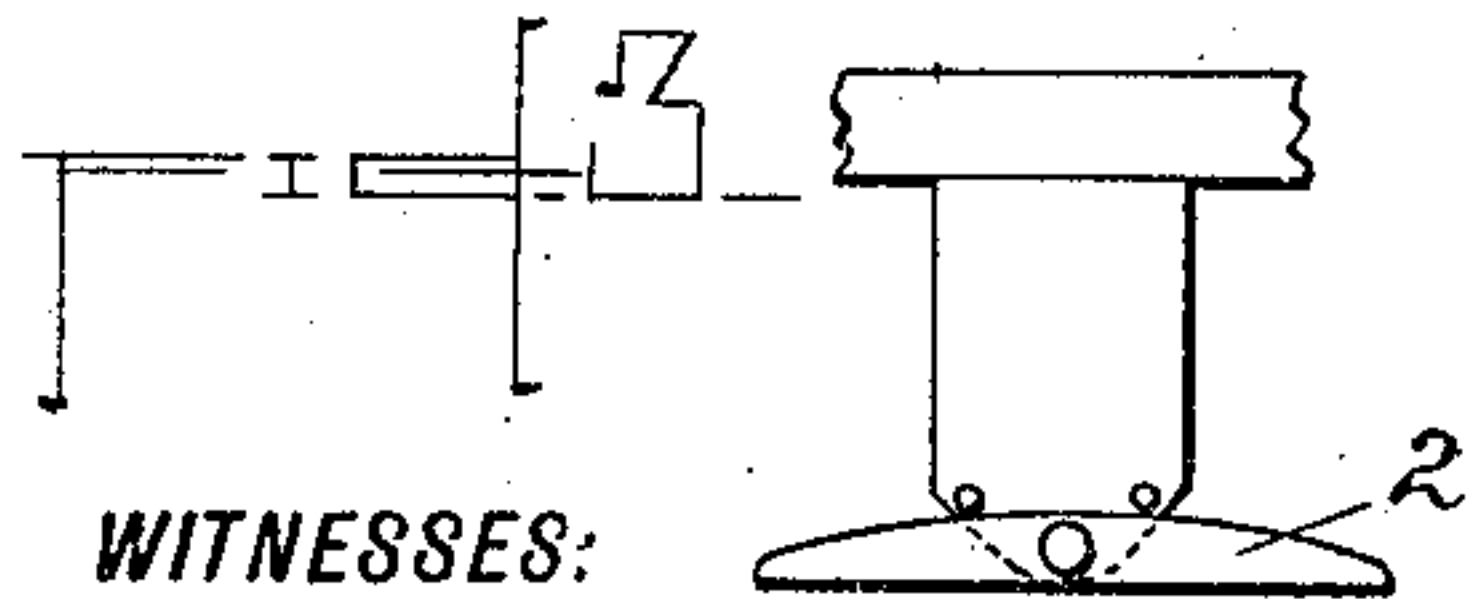
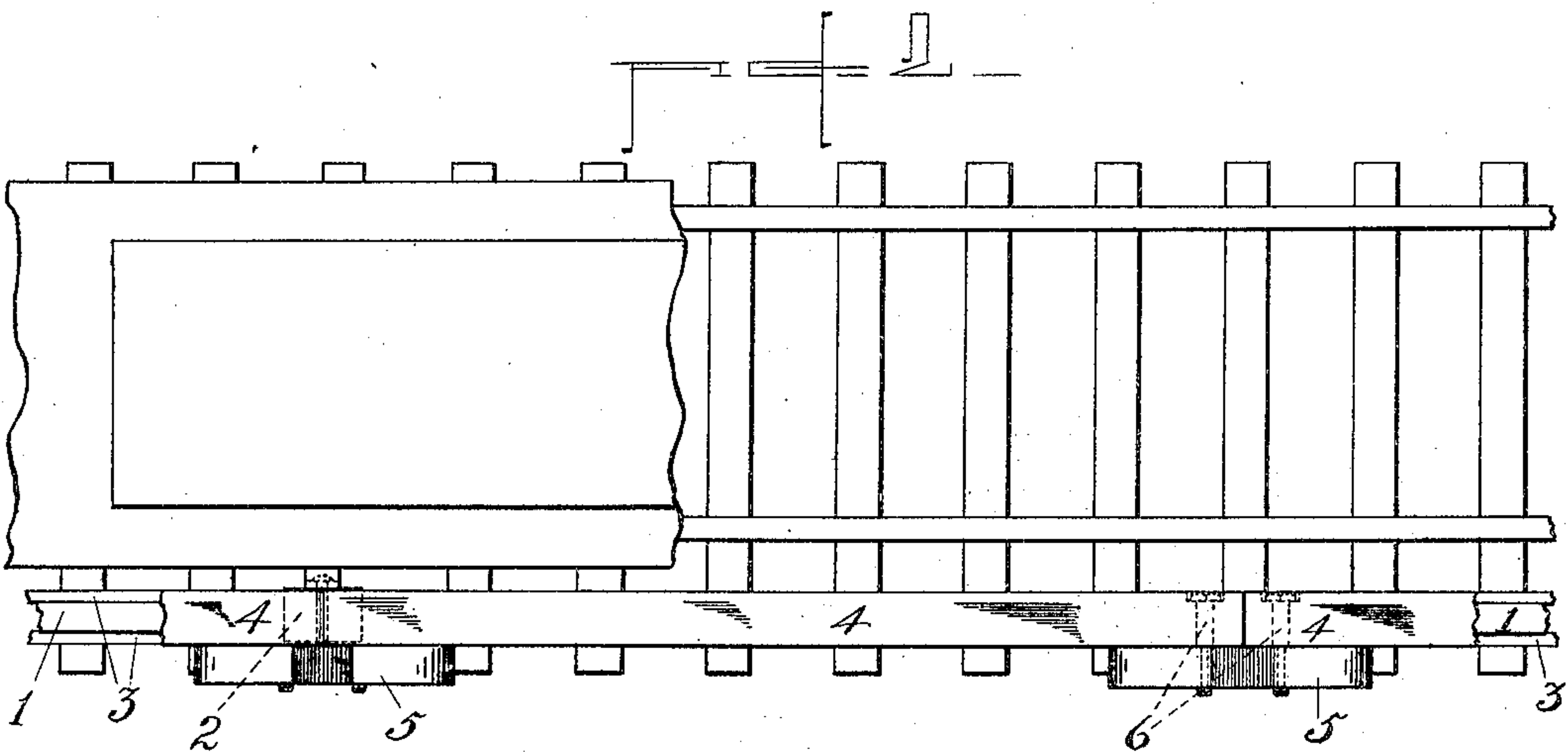
