

J. B. JACKSON.
CLAMP CONTROLLER HANDLE FOR MOTORNEERS.
APPLICATION FILED DEC. 26, 1912.

1,064,696.

Patented June 10, 1913.

Fig. 1.

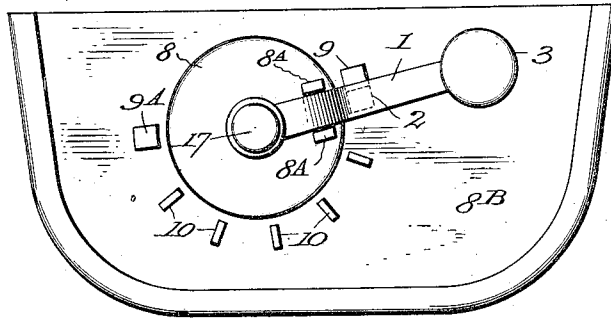


Fig. 5.

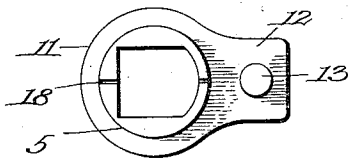


Fig. 6.

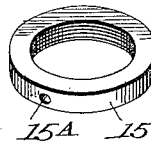


Fig. 2.

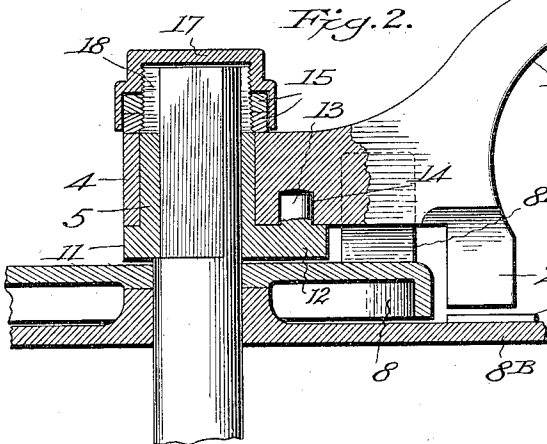


Fig. 4.

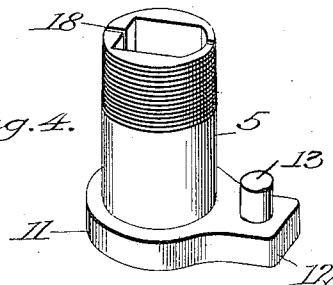
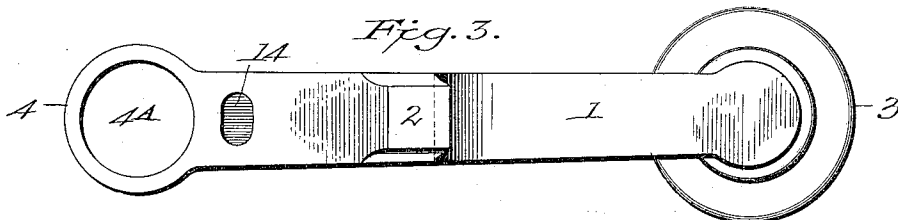


Fig. 3.



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CLAMP CONTROLLER-HANDLE FOR MOTORNEERS.

1,064,696.

Specification of Letters Patent.

Patented June 10, 1913.

Application filed December 26, 1912. Serial No. 738,729.

To all whom it may concern:

Be it known that I, JAMES B. JACKSON, a citizen of the United States of America, residing in the city and county of Denver and State of Colorado, have invented a new and useful Clamp Controller-Handle for Motorneers, of which the following is a specification.

My invention relates to improvements in clamp controller-handles for operating motorneers of electric street railway cars; and the objects of my invention are: First, to provide a controller handle that is adapted for use on the motorneers of electric street railway cars, by which a rotary step by step current admitting movement is imparted to the controller handle without moving the controller shaft backward from its progressive or operative movements. Second, to provide means by which my improved controller-handle can be applied to the controller shaft of a motorneer. And third, to provide a simple short stroke step by step releasing and progressively increasing current supply admitting controller-handle. I attain these objects by the mechanism illustrated in the accompanying drawings, in which:

Figure 1, is a plan view of a controller and of a motorneer showing the improved controller-handle operatively mounted thereon. Fig. 2, is a vertical sectional view partly in elevation, showing the handle and parts connected therewith mounted upon a controller shaft. Fig. 3, is a bottom view of the handle. Fig. 4, is a perspective view of the bushing which is inserted in the end of the handle, and which is clamped upon the controller shaft. Fig. 5, is a plan view of the said bushing. And Fig. 6, is a perspective view of one of the clamping rings or nuts which is screwed upon the upper end of the bushing.

Similar letters of reference refer to similar parts throughout the several views.

Referring to the drawings,—the numeral 1 designates the handle lever portion of my improved controller-handle.

