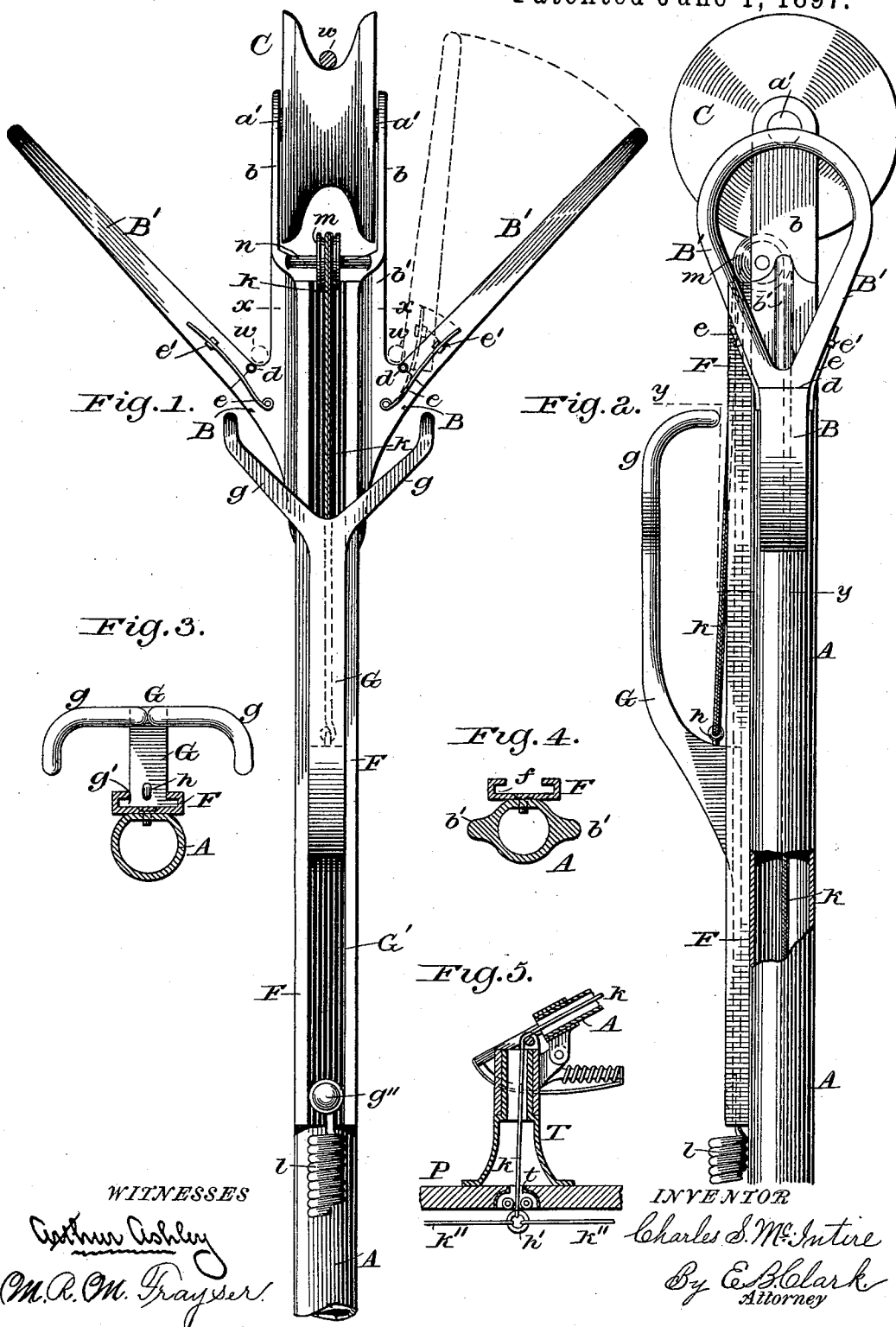


(No Model)

C. S. McINTIRE.  
SELF ADJUSTING TROLLEY.

No. 583,881.

