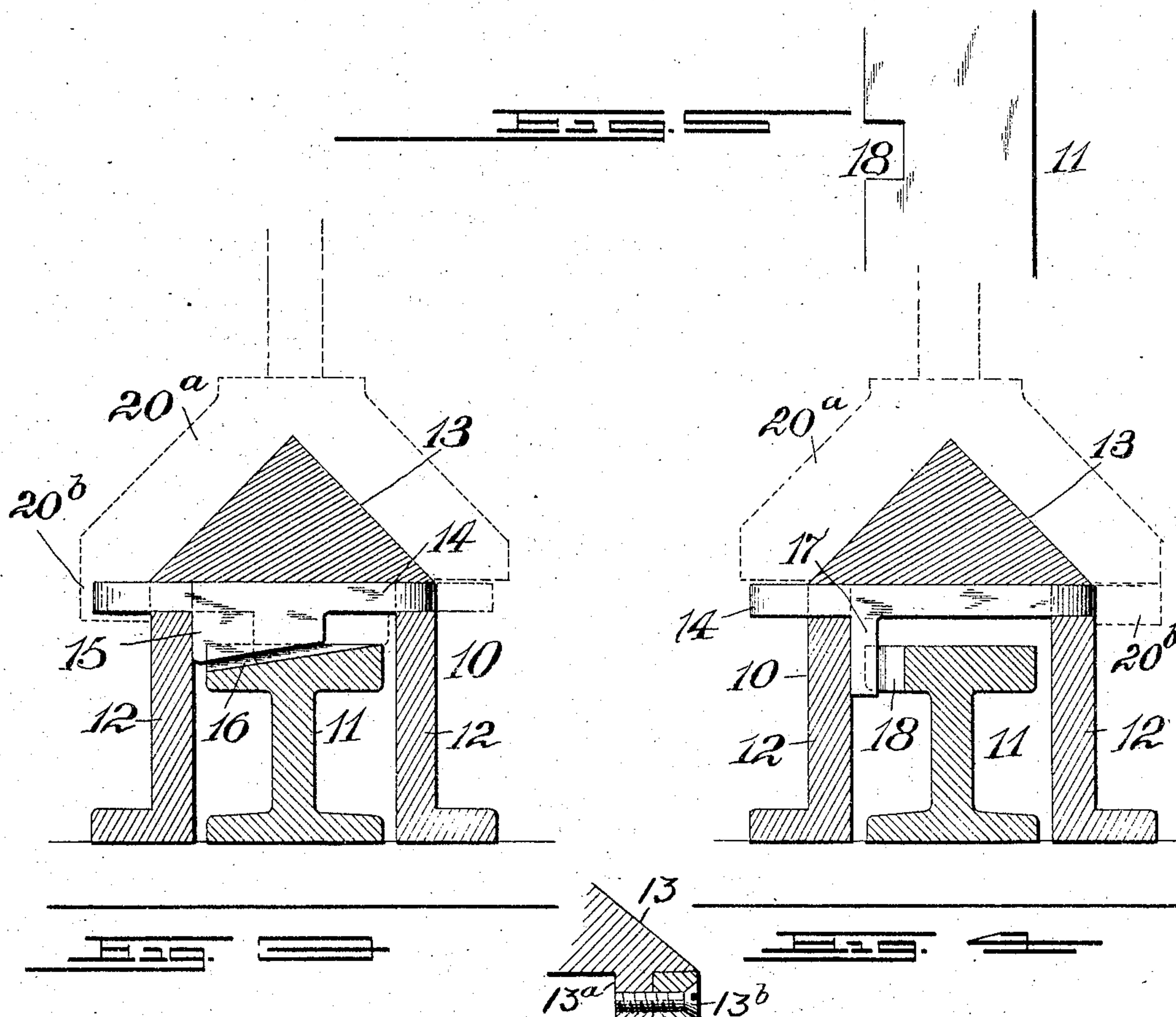
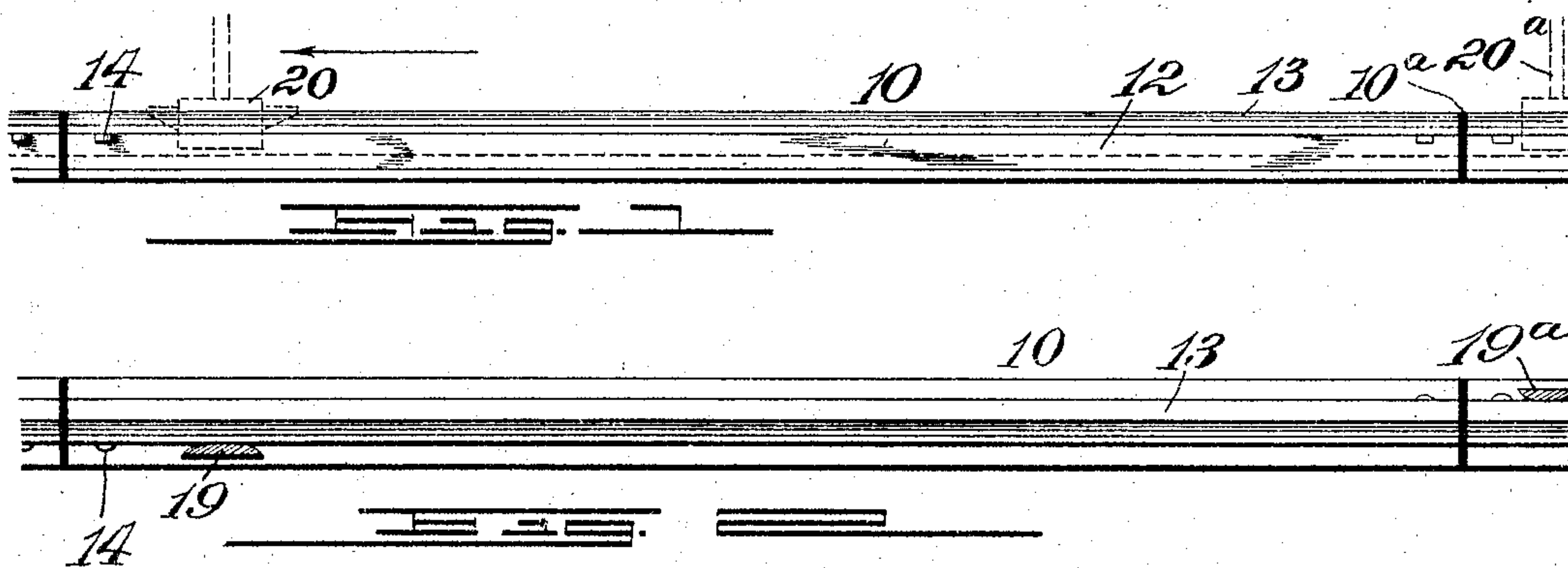


