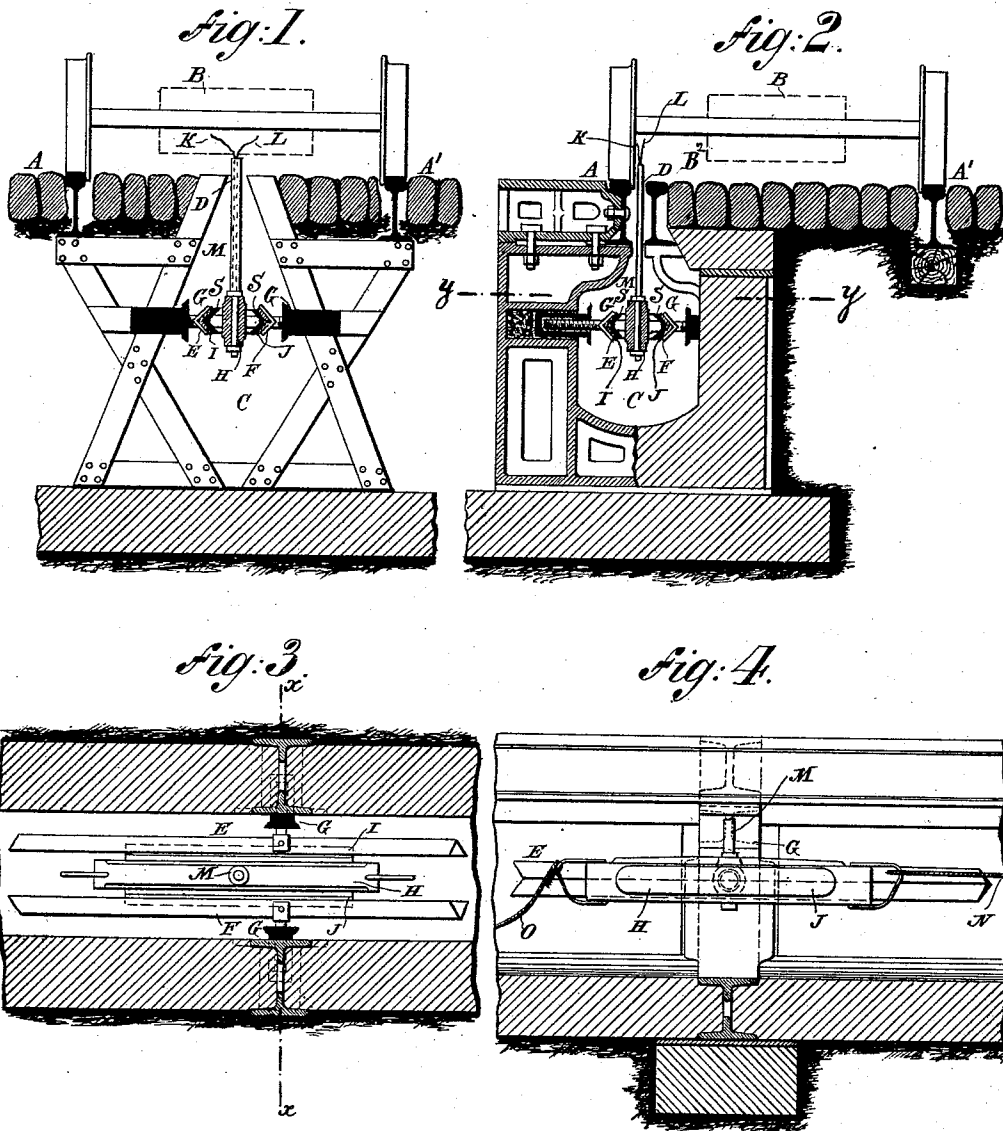


(No Model.)

C. T. H. SCHWIEGER.
CONDUIT FOR ELECTRIC RAILWAYS.

No. 478,026.

Patented June 28, 1892.



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CONDUIT FOR ELECTRIC RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 478,026, dated June 28, 1892.

Application filed September 16, 1891. Serial No. 405,929. (No model.) Patented in Austria-Hungary October 22, 1888, No. 2,722 and No. 2,723.

To all whom it may concern:

Be it known that I, CARL THEODOR HEINRICH SCHWIEGER, a subject of the King of Prussia, German Emperor, residing at Berlin, Prussia, in the German Empire, have invented certain new and useful Improvements in Electrical Railroading with Underground Supply of Current, (for which I have obtained a patent in Austria-Hungary October 22, 1888, No. Tom. 38, Fol. XXII, 2,722/2,723;) and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to electric railways of the type in which the current employed for operating the motors is carried underground in a suitable subway or conduit and the current conveyed to the motors through the medium of a traveling contact-making device.