Patented June 1, 1897.



WITNESSES

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# UNITED STATES PATENT OFFICE.

CHARLES S. MCINTIRE, OF ALLEGHENY, PENNSYLVANIA.

## SELF-ADJUSTING TROLLEY.

SPECIFICATION forming part of Letters Patent No. 583,881, dated June 1, 1897.

Application filed February 19, 1895. Serial No. 538,971. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES S. MCINTIRE, a citizen of the United States, residing at Allegheny, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Self-Adjusting Trolleys; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to overhead trolley-arms, and more particularly to a trolley-guard and a replacing device connecting with the trolley-arm.

The object of my invention is to provide for catching the wire in case the trolley-wheel flies off from it, thereby preventing the trolley-arm from springing into the air, and also to making electrical connections from the displaced wire through lateral guards to the motor, so that it may be reversed, if desirable.

Another object is to provide for quickly and conveniently replacing or readjusting the trolley-wheel in contact with the wire, so that the latter shall lie in the groove of the wheel.

In my improved device lateral inclined guards are secured to the trolley-arm for catching the wire in case the trolley-wheel jumps from it, and such guards are adapted to make electrical connections from the wire to the motor. A sliding spring replacing or adjusting device is also provided in a suitable guideway, to which a rope or chain is attached, passing down through the trolley-arm into the car, for replacing the wire in the groove of the trolley-wheel.

The improvements constituting my invention will be defined in the claims.

I will now particularly describe my invention by reference to the drawings, in which—

Figure 1 represents a front elevation of the upper end of the trolley-arm, illustrating my invention. Fig. 2 represents a side elevation. Fig. 3 represents a transverse section on the irregular line *y y*, Fig. 2. Fig. 4 represents a transverse section on the line *x x*, Fig. 1. Fig. 5 represents, on reduced scale, a vertical section of the base of the trolley-arm and its supporting-post for showing the rope of the adjusting device passing down into the car.

The trolley-arm A is preferably made hol-

low and its upper end is provided with forks *b b* to receive the trolley-wheel C, which is journaled upon the transverse axle *a'*. To the upper end of the trolley-arm there are fixed two lateral inclined guard-fingers. These fingers are preferably composed of two parts—viz., a plate B, which is secured longitudinally to the trolley-arm and is provided with a short projection to which there is connected by an elbow-hinge joint *d* and the upwardly and outwardly inclined finger B', terminating at its upper end below the outer edge of the trolley-wheel and at about a horizontal level with its axle, as shown in Fig. 2. A flat spring *e* is rigidly secured to the fixed portion B of the fan and is engaged between a pair of lateral lugs *e'* upon the movable portion B', so that the latter portion may be pressed up against the trolley-arm, as indicated by dotted lines, and will be thrown back into its normal position by means of said spring *e*. These lateral guard-fingers, it will be understood, will catch the wire in case the trolley-wheel should in any manner be thrown off from it and thus prevent the trolley-arm from springing into the air and knocking against a span-wire or a switch.

Since the fingers terminate below the outer edge of the trolley-wheel, they will not interfere with the span wires or switches. In case, however, the trolley should be thrown from the wire and between the regular line-wire and a switch-wire while the car is in motion the spring-finger B' will yield and be readily pressed up against the trolley-arm, so that the wheel may readily pass out from the switch without injury thereto. The fingers B' are of metal and are in electrical circuit with the conductor, passing along or through the arm to the motor.

In case the trolley-wheel is dislodged from the conducting-wire *w* such wire will be caught by one of the inclined guard-fingers B' B' and will pass down to the angle at its junction with the trolley-arm, as indicated by dotted lines. My adjusting or replacing device is now brought into operation, and by means of it the wire can be quickly replaced in the groove of the trolley-wheel through the medium of a rope passing down into the car.

