R. K. RICHARDSON.

SAFETY APPLIANCE FOR ELECTRIC RAILWAYS.

APPLICATION FILED SEPT. 21, 1907.

900,958. Patented Oct. 13, 1908.

Fig. 1.

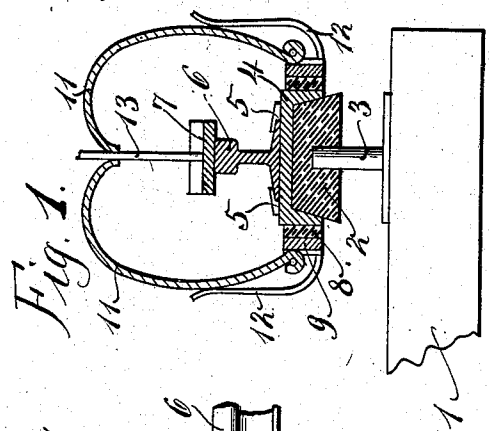


Fig. 4.

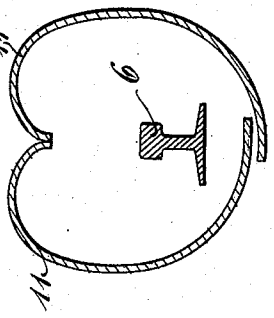


Fig. 2.

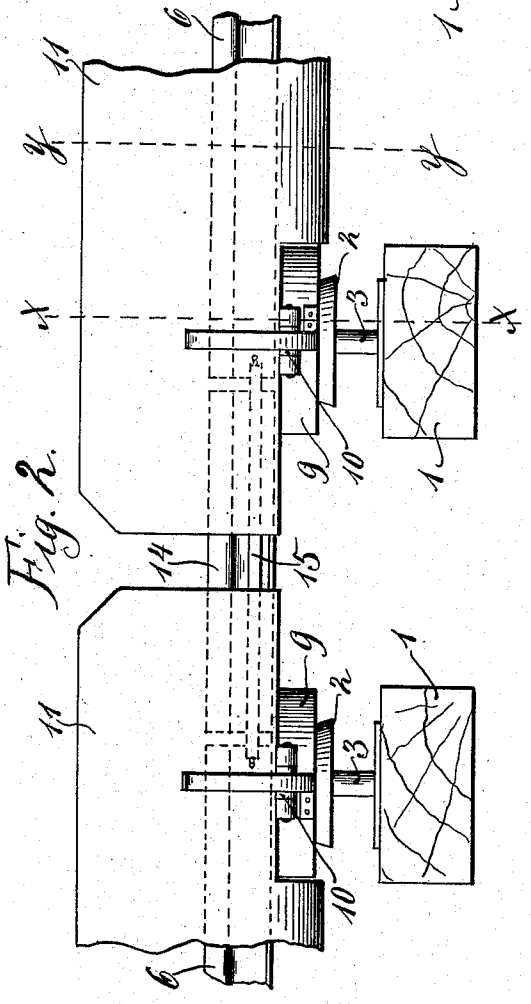


Fig. 5

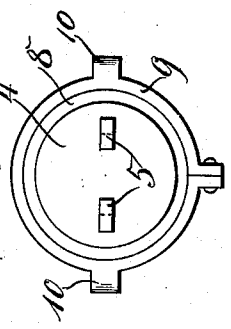
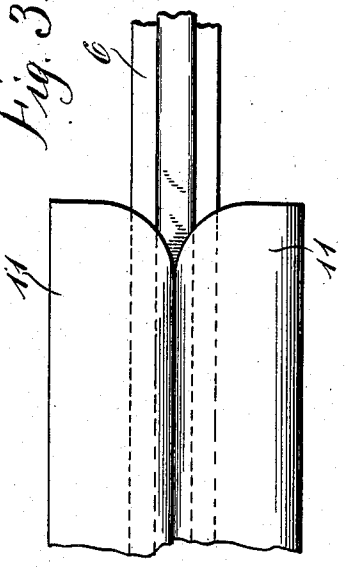


Fig. 3.



Witnesses:

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Inventor

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UNITED STATES PATENT OFFICE.

ROBERT K. RICHARDSON, OF BROOKLYN, NEW YORK, ASSIGNOR OF FORTY ONE-HUNDREDTHS TO JOHN D. GUNTHER AND TEN ONE-HUNDREDTHS TO HENRY PERKINS, OF BROOKLYN, NEW YORK.

SAFETY APPLIANCE FOR ELECTRIC RAILWAYS.

No. 900,958. Specification of Letters Patent. Patented Oct. 13, 1908.

Application filed September 21, 1907. Serial No. 393,925.

To all whom it may concern:

Be it known that I, ROBERT K. RICHARDSON, a subject of the King of England, and a resident of Brooklyn, county of Kings, State of New York, have invented certain new and useful Improvements in Safety Appliances for Electric Railways, of which the following is a full and clear description.

Various devices have been designed and are at present in use for protecting the so-called third rail in electric railways in order to prevent people crossing same from being injured and also to prevent short circuits. Most of these devices, however, require a special construction of the third rail or rather a special form of the structure on which the third rail rests, so that these safety devices could not be used immediately in any electric railway already in use without great expense.

