

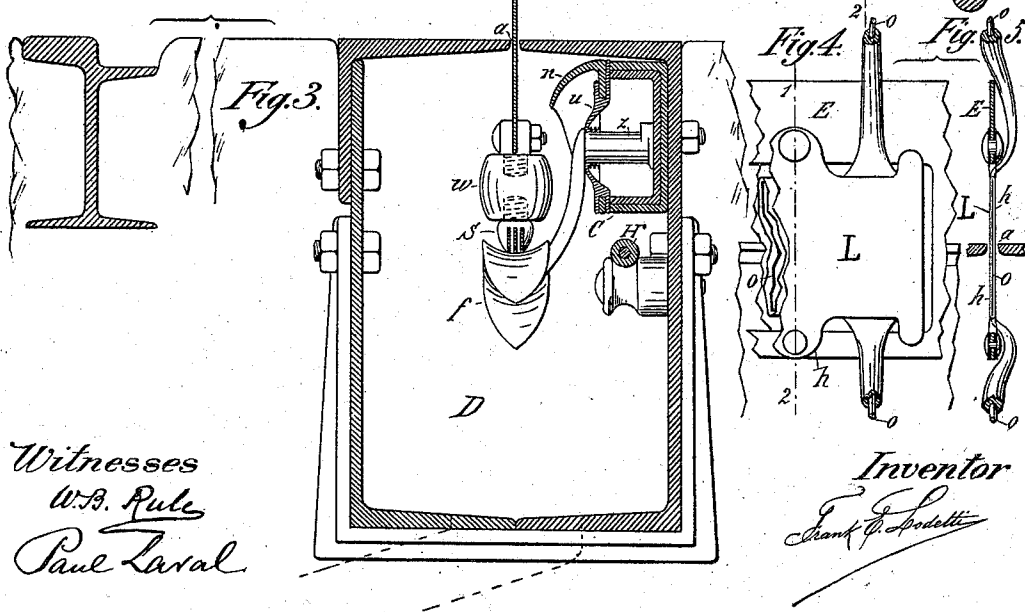
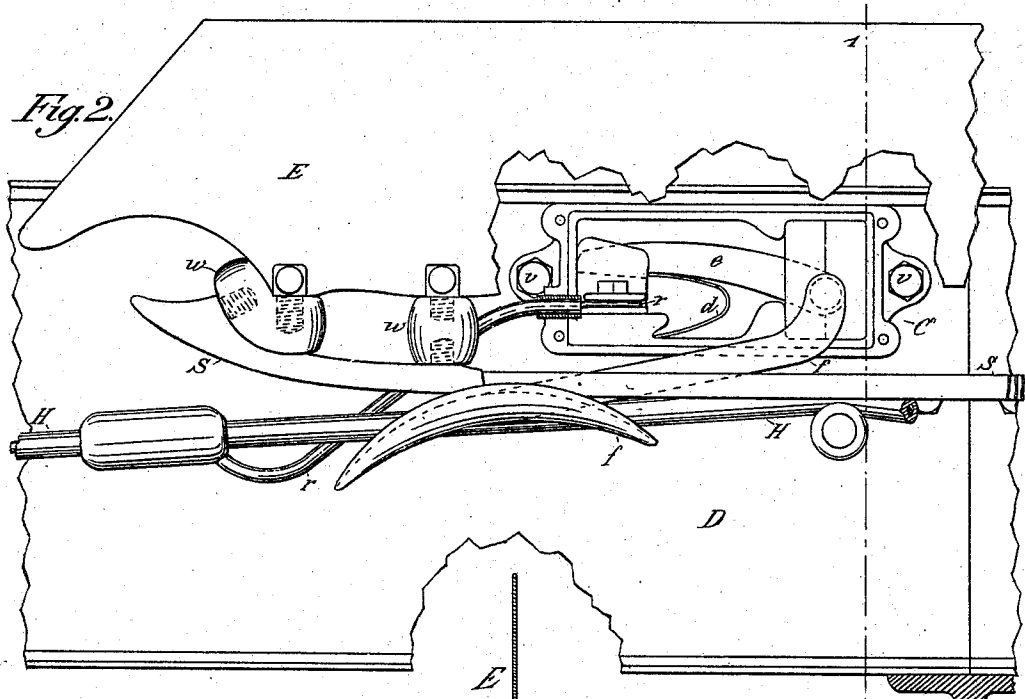
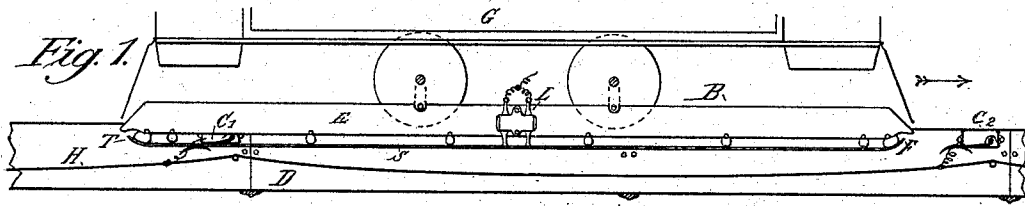
(No Model.)

F. E. LODETTI.

CONTACT DEVICE FOR CONDUIT ELECTRIC RAILWAYS.

No. 535,214.

Patented Mar. 5, 1895.



Witnesses
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CONTACT DEVICE FOR CONDUIT ELECTRIC RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 535,214, dated March 5, 1895.

Application filed May 4, 1894. Serial No. 510,017. (No model.)

To all whom it may concern:

Be it known that I, FRANK E. LODETTI, a subject of the King of Italy, at present residing at Rondout, Ulster county, State of New York, have invented new and useful Contact Devices for Conduit Electric Railways, of which the following is a specification.

