W. L. BOYER.

PROTECTING DEVICE FOR ELECTRIC RAILWAY PLOWS.

APPLICATION FILED MAY 1, 1912.

1,037,421.

Patented Sept. 3, 1912.

2 SHEETS—SHEET 1.

Fig. 1.

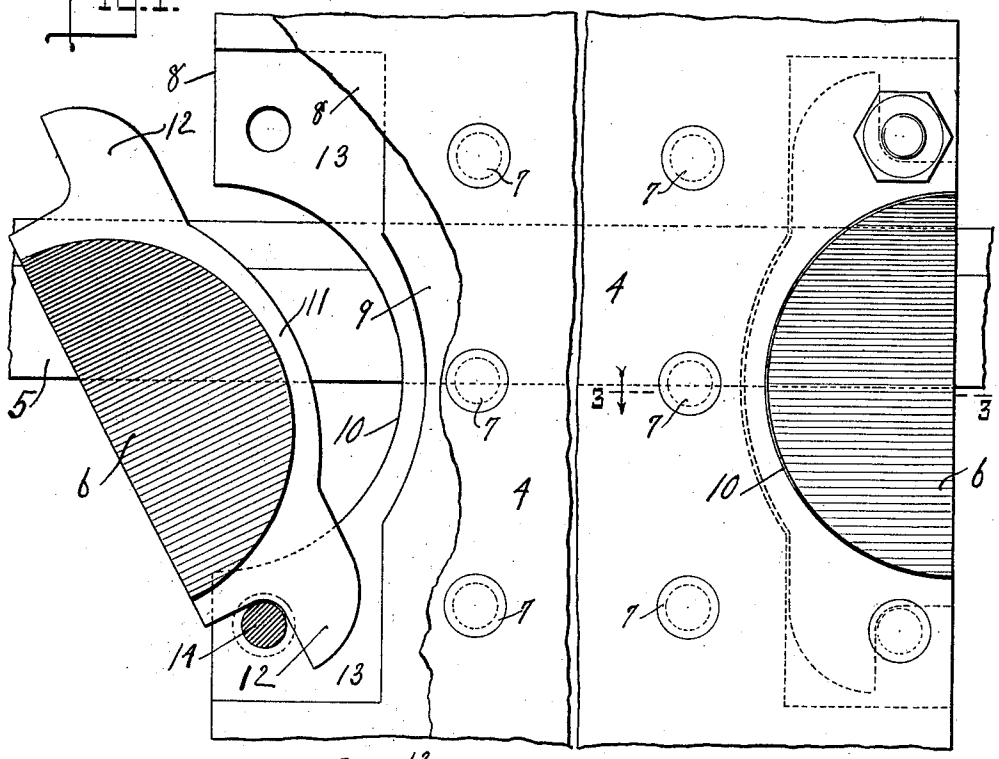


Fig. 2.

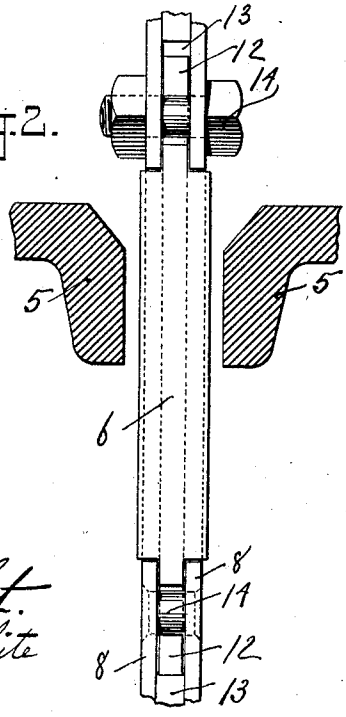
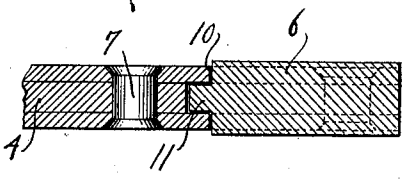


Fig. 3.



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2 SHEETS—SHEET 2.

Fig. 4.