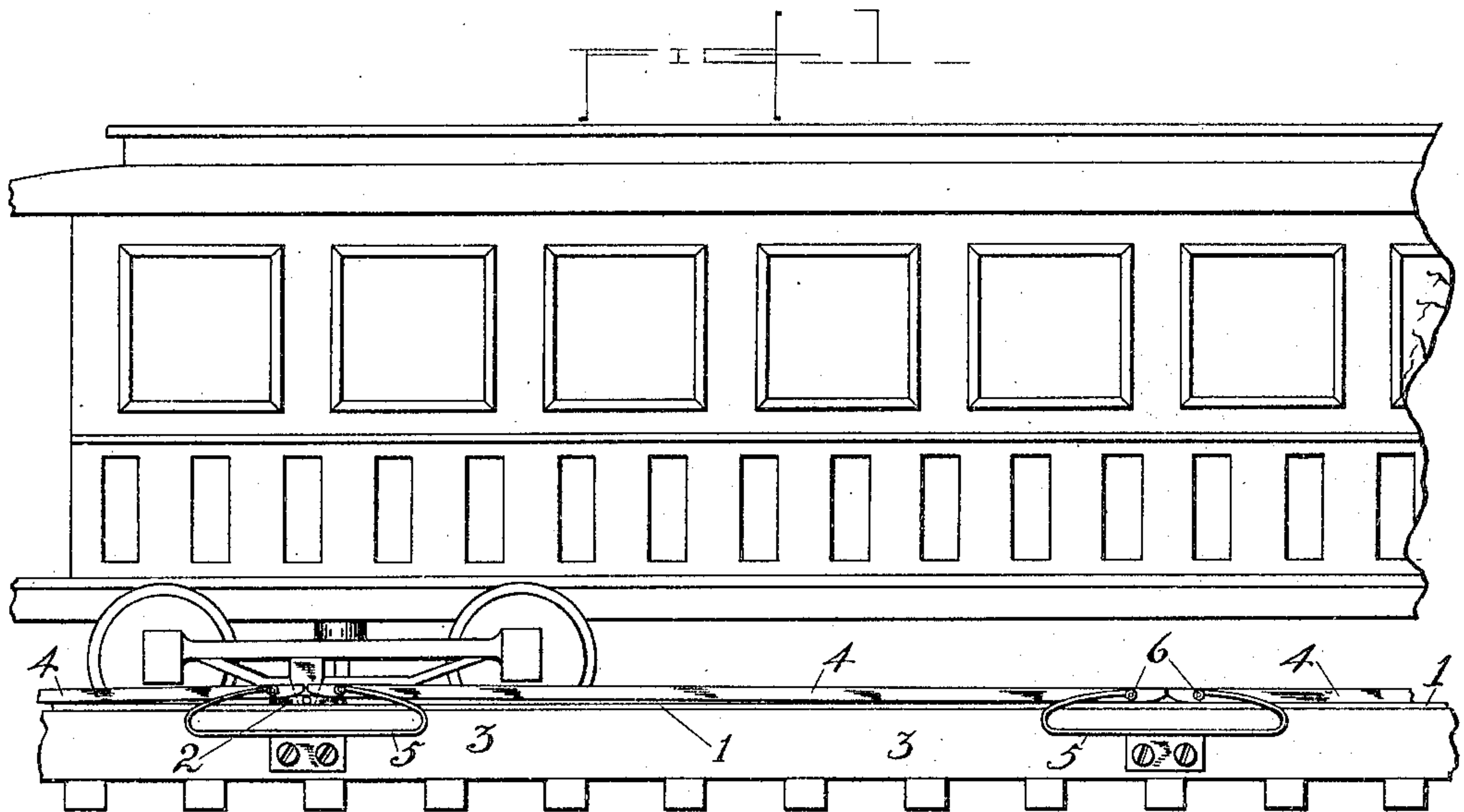