A longitudinal guideway F is secured by rivets or other means to the trolley-arm and

is provided with inwardly-turned flanges *f*, so as to form an open slot and lateral recesses, serving as a guideway for the forked slide *G*. This slide *G* is constructed with a longitudinal base-plate *G'*, provided with lateral flanges which fit in the recesses of the guideway *F*, as shown in Fig. 3, and to the lower end of said plate is attached a coiled retracting-spring *l* by means of a pin or rivet *g''*. The spring *l* will in practice be secured at its lower end to the trolley-arm *A*. The replacing-slide *G* is provided at its upper end with inclined lateral forks *g g*, curved at their outer ends. At the lower ends of forks *b b* of the trolley-arm and below the wheel *C* there is fixed a pulley *m* upon the axle *n*, journaled in said forks, as shown in Figs. 1 and 2. Over such pulley is passed a rope or chain *k*, which at its lower end is attached to an eye *h*, secured to the slide *G*, as shown in Fig. 2, said rope or chain *k* passing down through the trolley-arm *A* and thence through its post *T* upon top of the car *P*, between the rollers *t*, where it is secured to ring *h'*. To said ring *h'* there are also secured two ropes *k'' k''*, which pass to the opposite ends of the car, where they may be conveniently pulled by the motorman or conductor for raising the replacing-slide *G*. As the slide *G* is raised in the guideway *F* it will catch the misplaced wire *w* and carry it up just beyond the periphery of the trolley-wheel *C*, so that it will be lodged in the groove of the wheel as the slide is retracted by the coiled spring *l*. The upwardly-inclined forks *g g* of the slide effectively center the wire over the groove of the trolley-wheel when said slide is properly raised by pulling upon the rope *k*. The rope *k''* can be quickly reached at any part of the car or upon the front and rear platforms thereof and pulled for raising the slide *G* to replace the wire in the groove of the trolley-wheel. The longitudinal base-plate *B* of the guard-fingers is provided with a longitudinal rib *b'*, flush with the forks *b*, so that the wire *w* can be raised, without any impediment, by the slide *G*.

My adjusting and replacing device can be quickly manipulated and will save much time and annoyance in replacing the trolley-wheel in contact with the wire. It is very effective in operation and is not liable to get out of order.

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

1. The combination with a trolley-arm and trolley-wheel carried thereby, of a pair of lat-

eral upwardly-inclined guard-fingers each composed of a part rigidly secured to the trolley-arm and a connected yielding portion adapted to be pressed against the side of the arm and terminating below the outer periphery of the trolley-wheel, substantially as described.

2. The combination with a trolley-arm and trolley-wheel carried thereby, of a pair of lateral upwardly-projecting guard-fingers terminating below the outer periphery of said wheel and having elbow-hinges adjacent to the trolley-arm, which permit said fingers to be pressed inward toward the sides of the arm, substantially as described.

3. The combination with a trolley arm and wheel, of a pair of lateral inclined guard-fingers, terminating below the outer periphery of said wheel and having elbow-hinges permitting them to be pressed inward to the sides of the trolley-arm and springs engaging the movable fingers for returning them to their normal position, substantially as described.

4. The combination with a trolley arm and wheel of lateral inclined guard-fingers and a wire-replacing slide adapted to raise the wire from the guard-fingers and replace it in the groove of the trolley-wheel, substantially as described.

5. The combination with a trolley arm and wheel of a longitudinal guideway, a replacing-slide working therein, and having a forked upper end and means for raising and lowering said slide to replace the wire in the groove of the trolley-wheel, substantially as described.

6. The combination with the trolley arm and wheel, of a forked replacing device adapted to slide longitudinally upon said arm and means for raising and lowering it for replacing the wire in the groove of the trolley-wheel, substantially as described.

7. The combination with the trolley arm and wheel of a guideway on the front of said arm, a forked sliding replacing device *G*, working therein, a spring attached to said device and to the trolley-arm, a pulley upon an axle in the fork of the trolley-arm below the wheel and a rope or chain connected to the sliding device and passing over said pulley down into the car for replacing the wire in the groove of the trolley, substantially as described.

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

CHAS. S. MCINTIRE.

Witnesses:

H. E. PARKER,  
E. B. CLARK.