My invention relates to various details of construction of the railway and subway and to the method and device employed for conveying the current transmitted by the conductors in the subway to and from the motors upon the cars.

In the accompanying drawings, which illustrate my invention, similar letters of reference indicate like parts.

The object of my invention is a construction of electric railway which, while provided with a subway in which are placed the conductors to and from the source of energy and which subway communicates with the street-surface through a slot, will not materially differ, so far as breaking up the surface of the street is concerned, from that of an ordinary street-railway; further, to so arrange electrical conductors under the slot that dirt, which finds ingress into the subway through the slot will not lodge on them; also, to provide means for conveying the current transmitted by the conductors in the subway to and from the motor upon the car without the employment of rigid connections between the current-collector in the subway and the car or motor moving upon rails upon the street-surface.

Figure 1 is a view in elevation of a subway having a centrally-disposed slot. Fig. 2 is a

transverse section taken on the line $x x$ of Fig. 3, showing a subway with a slot disposed at the side close to one of the rails upon which the motor travels. Fig. 3 is a transverse longitudinal section on the line $y y$ of Fig. 2. Fig. 4 is a vertically-longitudinal section of the construction shown in Fig. 2.

In the drawings, A and A' indicate the bearing-rails upon which the motors B travel.

C represents the subway, of which two forms are shown. That in Fig. 1 consists of a series of angle-iron beams bolted together and having a slot D, which communicates with the street-surface and disposed midway between the bearing-rails A and A'.

In Fig. 2 a special form of construction is shown. In this figure the subway is located at the side of the track under the bearing-rail A, and communicates with the street-surface through the slot D, formed between the bearing-rail A and auxiliary rail A².

In Fig. 1 both of the bearing-rails A and A' are mounted upon the subway construction.

In Fig. 2 the bearing-rail A and auxiliary rail A² are mounted upon the subway construction, and the bearing-rail A' upon a longitudinal sleeper.

I do not limit myself in this specification to any special construction of subway or subway and track, as many different forms may be used.

Located within the subway are the two conductors E and F, preferably so shaped as to hold between them and support a movable contact-making device. The conductors shown in the drawings are formed in the shape of two V's turned on their sides with their openings facing each other. The current from the source of energy is transmitted by one of these conductors—as, for instance, the conductor E—and returns to the source of energy by the opposite conductor F. The conductors E and F are supported within the subway by means of the insulators G, which are suitably attached to the subway-frame.

Supported by and in electrical contact with the conductors E and F is a traveling contact-making device H, by means of which the current from one of the conductors is carried to the motor and from the motor back to the opposite conductor. The traveling contact-

making device consists of a body portion carrying two contact-plates I and J insulated from each other and from the body portion, in which they are held in any suitable manner.

5 The contact-plates I and J are respectively electrically connected to the motors through the insulated conductors K and L, which conductors are inclosed within a tubing M, which passes through the slot in the subway. The
10 inclosing pipe M may be a rigid pipe or tubing for a short distance above the street-surface of the slot D, and from that point to the car and motor a flexible pipe may be used, or a pipe flexible throughout its length may be
15 used to connect the contact-making device H to the car and motor.

The contact-making device H is mechanically connected to the car by means of the ropes N and O, respectively, connected to opposite
20 ends of the contact-making device and the body of the car. Thus when the energy conveyed by the conductors E and F in the subway is transmitted through the motor upon the car, motion of the car will result
25 and tension will be made either upon the ropes N or O, depending upon the direction of travel of the car, and the contact-making device H will be drawn after the car.

The construction shown in the drawings
30 has been found to give good results. The shape of the conductors E and F effectually prevents the accumulation of any dirt thereon, and being suitably insulated from the body of the subway very little loss of electrical energy is experienced.
35

Having thus described my invention, I claim—

1. In an electrical railway, the combination, with a subway provided with a slot communicating with the street-surface, of two conductors of V-shaped cross-section opening oppositely to one another in the same horizontal plane beneath said slot, and a traveling contact-making device electrically connected to the motor upon the car, the same having
40 corresponding V-shaped bearing-surfaces fitting cross-sectionally throughout the contact-surfaces of the said conductors adapted to center therein and take up wear evenly throughout, substantially as herein described.
45 50

2. In an electrical railway, the combination, with a subway provided with a slot communicating with the street-surface, of two conductors of V-shaped cross-section opening oppositely to one another in the same horizontal
55 plane beneath said slot, and a traveling contact-making device located wholly within the subway and electrically connected with the motor, and mechanism between said motor and contact-making device, whereby the contact-making device is moved in a constant
60 horizontal plane independent of the car, for the purpose described.

In testimony whereof I have affixed my signature in presence of two witnesses.

CARL THEODOR HEINRICH SCHWIEGER.

Witnesses:

GUSTAV STENGEL,
MAX WAGNER.