

(No Model.)

2 Sheets—Sheet 1.

W. H. MORGAN.
TROLLEY FOR ELECTRIC RAILWAYS.

No. 469,899.

Patented Mar. 1, 1892.

Fig. 1.

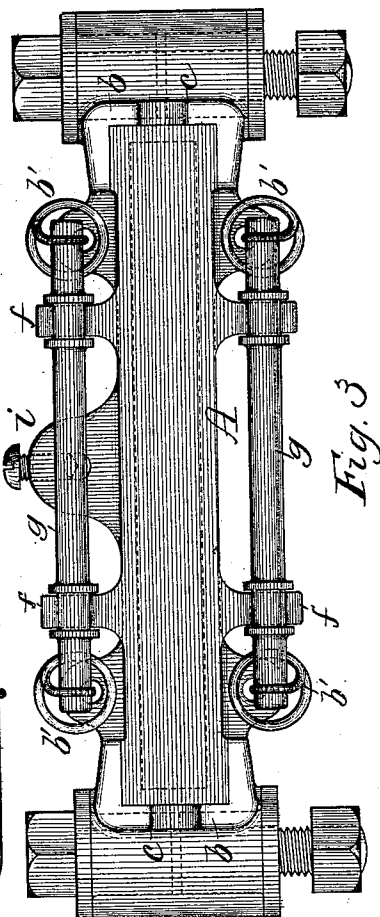
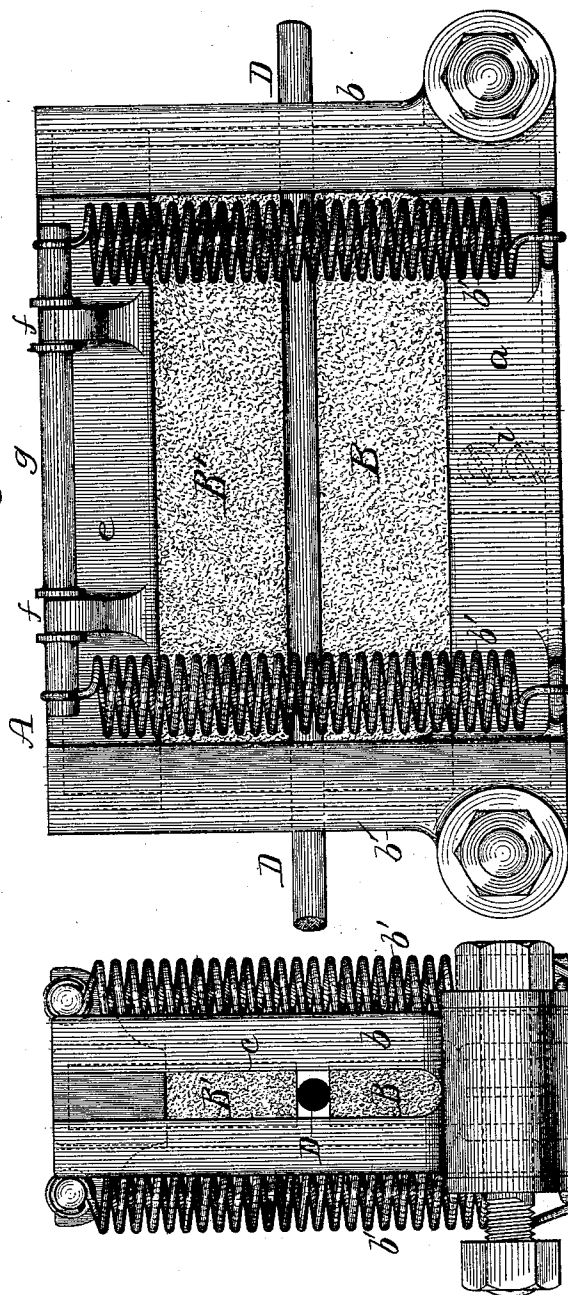


Fig. 3.

Fig. 2.

Witnesses
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Fig. 5.

