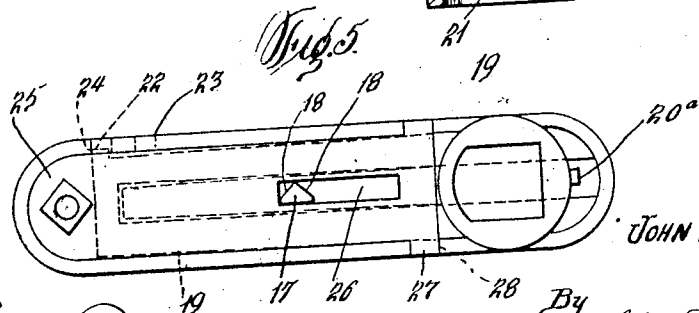
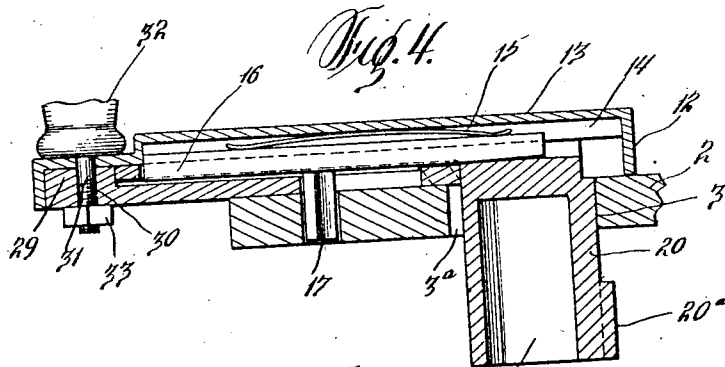
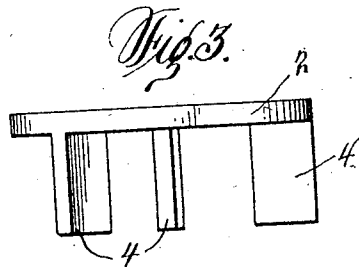
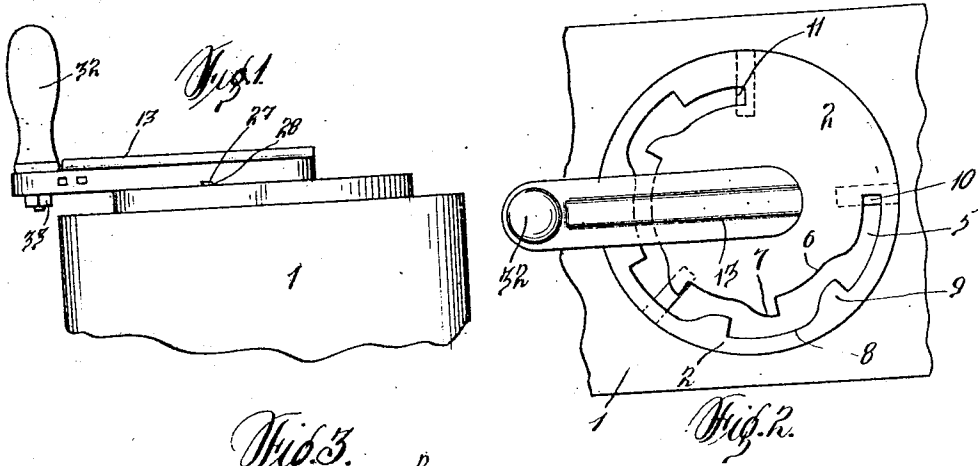


J. H. HUEY.
 CONTROLLER FOR STREET CARS.
 APPLICATION FILED AUG. 2, 1909.

Patented Apr. 26, 1910.

956,355.



Witnesses

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UNITED STATES PATENT OFFICE.

JOHN HENRY HUEY, OF TARENTUM, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO
WILLIAM F. HEINLE, OF NATRONE, PENNSYLVANIA.

CONTROLLER FOR STREET-CARS.

956,355.

Specification of Letters Patent.

Patented Apr. 26, 1910.

Application filed August 2, 1909. Serial No. 510,902.

