

(No Model.)

M. WHELESS.
CONDUIT ELECTRIC TROLLEY.

No. 468,166.

Patented Feb. 2, 1892.

Fig. 1.

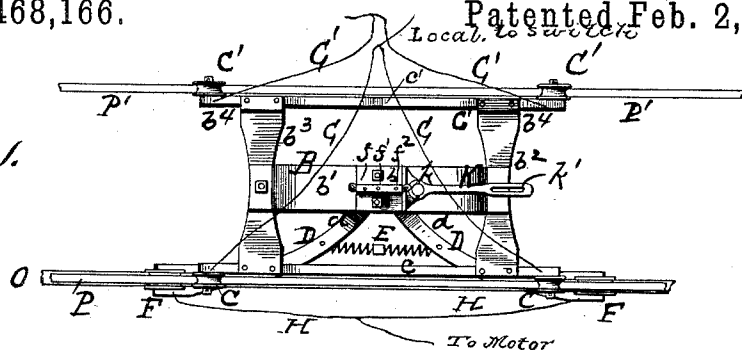


Fig. 2.

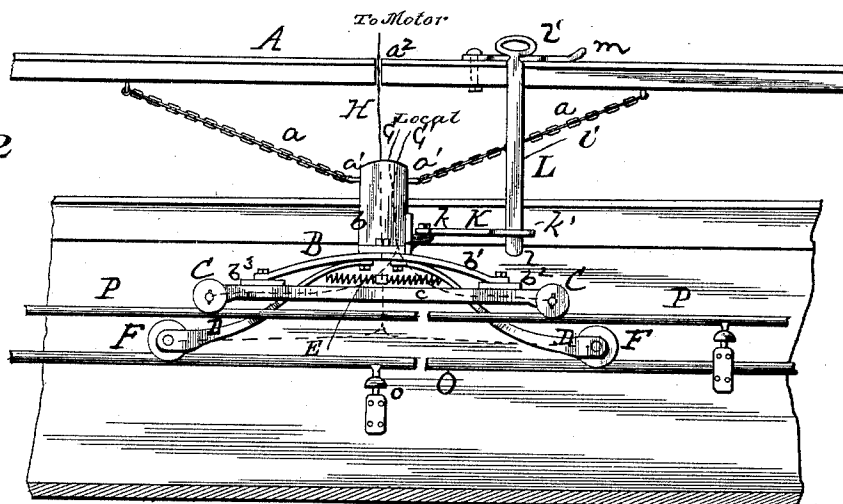
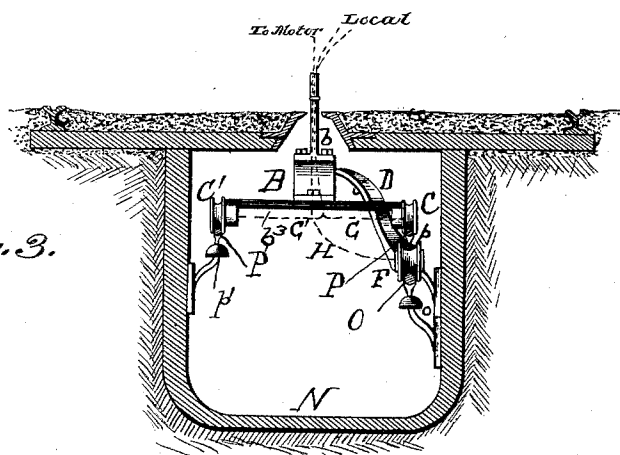


Fig. 3.



Witnesses

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UNITED STATES PATENT OFFICE.

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CONDUIT ELECTRIC TROLLEY.

SPECIFICATION forming part of Letters Patent No. 468,166, dated February 2, 1892.

Application filed December 1, 1891. Serial No. 413,725. (No model.)