No. 769,862.

PATENTED SEPT. 13, 1904.

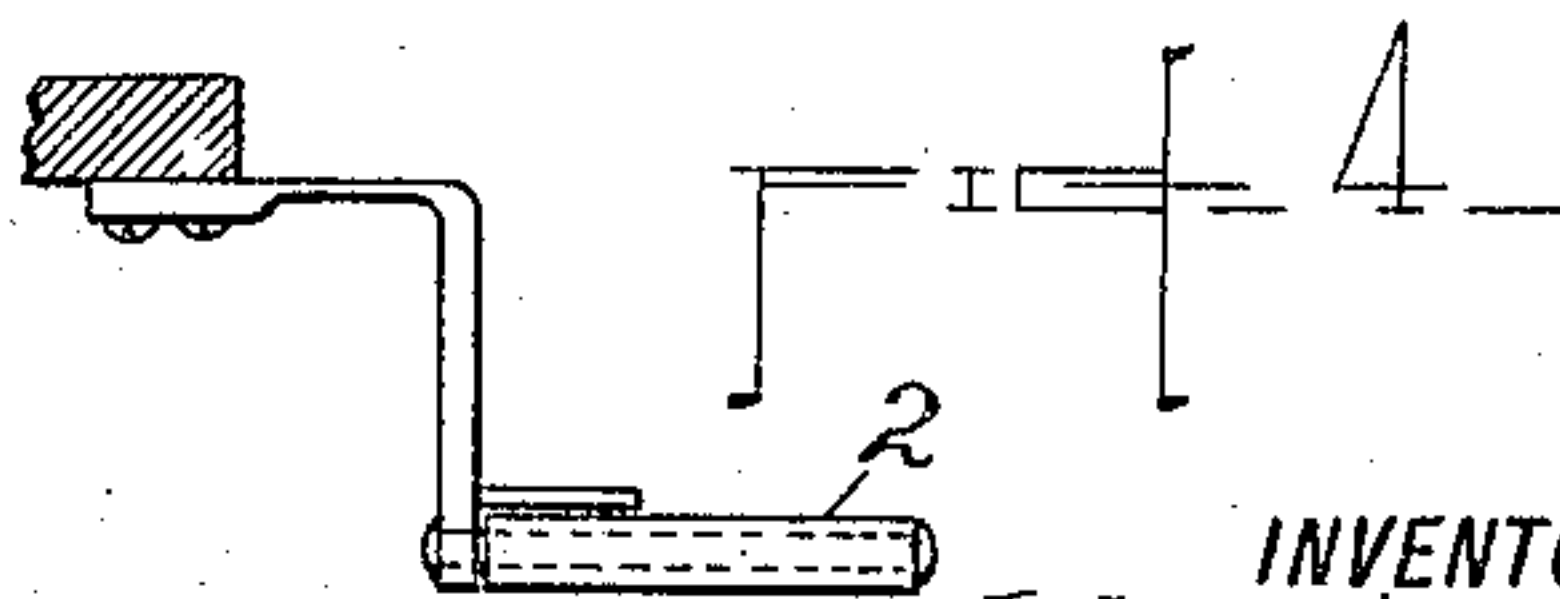
J. H. GUEST.
GUARD FOR THIRD RAILS.
APPLICATION FILED DEC. 12, 1903.