To all whom it may concern:

Be it known that I, JOHN HENRY HUEY, a citizen of the United States of America, residing at Tarentum, in the county of Allegheny and State of Pennsylvania; have invented certain new and useful Improvements in Controllers for Street-Cars, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to controllers for street cars, and more particularly to a mechanism for governing the movement of a controller lever or handle.

The objects of my invention are to provide a controller with simple and effective means for governing the "throwing-on" movement of the controller lever or handle, and to furnish a controller casing with a novel plate adapted to limit the movement of the controller lever.

Other objects of my invention are to provide a controller with a novel mechanism that will prevent the motorman or operator of the car from suddenly starting the same, and to provide means for retarding the "throwing-on" movement of a controller lever, thereby preventing the motor from being "burned out" by a too rapid application of power to a car.

These and such other objects as may hereinafter appear are attained by a mechanism that has been designed for all branches of electric service, for instance, for regulating the power to motors on electric cranes, to hauling and coal mining motors, and can be used for regulating and controlling various power feeding apparatus.

My power regulating device will be hereinafter described in detail and then claimed.

In the drawings: Figure 1 is a front elevation of a portion of the controller equipped with my improved mechanism, Fig. 2 is a plan of the same, Fig. 3 is a front elevation of a plate forming part of the controller, Fig. 4 is an enlarged longitudinal sectional view of the controller lever or handle, and Fig. 5 is a bottom plan of the same.

To put my invention into practice, I provide the top plate 1 of a controller with a circular retarding plate 2, said plate having

a central opening 3 with the wall of the opening provided with a vertical groove 3^a, for a purpose that will hereinafter appear. The plate 2 is provided with depending equally spaced supports 4 adapted to rest upon the mechanism within the controller 1. The plate 2 is provided with a circumferentially disposed slot 5 of a length approximately three-quarters the circumference of the plate 2. The slot 5 has the inner wall thereof off-set, as at 6, and provided with beveled lugs 7, these lugs extending into off-set portions 8 of the outer wall of the slot. The outer wall of the slot is also provided with beveled lugs 9 extending into the off-set portion 6 of the slot 5, thus providing a staggered, irregular or sinuous slot extending from the "power-off" point 10 of the controller to the "power-on" point 11.

The lever used in connection with the controller 1 comprises an oblong casing 12 having an open bottom, said casing having the top thereof provided with a longitudinal rib 13, said rib providing a longitudinal groove 14 in the under side of the top of the casing. In the groove 14 is placed a spring or resilient strip of metal 15 adapted to bear upon an oblong head 16 carried by a depending pin 17, said pin being triangular in cross section to provide two beveled sides 18. The head 16 is loosely held in an oblong frame 19 arranged within the casing 12, one end of said frame being connected to a sleeve 20 and extending through the opening 3 of the plate 2, said sleeve providing a socket 21 for the upper end of the controller shaft (not shown). The sleeve 20 is provided with a vertical rib 20^a, and this rib must aline with the groove 3^a, before the sleeve 20 can be placed in the opening 3 of the plate 2. The opposite end of the frame 19 is provided upon one side with a lug 22 adapted to engage in openings 23 and 24 provided therefor in one of the longitudinal side walls of the casing 12.

The frame 19 is retained in position by a cover plate 25, said plate having a longitudinal slot 26 to provide clearance for the pin 17. The inner end of the plate 25 is provided with oppositely disposed lugs 27 to engage in notches 28 provided therefor in the longitudinal side walls of the casing

12. The opposite or outer end of the plate 25 is provided with an enlargement 29 engaging the top of the oblong casing 12, and with an opening 30, to receive a depending screw bolt 31 carried by a handle 32, said handle and screw bolt being held in engagement with the casing 12 by a nut 33, said nut also holding the cover plate 25 within said casing. The cover plate 25 is of a less length than the casing 12, consequently the casing 12 can be shifted upon the frame 19.