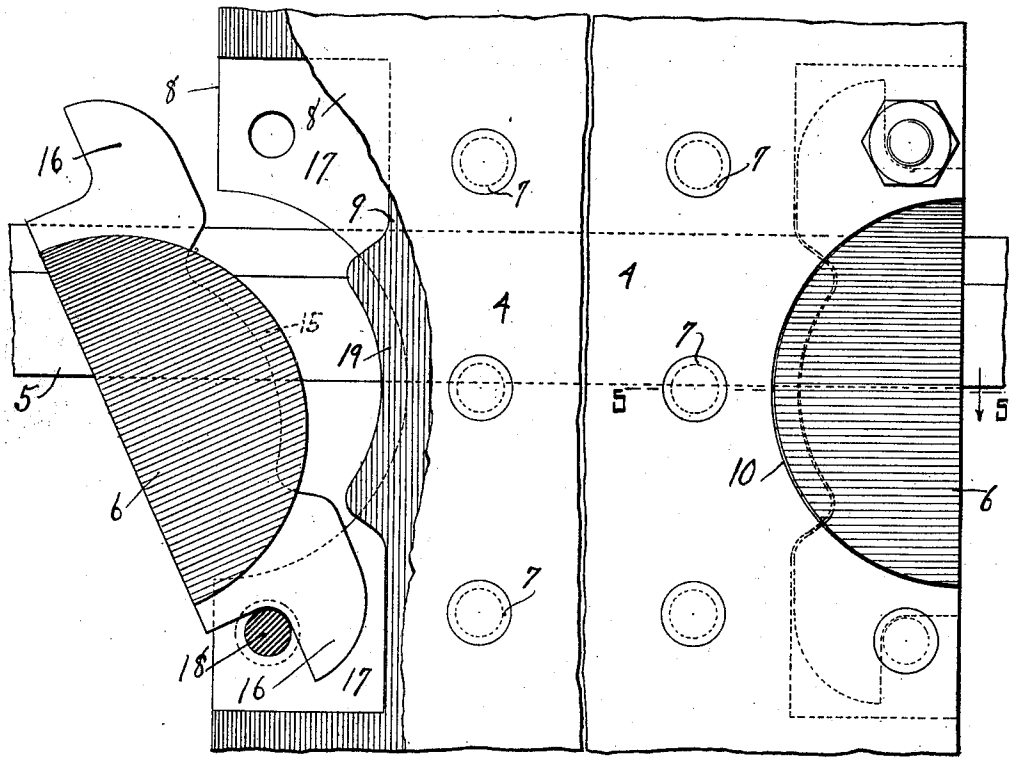
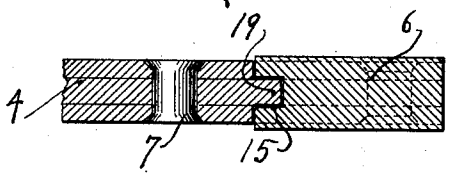


Fig. 5.



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PROTECTING DEVICE FOR ELECTRIC-RAILWAY PLOWS.

1,037,421. Specification of Letters Patent. Patented Sept. 3, 1912.

Application filed May 1, 1912. Serial No. 694,532.

To all whom it may concern:

Be it known that I, WARREN LANIUS BOYER, a citizen of the United States, and a resident of Kingston, in the county of Ulster and State of New York, have made and invented certain new and useful Improvements in Protecting Devices for Electric-Railway Plows, of which the following is a specification.

My invention relates to contact devices, or plows used in electric railways of the type wherein an underground conduit with two spaced rails which thereby provide a slot in the surface of the roadway is employed; and the object thereof is to provide protection against wear, abrasion, or other injury for the plate or bar of the plow carried by a car, and which plate extends through the slot and carries a contact shoe at its lower end, so that the said plate or bar will not be worn away or otherwise injured by contact with the spaced slot rails.

With the above and other objects of invention in view, my invention consists in and includes an auxiliary detachable wear resisting element in combination with and carried by the contact carrying plate or bar of the plow, the location and arrangement of said wear resisting element being such that it, and not the plate or bar aforesaid, will come into contact with the slot rails and receive the wear and injury due to contact therewith; from which it follows that the bar or plate is protected from injury due to contact with the slot rails, and that when the wear resisting element has become worn to such an extent that it will no longer protect the plate or bar of the plow, it may be readily removed and replaced by a new one.

The preferred embodiment of my invention is illustrated in the drawing accompanying and forming a part of this application, although it will be understood that my invention includes such variations and modifications of the particular construction shown, as will be obvious to those skilled in the art to which my invention relates.

In the drawing: Figure 1 is a view showing a portion of a plow for electric railways equipped with my improved wear resisting member, the view being in side elevation with certain parts broken away to show internal construction; Fig. 2 is a view showing a section upon a vertical transverse plane; Fig. 3 is a view showing a section upon a horizontal transverse plane indicated by the line 3—3, Fig. 1; Fig. 4 is a view similar to Fig. 1 but showing a slightly modified form of my improved wear resisting member; and, Fig. 5 is a view showing a section upon a horizontal transverse plane indicated by the line 5—5, Fig. 4.

Referring to the drawing, the numeral 4 designates that portion of a plow for electric railways which extends through the slot provided at the top of a conduit by the spaced slot rails 5, and which member carries or supports a contact shoe, not shown, which contacts with conducting rails located within the conduit in accordance with the usual practice in the art of underground electric railway construction. The portion 4 is hereinafter referred to as a supporting member, or support, because of its function in supporting the contact shoe.

The supporting member is not designed to contact with the slot rails, although sidewise or rocking motion of the car which carries the plow frequently throws the support against the slot rails, and the said support is particularly apt to rub against the slot rails when the car passes around a curve. This contact between the supporting member and the slot rails causes the said member to wear very rapidly, and, as the thickness of the support is limited to about ¾ in. or less, the same is frequently worn so thin as to break at the point where it is worn by the slot rails after being in use for a short time.