No. 778,256.

PATENTED DEC. 27, 1904.

J. DELA MAR.
ELECTRIC RAILWAY.
APPLICATION FILED MAR. 8, 1904.



WITNESSES:

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Fig. 6.

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ELECTRIC RAILWAY.

SPECIFICATION forming part of Letters Patent No. 778,256, dated December 27, 1904.

Application filed March 8, 1904. Serial No. 197,175.

To all whom it may concern:

Be it known that I, JOSEPH DELA MAR, of the city, county, and State of New York, have invented a new and Improved Electric Rail-
5 way, of which the following is a full, clear, and exact description.

My invention relates to improvements in electric railways; and the object of my invention is to produce electric-railway apparatus
10 which can be used in connection with the ordinary third rail, so as to form a housing for the rail to prevent people from coming into accidental contact with it, to provide means whereby the said housing shall serve as a con-
15 tact-rail, but shall be dead except at the point where a train or car is passing, and to provide a convenient and positive means for cutting the current in and out of the contact-rail as the train or car passes.

20 My invention is also intended to produce a contact-rail which is simple in construction, which can be readily rolled, which is of a shape to afford a convenient means of contact with a plow or shoe, and which is also adapted
25 to shed snow or water with the greatest facility.

Another object of my invention is to construct the switch mechanism in a simple way and to make the mechanism positive in opera-
30 tion.

My invention while particularly intended to work in conjunction with the ordinary third rail can, as will be seen from the description to follow, work in connection with any suit-
35 able conductor which is arranged within the contact-rail or housing.

To these ends my invention consists of certain features of construction and combinations of parts which will be hereinafter described
40 and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views.

45 Figure 1 is a side elevation of my improved rail, showing diagrammatically the position of the contact-plows thereon. Fig. 2 is a plan view of the rail. Fig. 3 is a cross-section through the rail, showing the means for cut-

ting it in and out of circuit. Fig. 4 is a cross-
50 section showing a slight modification of the switching means. Fig. 5 is a plan view of the usual or inner third rail, showing one means of providing an easy contact therewith; and Fig. 6 is a broken detail sectional view
55 showing how the top part of the contact-rail is supported on the side pieces of the said rail.