My invention relates to an improvement in an underground conduit electric railway, and the objects of my invention are, first, to provide a simple, easy and safe construction of the roads; second, to have a perfect insulated line, absolutely preventing all waste of electricity; third, to afford the easy passage of the cars around curves, crossing other roads and switches; fourth, to provide a system cheaper in construction than the overhead trolley, and, fifth, to lessen the expense of maintenance and operating. I obtain these objects by the methods illustrated in the accompanying drawings, in which—

Figure 1 is a longitudinal section of the road, showing the car, G, with the running sections, B, the conduit D and two switch boxes, C' C², one of which, C', is in operation. Fig. 2 is a longitudinal section of the conduit, D, with a side view of a switch-box, C, the cover of which is removed in order to show the inside parts, and one end of the running section, B, at the moment of working the valve-box, C. Fig. 3 is a transverse section of the road, showing the switch box, C, and the running section, B, in the conduit, D. Fig. 4 is the front view of the flat, insulated conductor, L (Fig. 1), on the guide, E. Fig. 5 is a section of the same.

My system of electric railway has a central conduit, D, with a slot, *a*, about one-fourth of an inch wide. In the conduit, D, is located an insulated electric cable, H, and at the distance of twenty, thirty, or more feet, according to the length of the car, or cars, is bolted to its inner wall and electrically connected to the cable, a series of switch-boxes, C, in each of which a contact switch, *e*, is inclosed. The switch, *e*, is operated by an outside arm, *f*, and when not in contact, is kept at the dead point by the spring, *d*.

When the car is on the road, the running section, B, (Fig. 1) pushes down the arm, *f*, and the switch, *e*, and closes the electric circuit between the cable, H, and the car. A

moment before the back end, T, (Fig. 1) of the running section, B, leaves the switch-box, C', the front end, F, puts in operation the next switch box, C², and thereby secures a continuous contact and transmission of electricity, and at the same time leaves no part of the line exposed, or non-insulated, all the switches ahead and behind the cars being at the dead point.

The running section, B, (Fig. 1) consists of two parts: the guide, E, and the skate, S. The guide, E, is made of a band of steel spring, about one-eighth of an inch thick and about eight inches deep, and of the same length of the car, or cars, of which about three inches of the lower part run in the conduit, and about five inches of the upper part outside of it, and by its flexibility adapts itself to all the curves of the road.

The guide, E, is firmly secured to the non-elastic frame of the axles, in two points, corresponding to the center of the axles.

The skate, S, of the running section is made, preferably, of copper ribbons, placed vertically, and a little apart one from the other, so as to give them the necessary pliancy.

From the running section, B, to the motor on the car, the electric current passes through the insulated flat conductor, L (Figs. 1, 4 and 5,) which is made of a thin, copper plate, or flat copper cord, O, and protected by a sheet of steel, *h*.

The switch-box, C, is acid proof, water-proof and air-tight. All the switch mechanism is thoroughly insulated, and the pinion, *z*, of the arm, *f*, which has only one-sixteenth inch rotary motion, is insulated by a rubber ring, *u*, which acts as a stuffing box.

I claim—

1. In an electric railway, the combination with a feed-conductor having a casing provided with an entering slot, of a vehicle having an elastic guide arranged longitudinally thereof, said guide being adapted to enter and move in the said slot, and a collector depending from the guide throughout its length and attached thereto at intervals and having electrical connections with a motor on the vehicle.

2. A current collector of the class described comprising an elastic guide, a contact device formed of ribbons of conductive material connected thereto at intervals through insulating

media, and a conductor carried by the guide and insulated therefrom and having connections with the contact device and a translating device on the vehicle.

5 3. A current collector of the class described comprising an elastic guide, a flexible contact device formed of ribbons separated by inter-
spaces and connected to the guide by insulat-
ing media and a conductor carried by the
10 guide and comprising a conductive plate hav-
ing an insulating coating and a covering to
resist wear and electrically connecting the
contact device and a translating device on the
vehicle.

15 4. In an electric railway the combination
with an underground slotted conduit, a series
of insulated and water-proof switch boxes,
electrically connected to an insulated electric
cable, of the propelled car or cars carrying a
20 contact device or running section of the same
length of the said car or cars, comprising the
guide made of a spring metallic band running
vertically in the slot part outside and part
inside of the conduit, and the skate or collector
25 of electricity rigidly connected to the said
guide by insulators and consisting of metallic
ribbons of high electric conductivity verti-
cally placed; the said running section by its
special design and adjustment having no ver-
30 tical motion, for the purpose of pushing down

the outside arm of the switch-boxes, but hav-
ing all the necessary pliancy for its adapta-
tion to all the curves of the road, all con-
structed and operating substantially as de-
scribed.

35 5. In an electric railway the combination
with a slotted conduit, a series of insulated
and water-proof switch-boxes electrically con-
nected to the insulated electric cable, the pro-
pelled car or cars with the running section of 40
the same length of the car or cars attached to
the trucks or to the axles in the point corre-
sponding to the middle of the axles and con-
structed so as to bend easily around the curves
of the road and to push down the outside arm 45
of the switch-boxes when the car or cars are
standing or running on them, of the thin flat
conductor connecting the skate or collector of
the running section to the motors on the car
or cars, and located in the guide of the run- 50
ning section and consisting principally of a
metallic thin plate of high electric conduc-
tivity, thoroughly insulated, and protected by
a metallic cover bolted to the guide, all con-
structed and operating substantially as de- 55
scribed.

FRANK E. LODETTI.

Witnesses:

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