2 designates the stop portion of the handle; and 3, its hand grasping knob, which is preferably made of wood or any other suitable insulating or non-conductive material. The opposite end of my improved controller-handle from its hand grasping knob portion is provided with a rounded pivotal end portion 4, which is provided

with an aperture 4^A, that is made enough larger than the key end of the controller shaft on which the handle is to be placed, to permit a bushing 5 to be placed in it. This bushing is arranged and adapted to fit loosely in the aperture in the pivotal end of the controller-handle, so that the handle can turn rotatively a short distance on it, as will be explained more fully hereinafter, and it is provided with an axial aperture of a square or other polygonal form, to fit on and key to a similar square or other polygonal form of key end of the handle receiving end of the controller shaft, which projects above the top of the motorneer 8, which is placed on top of the motorneer between its stop lugs 8^A, far enough to receive the handle. The top of the casing 8^B, of the controller is provided with a projecting stop lug 9, which is positioned in the path of the stop lug 2, and the handle is arranged on the controller shaft to rest up against the right hand side of the stop lug 9, when the motorneer and the controller shaft are not in circuit. The controller handle is arranged and adapted to move in a circle by a step by step circular movement, which movement turns the controller shaft and turns the current on in progressively increasing strength and volume of current, as the controller handle and the controller shaft is turned until it strikes against an opposite stop lug 9^A on top of the controller, at which point the full strength of the current is turned on through the controller, as is understood.

It is the custom at the present time to secure the controller handle directly to the controller shaft, so that when the controller handle is moved in either direction, even to the slightest amount of movement, the controller shaft is moved with it, and in the step by step current admitting movement of the controller shaft, it is necessary to turn the crank handle back slightly after each progressive step movement before moving the controller handle to the next increased flow of current checking point, which checking points are denoted on top of the controller by long slightly raised ribs 10, or by other suitable indicating movement checking points.

The essential object of my present invention is to provide means by which the backward movement of the controller handle from the checking points can be accom-

plished without moving or turning back to the controller shaft even in the slightest degree. There are a number of ways in which this feature of my invention can be carried out. I preferably, however, arrange the controller shaft engaging handle in the following manner: The bushing 5 above referred to, fits loosely enough in the pivotal end of the handle to permit the handle to turn easily on it a short distance without moving the bushing when the bushing is removably keyed to the handle engaging end of the controller shaft, in such a manner that when the bushing is turned even to the slightest degree forward, the controller shaft must turn with it, and in carrying out this feature of my invention I preferably arrange the bushing in the following manner: The bushing is provided with a flanged lower end portion 11, that is enough larger in diameter than the bushing to bear against the round end portion of the handle, and this flange extends in a narrowed projecting lug portion 12, a short distance along the body of the handle, and at its end it is provided with a vertically projecting pin 13, which forms a key that locks the bushing to the handle and which is extended above the flange or forms an integral part of it. This vertically arranged pin key 13, projects loosely into an oblong recess 14, that is formed in the under side of the body of the handle, and which is arranged to extend transversely across the bottom edge of the handle. Consequently the handle has a short reciprocal movement through the medium of its oblong recess 14, into which the pin 13 projects, and this reciprocal movement of the handle on the pin is preferably of about one-eighth of an inch, but may be more or less as desired. The upper end of the bushing is threaded and is provided with two check or jam nuts 15, which are arranged to be tightened in position to secure the handle to the bushing without vertical movement thereon, but at the same time to permit the handle to be turned reciprocally freely on the bushing to the extent of the reciprocal movement of the handle on the pin key 13, in its oblong recess 14. The nuts are preferably round nuts, and their peripheral surfaces are provided with apertures 15^A, in which a suitable spanner wrench is applied to tighten the same. The threaded end of the bushing preferably extends beyond the check nuts far enough to receive a hooded nut 17, which is provided with a tapering threaded aperture and which is provided with a housing portion that is preferably made long enough and is arranged to extend down over the check nuts loosely but closely. The threaded end of the bushing is also preferably split diametrically across it, as shown at 18, and it is also preferably made tapering enough

to receive the taper threaded aperture of the hooded nut, which is arranged to clamp the split ends of the bushing together, thus securing the handle to the controller shaft permanently against accidental displacement, and the check nuts are fitted to it in such a manner that when they are screwed on it in proper position relative to the handle, they will have to slightly spring the top split ends of the bushing together enough to cause them to fit tightly on the threaded end of the bushing, and at the same time cause the aperture in it to fit snugly but loosely enough to be easily lifted up off from the controller shaft when the cap is loosened and unscrewed enough to allow the taper split end of the bushing to open and free the controller shaft.

The operation of my improved controller handle is as follows: The motorner is mounted on the controller shaft in operative position on top of the casing of the controller, and the handle is connected to the motorner. The handle with its bushing properly mounted in it is secured to the controller shaft and is placed on the motorner between its stop lugs 8^A and against the right hand stop lug 9 of the controller, and when put into operative circuit making use, is moved from the stop lug 9, to the first pointer line 10, where it stops automatically, as is well understood, and as it moves to this first pointer line from the stop lug 9, it turns the controller shaft. When the controller handle is moved to this first line 10, it is necessary at this point or line 10 to first move the handle back from this pointer line 10 toward the stop lug 9 a slight distance in order to release the motorner before the handle can be moved forward to the next pointer line of these lines 10, where a circuit is made that permits a stronger current or an increased quantity of electric current to be turned on through the controller, and this backward movement of my handle is made by moving it the slight distance of about an eighth of an inch allowed by its recess 14 on the pin key 13 of the bushing, and this movement is made without turning the controller shaft backward in the least, as the handle turns on the bushing. Then the motorman turns the handle to the second pointer check line in the progressive order of its circular swinging movement, where it is again checked and must be again moved back, which is done without turning the controller shaft back, as the handle turns freely on the pin key 13, and this free backward movement of the handle independently of and free from any backward turning movement of the controller shaft, takes place at each progressive circular step by step movement of the handle during the fixed checking points in its circular reciprocal move-