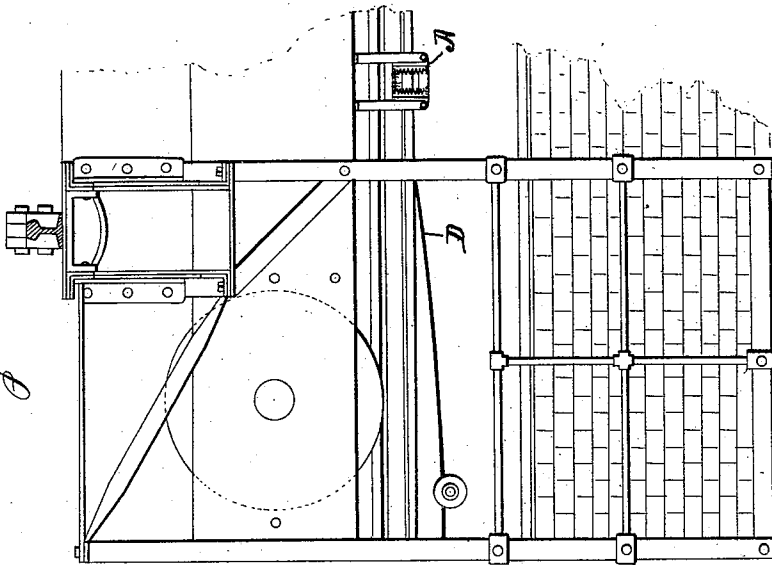
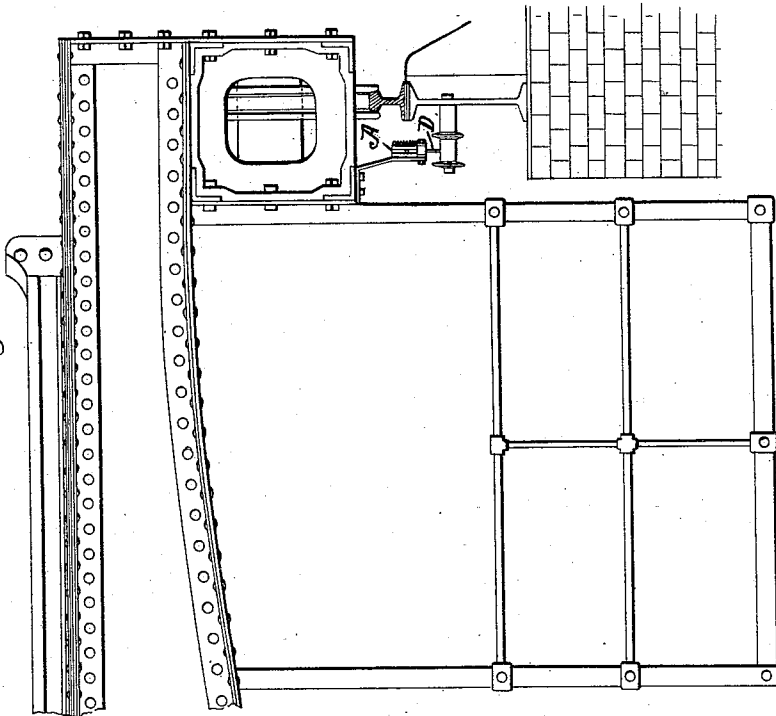


Fig. 4.



Witnesses:
Jas. Hutchinson.
G. F. Downing.

Inventor:
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UNITED STATES PATENT OFFICE.

WILLIAM H. MORGAN, OF ALLIANCE, OHIO, ASSIGNOR OF THREE-FOURTHS
TO THOMAS R. MORGAN, SR., THOMAS R. MORGAN, JR., AND JOHN R.
MORGAN, OF SAME PLACE.

TROLLEY FOR ELECTRIC RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 469,899, dated March 1, 1892.

Application filed June 24, 1891. Serial No. 397,353. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. MORGAN, of Alliance, in the county of Stark and State of Ohio, have invented certain new and useful Improvements in 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.

My invention relates to trolleys for electric railways, and more particularly to improvements in trolleys designed for use in connection with overhead electric traveling cranes, the object of the invention being to provide means whereby the wearing parts of the trolley or traveler can be readily and quickly removed and replaced when worn; and it consists in the parts and combinations of parts, as will be more fully described, and pointed out in the claims.

The trolleys or travelers ordinarily used for taking the current from the line-wire consist of an upwardly-pressed roller or shoe carried on the upper end of a pole and designed to bear against the underside of the wire. Other forms consisting, essentially, of a series of horizontal wheels held in a yielding frame and making contact with the sides of the line-wire have also been used. All of these forms are, however, designed to be used in connection with a line wire or conductor rigidly secured at intervals to insulated supports and constructed to freely pass said supports. My device differs from these in that it is designed particularly for use in connection with a line wire or conductor which is unsupported between its ends, or at least not secured at regular intervals to insulated supports. It is preferably supported at regular intervals on supports, but is not secured thereto, and is free to be elevated above said supports by the trolley as the latter travels back and forth.

In the accompanying drawings, Figure 1 is a view in side elevation of my improved trolley. Fig. 2 is an end view of same. Fig. 3 is a plan view. Fig. 4 is a view in end elevation, and Fig. 5 is a side view showing the trolley carried by a traveling crane.