To all whom it may concern:

Be it known that I, MALONE WHELESS, a citizen of the United States, residing at Nashville, in the county of Davidson and State of Tennessee, have invented certain new and useful Improvements in Trolleys for Electric Railways; and I do 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, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to an improvement in trolleys for electrical railways; and it consists in a trolley-carriage having the construction hereinafter set forth.

Figure 1 of the drawings represents a top view of the trolley in position, the wires being shown diagrammatically and not in the position which they will occupy. Fig. 2 represents a side view of the trolley, the dotted line showing the correct position of the wires. Fig. 3 represents an end view of the trolley and a cross-section of a conduit, showing the trolley in position.

In the annexed drawings, the letter A indicates the bottom of the car, from which there depend the chains *a a*, to which by eyes *a'* is secured the standard *b* of the trolley-carriage B. This standard *b* is secured to a longitudinal strip *b'*, which in turn is secured to transverse strips *b² b³*. These strips are secured to side bars *c c'*, being at one end insulated from one of these side bars, as shown at *b⁴*. These side bars *c c'* have at their ends journals, on which are secured the wheels or rollers *C C'*. Secured to the under side of the longitudinal strip *b'* are the inner ends *d* of arms *D*, which are connected together by the longitudinal spiral spring *E*. To the ends of these arms *D D* are journals carrying the wheels or rollers *F*. The standard *B* is provided with several vertical passages *f f' f²*. From the rollers *c* and from the rollers *c'* the wires *G G'* respectively run and unite together in pairs, passing through two of the holes *f' f²* in the standard. Wires *H* run from the rollers *F* and uniting together pass through the other

hole *f* and through a hole *a²* in the bottom of the car. The wires *G* and *G'* run to a switch, by which they may be connected together. To the front of the standard *b* is made a lug *k*, to which is secured a stem *K*, having at its end an elongated eye or slot *k'*. The rod *L*, at its lower end *l*, passes through such slot *k'*. The upper end *l'* of this rod *L* passes through the bottom of the car and is held by a catch *m*, which catches around the head or upper end *l'* of the rod *L*. This rod *L* assists in holding the trolley to the car and steadies the trolley.

The various strips of which the trolley-carriage is made are more or less elastic, so as to allow freedom of motion.

In Figs. 2 and 3 this trolley is shown as applied to an underground system of electric railway. In the conduit *N* there is secured a bare working conductor *O* by the insulated bearing *o*. There are also secured in this conduit the bare line-wires *P P'* by insulated bearings *p p'*. These several wires are to be arranged in sections, those of each wire being insulated from one another, the points of insulation of the different sections being coincident.

In the arrangement shown in Fig. 3 the line-wire *P* is in substantially the same vertical plane with the working conductor *O*. In using the trolley *B* with such an arrangement of wires the arms *D* are to be so made that the wheels *F* will come in the same vertical plane with the wheels *C* and under them.

In use the wheels *F F* bear upon the working conductor *O*, the wheels *C* upon the line-wire *P*, and the wheels *C'* upon the line-wire *P'*. When the switch of the wires *G G'* is closed, there is a continuity from the wire *P* through the wheels *C*, wires *G G'*, and wheels *C'* to the wire *P'*. If, therefore, there be any source of electrical energy connected to the wires *P P'*, it will be at once put in action by the closing of this switch, the circuit being thereby completed. Should there be any such circuit containing the switch which controls the supply of electrical energy to the working conductor *O*, as soon as the switch of the line *G G'* is closed and that circuit completed this switch will be closed and the current will

flow into the working conductor O through the wheels F and wire H to the motor on the car.

Having described my invention, what I
5 claim is—

1. The combination of three lines of wire, each line being in sections insulated from one another and two of such lines being parts of the same circuit, with a trolley having three
10 pairs of wheels, one pair for each line of wire, and the two pairs which are for the lines of

wire in the same circuit being insulated from each other, as set forth.

2. The trolley B, having the rod K, with the eye *k'*, in combination with the car A and the
15 rod L, as set forth.

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

MALONE WHELESS.

Witnesses:

THOS. S. HOPKINS,
M. C. LAW.