NO MODEL.



WITNESSES:

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UNITED STATES PATENT OFFICE.

JOHN H. GUEST, OF BROOKLYN, NEW YORK.

GUARD FOR THIRD RAILS.

SPECIFICATION forming part of Letters Patent No. 769,862, dated September 13, 1904.

Application filed December 12, 1903. Serial No. 184,883. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. GUEST, a citizen of the United States, and a resident of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Guards for Third Rails, of which the following is a specification.

My invention relates to an improved means for protecting the third rail of electric railways from snow, sleet, or moisture and from accidental contact of foreign objects.

The purpose of my invention is to provide a simple and inexpensive device which shall make it unnecessary to employ sheets or strips of flexible material, like rubber, and which shall be further so organized that the protecting-strip shall at all times cover the rail, both when lifted by the contact-shoe and when resting in its normal position. It has heretofore been proposed to employ protective strips; but in the generality of cases the organization has been such that the strip has been lifted by a sidewise or by a tilting motion, so that at the point where the shoe is in action and at contiguous points the rail will be uncovered and snow or slush permitted to reach the contact-rail.

In my present invention the contact-strips instead of being tilted or lifted sidewise move in a practically perpendicular direction and at all times cover the contact-rail, the distance to which they are lifted being only that of the thickness of the contact-shoe itself, which instead of being supported by a hanger or rod which is vertically over the contact-rail is supported by a hanger or rod located to one side of said rail, while the shoe itself projects laterally therefrom under the protecting-strip.

In those previous constructions wherein the arm or hanger for the shoe is vertically over the rail it is obviously necessary that the protective strip should be moved by a tilting or other action to one side to afford room for the passage of said arm or hanger, so that the rail is more or less exposed.

My invention consists also in a novel manner of supporting the protective strip, whereby I insure cheapness and simplicity, together

with other advantages which will be obvious from the following description.

The invention consists also in the novel combinations of apparatus hereinafter described, and specified in the claims.

Figure 1 shows in side elevation apparatus embodying my invention, one of the protective strips, together with a portion of the abutting strips at either end thereof, being shown. Fig. 2 is a plan of the same apparatus. Fig. 3 is a side elevation illustrating the form of contact-shoe and manner of supporting the same, and Fig. 4 is an end elevation showing the relative location of the hanger or support for the shoe to the shoe itself.

1 indicates a third or contact rail of the usual form, the upper surface of which forms the contact-surface to be engaged by the sole of the contact-shoe 2. Said shoe is preferably of the form shown in Figs. 3 and 4 and is supported by a rod, hanger, or arm, as shown more clearly in Fig. 4, which instead of being vertical over the shoe is disposed to one side thereof, the shoe being arranged to project laterally from said hanger and over the contact-rail 1.