ment on the controller from one of its stop lugs 9 to its stop lug 9^A, or from the point where a little of the current is first thrown on to the point where the full strength of the current is thrown on through the controller.

My invention prevents the backward turning movement of the controller shaft, and saves its wearing out as quickly as when it is turned back with the handle, and makes the work of the motorman easier.

Having described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. A controller handle for the controller shafts of motorneers, comprising a handle provided with a bushing in its pivotal controller shaft engaging end, means for securing said bushing to the handle receiving end of the controller shaft, said bushing being loosely mounted in said handle to permit said handle to turningly move reciprocally thereon independently of said bushing, and means for keying said bushing to said handle to define its movement on said bushing.

2. A controller handle for the controller shafts of motorneers, comprising an operative controller handle, provided with a bushing mounted rotatively in its pivotal end, said bushing being arranged to be mounted on and keyed to the crank handle receiving end of a controller shaft, means for keying said bushing to said handle to determine the extent of the handle's turning movement thereon, and means for securing said bushing to said handle.

3. A controller handle for the controller shafts of motorneers, comprising a controller handle provided with a pivotal end containing a shaft surrounding aperture, a bushing fitting said aperture with a rotatable fit, said bushing being provided with a controller shaft fitting and keying aperture, said bushing being provided with a tapering threaded end portion arranged to project above said handle, and having a slot extending through and across said taper threaded end, check nuts arranged to thread to said slotted taper threaded end, and a hooded nut threaded to said end and arranged to cover said check nuts and to clamp and key said bushing to said shaft, and means for limiting the turning movement of said handle on said bushing to a short predetermined reciprocal turning movement whereby said handle can be turned backward on said bushing a short distance when said bushing is keyed to a controller shaft without turning the controller shaft back with said handle.

4. A controller handle for the controller shafts of motorneers, provided with an aperture in its end larger than the controller shaft to which it is to be applied, a bushing fitting loosely in said aperture, provided

with an axial aperture of a form arranged to key to the controller shafts, and provided with a threaded tapering slotted end, and means including a hooded nut having a tapered threaded aperture fitting the taper end of said bushing, arranged to clamp the slotted end of said bushing to said controller shaft firmly enough and tightly enough to positively turn the same, and means for connecting said handle to said bushing to turn thereon a short distance, and keyed thereto to move said bushing and consequently said controller shaft with it when moved in either direction, whereby said controller handle is provided with a short backward movement at each progressive check resistance point of the motorneer independent of and without moving the controller shaft with it.

5. A controller handle for the controller shafts of motorneers, comprising an operatively arranged handle provided with an aperture in its controller shaft engaging end of considerably larger diameter than the handle engaging end of said controller shaft, and also provided with a transversely arranged oblong recess in its bottom edge, a bushing loosely mounted in said handle's controller shaft's surrounding aperture provided with a flanged bottom portion which rests on top of the motorneer and on which the adjacent end of the handle rests, a lug portion on the flange of said bushing extending to the oblong recess in said handle, a pin portion on the end of the extending lug of said bushing projecting into the oblong recess of said handle loosely and adapted to engage the handle at the opposite ends of said recess, when said handle is moved on said bushing, and means for securing said bushing to said handle, said bushing being provided with an axial aperture adapted to fit removably on the end of said controller shaft and arranged to key to it, whereby said handle can be moved backward at the stopping points of said motorneer in its progressive swinging operative current turning movement on said motorneer without turning said controller shaft backward with it.

6. A controller handle comprising the handle body provided with a suitable hand grasping knob, an abutment stop lug and a pivotal end adapted to fit over the controller shaft of a motorneer, said pivotal end being provided with a bushing fitting loosely in the pivotal end of said handle, said handle being provided with an oblong slot in its under side, an extension on said bushing fitting loosely in said recess and of enough smaller size than said recess to allow said handle to be moved reciprocally a short distance on it, and means including a shaft keying form of aperture through said bushing adapted to lock removably to a controller shaft, a threaded end on the oppo-

site end of said bushing from said flange, and means including check nuts for securing said bushing to the pivotal end of said handle in slight independent rotative relation thereto, and for removably securing
5 said bushing to said shaft.

7. In a device as specified, the combination with a controller shaft, of a bushing rigidly mounted thereon having a projec-
10 tion, a vertical pin on said projection, and

a handle loosely mounted on said bushing, having an oblong recess in its under side into which said pin projects.

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

JAMES BOOKER JACKSON.

Witnesses:

G. SARGENT ELLIOTT,
ELIZABETH SMITH.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