The rail 10 is a hollow rail which serves as a housing for the third rail 11, which is of the usual character, and the rail 10 is made up in
60 sections suitably insulated from each other, as shown at 10^a. The rail 10 can be made in a single piece; but I prefer to make it in separable parts, the side pieces 12 being constructed with suitable flanges and the contact-strip
65 13 being separable from the sides and secured thereto in any approved manner. A convenient means of connecting the top 13 to the sides 12 is to provide the top with depending
70 lugs 13^a, which fit against the tops of the side pieces 12, and screws 13^b can be passed through the side pieces and into the lugs. The contact or top part 13 is triangular in cross-section, so that it forms a sort of gable-roof
75 which readily sheds snow and ice and at the same time affords a convenient surface for the contact-plow to engage.

Just beneath the top or contact strip 13 and in contact therewith are the switch-arms 14,
80 which slide transversely through the rail and protrude from the sides, the switch-arms being preferably rounded at the outer end, so as to make an easy contact with the plows, and they are constructed so that when their parts
85 which contact with the rail 11 are in contact the switch-arm will protrude from one side of the rail; but when the parts are out of contact the switch-arm will protrude from the opposite side of the rail. The actual contact can
90 be made in several ways.

In Fig. 3 I show the switch rod or arm 14 provided with an integral inclined lug 15,
95 which fits in an inclined transverse recess 16 in the third or live rail 11. When the arm is pushed to the left, as in Fig. 3, the parts are out of contact; but when the arm is pushed in the opposite direction the lug 15 makes a good contact with the bottom of the recess 16. In-

stead of making the inclined recess 16 as shown the rail 11 may have a recess 18 cut vertically through one of its top flanges, as in Fig. 4, and the switch-arm 14 can have a depending lug 17 to enter the recess and contact with the said third rail. Obviously other modifications of shape of the contacting parts can be made without affecting the principle of the invention. It will be noticed that in either case the switch-arm is in constant contact with the part 13 and that by the simple sliding of the arm the circuit between the parts 13 and 11 is made and broken.

I arrange the switch-arms 14 near the ends of the rail-sections, and the car or train will be provided with plows 20 and 20^a, which will follow each other, one serving to cut the current in and the other to cut it out. To this end the plows have depending flanges 20^b, the flange on one plow being on the opposite side to that of the flange on the other plow, and the plows have rounded parts 19 and 19^a, respectively, which are adapted to engage the switch-arms 14 and push them transversely as the plows advance. As illustrated, the first plow 20 will have its contact part 19 strike the switch-arm 14 and push the latter, so as to bring the part 15 or 17, as the case may be, into contact with the third rail 11, and the following plow will strike the switch-arm from the opposite side and throw it back to its original position, thus cutting out the current, and consequently the part 13 of the rail will be alive only as the car or train passes. I have not shown the plows in detail, as any suitable plows can be used; but it will be noticed that the form of the top part of the rail makes an excellent contacting surface and that the plow can ride securely thereon.

I have shown and described a contact-rail which serves as a housing for the conventional third rail 11; but it will be obvious that the form of this inner conductor is not material to the invention, and it is shown in this way to illustrate the fact that my improvements

can be easily applied to existing tracks where the third rail is used.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. In an electric railway, the contact-rail made hollow to serve as a housing and provided with a gable-shaped top portion.

2. The combination with the hollow contact-rail and its contained conductor, of the laterally-sliding switch-arm held in contact with the contact-rail and adapted to engage the inner conductor.

3. The combination with the hollow contact-rail and its contained conductor, of the laterally-sliding switch-arm in contact with the rail, and provided with a lug to engage the conductor.

4. In an electric railway, the herein-described contact-rail constructed to serve as a housing for the conductor, the said rail having a top separable from the sides and the said top being triangular in cross-section.

5. In an electric railway, the combination of the hollow contact-rail having a rigid top, the conductor extending longitudinally within it, and the laterally-moving switch-arms to engage the conductor and switch the current through the top of the contact-rail.

6. The combination with the third or live rail and the rigid conductive housing for the rail, of the switch-arms each composed of a single piece, the said arms being constructed to slide in contact with the conductive housing and to engage the said live rail.

7. The combination of the hollow conductive contact-rail made rigid, of the conductor arranged longitudinally within it, and the switch-arms each of a single piece held to slide in the sides of the contact-rail and to engage the internal conductor.

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Witnesses:

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