In order to protect the supporting member from wear, one or more wear resisting members 6 are detachably secured to said support, so that when they become worn to such an extent as to no longer afford protection to the supporting member, they may be readily removed and a new and unworn wearing member substituted therefor, the location of said wear resisting member being such that it contacts with the slot rails when the support moves sidewise or toward the rails. The supporting member 4 is commonly made comparatively long in the direction in which it moves, as is indicated by the fact that the central portion of Fig. 1

is broken away, in order to secure sufficient strength to resist the strains to which it is subjected, and it is recommended that a wear resisting member 6 be located at each end thereof, as shown in Fig. 1 of the drawing.

The supporting member of plows which I have designated as a whole by the reference numeral 4 is commonly made up of a plurality of plates secured together by rivets 7, the outside plates 8 being spaced apart from one another by a central plate 9. This plate construction in addition to the advantages of providing a strong and easily constructed support, enables me to secure the wear resisting element in place in a simple and effective manner, as shown in Fig. 1, wherein it will be seen that the side plates are cut away to provide a recess 10 shown as semi-circular in form and within which the wear resisting member 6 is located. Said member is also shown as semi-circular in outline, and the same is provided with a centrally located projecting web 11, having two lugs 12, all lying within a central recess 13 larger than the semi-circular recess 10 and formed, in the embodiment of my invention illustrated, by cutting away a portion of the central plate 9. The detachable wear resisting member 6 is held in place upon the supporting member 4 in any way, preferably, however, by securing members 14 extending through the side plates 8 and internal central recess 13 with which members the lugs 12 above referred to engage, as shown in Fig. 1. The lower securing member is preferably in the form of a rivet, while a bolt or key is used as the upper securing member in order that it may be readily removed when a new wear resisting member is to be substituted for one which has become worn to such an extent as to no longer serve as a protection for the supporting member.

In the form of my invention shown in Figs. 4 and 5, the outer plates of the support 4 are provided with semi-circular recesses 10 the same as in the form illustrated in Fig. 1. The inner plate 9, however, instead of being cut away to provide for a web upon the wear resisting member 6, is shaped so as to form a projection 19 which extends into a recess 15 provided in said member; which member is provided with lugs 16 which lie within recesses 17 between the side plates and engage suitable securing means 18 in the same manner as hereinbefore explained.

Having thus described and explained my invention, I claim and desire to secure by Letters Patent:—

1. In a plow for electric railways, a support adapted to extend through the slot of a conduit, and having a transversely extending recess formed in one of its ends, and a second recess communicating with said first mentioned recess and located between the side faces of said support; a detachable wear resisting member located within said first mentioned recess and adapted to contact with the slot rails, and having a part extending into said second mentioned recess; and means for holding said wear resisting member in place.

2. In a plow for electric railways, a support adapted to extend through the slot of a conduit and comprising two plates spaced apart from one another; a detachable wear resisting member a portion of which lies between said plates and which member projects beyond the outer surfaces of said plates and is adapted to contact with the slot rails; and means engaging the portion of said member lying between said plates for securing said member to said support.

3. In a plow for electric railways, a support adapted to extend through the slot of a conduit and comprising two plates spaced apart from one another and having each a recess; a detachable wear resisting member within said recess and adapted to contact with the slot rails, said member having a portion which lies between said plates; and a securing member extending through said plates and engaging the portion of said wear resisting member lying between said plates, as aforesaid, to thereby hold said member in place.

4. In a plow for electric railways, a support adapted to extend through the slot of a conduit and comprising two plates spaced apart from one another and having each a recess; a detachable wear resisting member within said recess and adapted to contact with the slot rails, said member having two lugs lying between said plates; and two securing members extending through said plates and with which said lugs engage to thereby hold said wear resisting member in place.

5. In a plow for electric railways, a support adapted to extend through the slot of a conduit and having a recess formed in one of its ends and located between its side faces; a detachable wear resisting member adapted to contact with the slot rails, and having a centrally located projecting portion extending into said recess; and a securing member in engagement with said projecting portion to thereby hold said wear resisting member in place.

6. In a plow for electric railways, a support adapted to extend through the slot of a conduit, and having a transversely extending recess formed in one of its ends, and a second recess communicating with said first mentioned recess and located between the side faces of said support; a detachable wear resisting member located within said first mentioned recess and

adapted to contact with the slot rails, and having a lug extending into said second mentioned recess; and a transversely extending holding member extending across the second of the above mentioned recesses and with which said lug engages.

Signed at New York, borough of Manhattan, in the county of New York, and State of New York, this 29th day of April, A. D. 1912.

WARREN LANIUS BOYER.

Witnesses:
H. M. WHITE,
A. V. WALSH.