With the controller lever in position, the pin 17 is adapted to extend into the irregular slot 5 of the circular retarding plate 2, and to swing the lever from the point 10 of the plate 2 it is necessary to shift the casing 12 back and forth upon the frame 19, otherwise the pin 17 would engage the lugs 7 and 9 and prevent the lever from being moved. The frame 19 loosely fits within the casing 12 and has sufficient lateral movement for the lug 22 to move out of the opening 24 and into the opening 23, and vice versa. In starting the lever from the "power-off" point 10 the lug 22 engages in the opening 23, and immediately upon the pin 17 contacting with the first lug 9, the casing 12 is shifted or pushed inwardly toward the vertical axis of the plate 2. This movement of the casing causes the lug 22 to register with the opening 24, and after the lever is swung whereby the pin 17 impinges the first lug 7, the lever is pulled outwardly, whereby the casing will shift to move the pin 17 clear of the lug 7 and allow of a further "throwing-on" movement of the controller lever. This operation is continuous until the "power-on" point is reached, and from this point the lever can be easily and quickly swung to the point 10 owing to the beveled faces 18 of the pin 17 allowing said pin to ride over the inner irregular walls of the slot 5. The spring 15 is of sufficient tension to frictionally hold the head 16 in engagement with the cover plate 25, and in swinging the controller lever, the lug 22 of the frame 19 will engage in one of the openings 23 or 24. In providing the openings 23 and 24 and the lug 22, it is impossible for the operator of the controller lever to rapidly manipulate or "jump" the lugs 7 and 9 for this reason. When the pin 17 engages one of the lugs, the lug 22 extends into one of the openings 23 or 24, and before the casing of the controller lever can be shifted, the lever must be moved backward a short distance from the lugs 7 or 9 to allow the lug 22 to move out of either the opening 23 or 24. The casing can then be shifted and when the next lug of the plate 2 is encountered, the same manipulation of the lever must take place before the casing thereof can be shifted. With the lug 22 out of either the openings 23 or 24, the casing 12 can be

shifted to overcome the friction of the spring and move the head 16 by either end of the casing contacting with the ends of the head.

In devising my improved controller mechanism, I have aimed to obviate the trouble experienced by inexperienced or "green" motormen in operating street cars. It is a well known fact that the public experiences considerable discomfort, often resulting in injury, by a motorman suddenly starting a car, and considerable expense is incurred on the part of street car companies by the motors being burned out by the power being applied too quickly. The controller regulator also prevents the operators of mill cranes and motors for hauling purposes being started too suddenly.

It is thought that the operation and utility of my improvement will be fully understood without further description, and while in the drawings there is illustrated a preferred embodiment of the invention, it is obvious that the structural elements thereof can be varied or changed without departing from the spirit of the invention.

Having now described my invention what I claim as new, is:

1. The combination with a controller, of a retarding plate mounted upon said controller, said plate having an irregular slot formed therein with the walls thereof provided with inwardly projecting lugs, a lever adapted to swing back and forth over said plate, said lever comprising a frame, a casing movably mounted upon said frame, a spring pressed head arranged within said frame, a depending beveled pin carried by said head and extending in the slot of said plate, and means for retaining said casing and said head in engagement with said frame.

2. In a controller, a retarding plate carried by said controller and having an irregular slot formed therein, a lever adapted to swing back and forth over the slot of said plate, said lever comprising a frame, a pin movable with relation to said frame and extending into the irregular slot of said retarding plate, a casing for moving said pin, and a handle carried by said casing.

3. In a controller, a retarding plate carried by the top of said controller, said plate having an irregular slot formed therein, a lever adapted to swing back and forth over said slot, a beveled pin supported through the medium of said lever and extending into said slot, and means within said lever for frictionally holding said pin with relation to said lever and causing the same to shift with said lever.

4. In a controller, the combination with a retarding plate having an irregular slot formed therein, of a controller lever adapted to swing back and forth over said slot, said

lever comprising a frame, a casing movably
mounted upon said frame, a spring pressed
head within said frame, a depending pin
carried by said head and extending in the
5 slot of said plate, and a cover plate for hold-
ing said casing in engagement with said
frame, substantially as described.

In testimony whereof I affix my signature
in the presence of two witnesses.

JOHN HENRY HUEY.

Witnesses:

H. M. STUMP,
M. D. KUHN