A represents a metal frame consisting of a bottom *a* and ends *b*, the said bottom and ends

being preferably grooved or guttered on their inner faces to receive the contact-shoes B B'. The ends *b* are also slotted, as shown at *c*, Fig. 2, from their upper ends to near their lower ends for the passage of the line-wire D.

The trolley or contacts can be rigidly or yieldingly secured to the traveling crane, or to an attachment or projection carried by the crane, as shown in Figs. 4 and 5, and is situated in a plane slightly higher than the line wire or conductor, so that the latter is lifted off the insulated supports by the trolley as the latter moves from one end of its travel toward the opposite end. After the trolley passes the insulated support the wire settles down onto the supports, where it remains until again lifted by the trolley. While the insulated supports are not essential they are desirable, as they not only take considerable strain off the wire, but they also by taking up the sag of the wire prevent the same from swinging and coming in contact with adjacent metallic parts.

I make no claim in this application to the insulators and the manner of supporting the line wire or conductor, as the same forms the subject-matter of my application, Serial No. 397,354, filed June 24, 1891.

The contact-shoes B B' are preferably made of carbon or of a composition in which carbon is in excess. Other electrical conducting materials, however, would answer all purposes. These shoes are preferably rectangular, as shown, and fit within the grooves or gutters formed in the sides and bottom of the frame A, and are held in place by the upper removable part *e* of the frame A. This plate *e* is preferably recessed on its under side to fit over the top of the upper shoe B'; but it will be seen at a glance that the recessing of the upper plate is not essential, as it will perform its function of yieldingly holding the top shoe B' against the wire *d* if not recessed. The ends of this plate *e* rest in the grooves on the inner faces of the ends *b* of the frame, and hence is prevented from lateral displacement, and is provided on its opposite ends with the lateral projection *f*, which latter are provided on their upper sides with curved recesses for the reception of the bars *g*, carried by the springs

5 b' , the lower ends of which are secured to the
 bottom a of frame A . Thus it will be seen
 that the upper shoe is yieldingly held in place
 by the springs b' , which latter not only oper-
 10 ate to retain the movable top in contact with
 shoe B' , but also operate to take up or com-
 pensate for the wear on both contact-shoes.
 The same wire or conductor, as shown in Figs.
 1 and 2, passes through the ends of the frame
 15 A and between the shoes $B B'$, and as the
 shoes are long and engage the wire through-
 out their entire length there is no danger
 whatever of sparking. The current is con-
 ducted to the motor by a wire leading from
 binding-post i .

To remove the shoes for renewing same, it
 is simply necessary to lift bars g out of their
 seats in projections f . This leaves the top e
 and shoes $B B'$ free to be removed. After
 20 they have been removed or repaired they can
 again be locked in place by simply placing
 the top plate in position and locking it by the
 springs.

It is evident that numerous slight changes
 25 in the construction of the several parts might
 be resorted to without departing from the
 spirit of my invention. Hence I would have it
 understood that I do not confine myself to
 the exact construction shown and described,
 30 but consider myself at liberty to make such
 changes and alterations as fairly fall within
 the spirit and scope of my invention.

Having fully described my invention, what
 I claim, and desire to secure by Letters Pat-
 35 ent, is—

1. A frame carrying two contact-shoes, one
 of which is removably secured in place by a
 spring-pressed plate, substantially as set forth.
2. A frame carrying two wearing-shoes en-

gaging the wire on opposite sides, one of said 40
 shoes being held in place and in contact with
 the wire by a spring-pressed plate.

3. A trolley consisting, essentially, of a frame
 and two shoes, each shoe having a straight 45
 flat edge for engaging the wire, one of said
 shoes being rigidly supported and the other
 yieldingly held in contact with the line-con-
 ductor by spring-pressure, substantially as set
 forth.

4. The combination, with a frame carrying 50
 a wearing-shoe, of a movable wearing-shoe
 and a spring-pressed plate for holding the lat-
 ter in place.

5. The combination, with a frame carrying
 a wearing-shoe, of a movable wearing-shoe, a 55
 movable plate bearing against one edge there-
 of, and springs for holding the plate in con-
 tact with the shoe.

6. The combination, with a frame having
 slotted ends, of two wearing-shoes located 60
 within said frame and engaging the wire on
 opposite sides, one of said shoes being held in
 place and in contact with the wire by a spring-
 pressed plate.

7. The combination, with a frame having 65
 slotted ends and the two carbon wearing-
 shoes, of the removable plate forming one side
 of the frame, the bars engaging projections
 on the removable plate, and springs attached
 to the bars, substantially as set forth. 70

In testimony whereof I have signed this
 specification in the presence of two subscrib-
 ing witnesses.

WILLIAM H. MORGAN.

Witnesses:

T. R. MORGAN, Sr.,
 FRANK E. DUSSEL.