The particular features of the structure according to my invention are that each section of the protecting shields is only alive while being passed by the car. Furthermore by this structure the conductive rail is permanently protected from snow and sleet, and last, my device may be readily installed on systems already in use without expense caused through alterations in order to fit the device to the rail support.

My invention is illustrated in the accompanying drawings, of which

Figure 1 is a transverse section through the rail and the safety device on line x, x in Fig. 2. Fig. 2, is a side view of the device. Fig. 3 is a plan view thereof. Fig. 4 is a transverse section through the device on line y, y in Fig. 2, and Fig. 5 is a plan view of the rail support shown in Fig. 1 in cross-section.

In Figs. 1 and 2, 1 are the cross-ties of the track on which are supported the insulators 2 by means of studs 3. On each insulator 2 is suitably disposed and fastened a cap 4, preferably of iron, which is provided with clamps 5 by means of which the live rail 6, resting on cap 4, is fastened to same.

7 is the plow sliding on rail 6, which plow may be of any form such as commonly used on electric railways for transmitting the current from the rail to the car.

To cap 4 is suitably fastened and insulated therefrom by insulating ring 8, a ring 9, preferably of iron, which is provided with brackets 10 disposed on opposite sides of ring 9.

In each of brackets 10 is hinged a shield 11 so that these shields 11 will run in parallel to the third rail and surround same as shown in Figs. 1, 3 and 4 by having their upper curved portions lying substantially together under normal conditions. These shields 11 are held in this position by springs 12 fixed with their lower ends on ring 9 and bearing with their upper ends upon shields 11.

To prevent access to the bottom of the live rail the shields extend downward between two insulators and overlap each other underneath the rail 6 with sufficient distance between their ends to permit freedom of movement and allow drainage (Figs. 2 and 4). These shields 11 extending on both sides of live rail 6 and inclosing same as described, are of suitable length according to whether they are located on a straight or curved portion of the track, the adjacent ends being rounded to permit the neck 13 of the plow or contact shoe 7 carried by the car when running along to open the shields easily (Figs 2 and 3). Preferably the live rail is also made in sections supported at the parts adjacent to the ends of the shields as shown in Fig. 2 partly in dotted lines. This part is bridged by a dead rail section 14, the live rail sections 6 being connected around dead rail 14 by the usual jumper 15 (Fig. 2).

It will be seen that this structure may be easily applied to any third rail system already in use, particularly to the kind of third rail disposed at one side of an open track, where it is usually exposed.

While I have shown a particular and preferred form of the manner in which the shields are hinged and fastened to the insulators, I do not wish to limit myself to this particular construction, since the manner in which the shields are hinged to the insulator may be adapted to their particular form, the fundamental idea being that the insulator itself is used as support for the shields and that the latter are insulated from the supporting plate or cap of the live rail.

The device may be obviously used to the same advantage in the well-known two contact rail systems in which the plow is in contact with both poles, without departing from the spirit of my invention.

I claim:

1. The combination of a conductive rail, insulating supports for said rail, shields disposed on said supports extending in parallel to and on either side of said rail and insulated therefrom, said shields overlapping each other underneath the foot and normally abutting yieldingly against each other above the head of said rail and means insulated from said rail for holding said shields in their normal position.

2. The combination of a conductive rail, insulating supports for said rail, shields disposed on said supports extending in parallel to and on either side of said rail and insulated therefrom, said shields overlapping each other underneath the foot and normally abutting yieldingly against each other above the head of said rail and springs fixed on said supports insulated from said rails and adapted to hold said shields in their normal position.

3. The combination of a conductive rail, insulating supports for said rail, shields hinged to said supports extending in parallel to and on either side of said rail and insulated therefrom, said shields overlapping each other underneath the foot and normally abutting yieldingly against each other above the head of said rail and means insulated from said rail for holding said shields in their normal position.

4. The combination of a conductive rail, insulating supports for said rail, shields hinged to said supports extending in parallel to and on either side of said rail and insulated therefrom, said shields overlapping each other underneath the foot and normally abutting against each other above the head of said rail and springs fixed on said supports and insulated from said rail adapted to hold said shields in their normal position.

5. The combination of a conductive rail, insulating supports for said rail, shields hinged to said supports extending in sections of suitable length in parallel to and on either side of said rail and insulated therefrom, normally abutting yieldingly against each other above the head of said rail and overlapping each other underneath the foot of said rail, a contact plow coöperating with said rail having a neck disposed to pass between the abutting ends of said shields, said shield sections having either end suitably rounded to cause said neck to open said shields in passing from one section to the following section.

6. The combination of a conductive rail, insulating supports for said rail, shields hinged to said supports extending in sections of suitable length in parallel to and on either side of said rail and insulated therefrom, normally abutting yieldingly against each other above the head of said rail and overlapping each other underneath the foot of said rail, a contact plow coöperating with said rail having a neck disposed to pass between the abutting ends of said shields, said shield sections having either end suitably rounded to cause said neck to open said shields in passing from one section to the following section and means insulated from said rail for holding said shields in their normal position.

New York, N. Y., September 11, 1907.

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Witnesses:

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Octavius Knight, Jr.