Laterally-disposed guard-rails 3 are preferably provided at each side of the contact-rail and are preferably arranged to closely engage the sides, so as to prevent the entrance of snow or moisture into the space between them.

The guard strips or plates 4 are strips of some flexible insulating material like wood and extend over the whole width of the contact-rail and, if desired, laterally beyond the spaces or boundaries between the sides of the contact-rail and the side guard strips or rails 3 and entirely over said rails. The manner of mounting and supporting these strips 4 is one of the features of my invention. They are attached by bolts 6, passing laterally through the strips to the heads of plate-springs 5, which are in turn secured to the side guard rails or strips 3. These plate-springs perform the double function of a support for the strips 4 and a means for holding them down upon the contact-rail, said springs being given a bias suitable for that purpose. When these

springs are applied, as shown, at the meeting ends of two strips, each may have its opposite or free ends connected with the meeting ends of adjoining strips, as shown.

5 The contact-shoe should be, as shown in side view, Fig. 3, appropriately beveled to adapt it to more easily lift the strips as it travels in contact with the contact-surface of the rail 1 and between the same and the under surface
10 of the strips 4.

To render the passage of the shoe from one strip to the other more easy and quiet, the meeting ends of the strips may also be beveled, as clearly shown.

15 As will be seen, the action of the contact-shoe 2, which is rather thin, is simply to lift the strip 4 in practically a vertical direction, so that even at the parts where the shoe is in action the strip 4 will still cover the third or
20 contact rail practically as effectively as it does where the shoe is not in action.

The springs, as will be seen, serve the double purpose of supporting the strips 4 and keeping them in proper position and of pressing
25 them down onto the contact-rail, from which, however, they are lifted consecutively in practically a vertical line, the relation of the strip to the surface of the contact-rail not being at any time materially changed, excepting that its
30 vertical distance from the said rail is slightly greater where it rests upon the shoe than at other points. In practice these guard-strips are made of rather thin strips or lengths of wood of the usual commercial length—say
35 twelve to fourteen feet—although they might be made of other material having, however, sufficient rigidity to prevent buckling and so that the intermediate portions between springs shall be held firmly down to the rail by the
40 spring action of said supporting-springs, to which they are connected at intervals.

What I claim as my invention is—

45 1. The combination with a third or contact rail for electric railways, of a series of insulating guard strips or plates of wood or similar semirigid material covering the upper surface thereof, supporting-springs to which the same are attached at intervals adapted at the

same time to press the strip down upon the surface of the rail, and a contact-shoe having 50 a hanger or support located to one side of the vertical line passing through the contact-rail, said shoe projecting laterally from the hanger and being adapted as described in its passage under the guard-strips to lift the same verti- 55 cally.

2. The combination with a third or contact rail for electric railways, of a series of guard-strips attached at intervals to supporting blade-springs adapted to press the same down 60 upon the rail, in combination with a contact-shoe projecting laterally from a hanger or support carried to one side of the vertical line passing through the contact-rail.

3. In an electric railway, the combination 65 with a series of insulating guard strips or plates covering the upper surface of the third rail, of supporting-springs adapted to press the same down in a vertical direction and a contact-shoe riding on the rail between the 70 lower surface of the guard strip or rail and the contact-rail and adapted to lift said guard-strip vertically so as to maintain at all times the position of the strip over the rail.

4. The combination, in an electric railway 75 with the third or contact rail, of lateral stringers or guards engaging the side thereof and flush with the upper or contact surface of said rail, a guard-strip covering the said stringers or guard-rails and contact-rail, and a contact- 80 shoe projecting laterally from its support between the guard-strip and contact-rail as and for the purpose described.

5. The combination with a contact-rail, of a series of guard-strips placed end to end and 85 a spring supporting the meeting ends of adjoining strips and tending to press the same toward the contact-surface of the rail.

Signed at New York city, in the county of New York and State of New York, this 11th 90 day of December, A. D. 1903.

JOHN H. GUEST.

Witnesses:

C. F. TISCHNER, Jr.,

E. L. LAWLER.