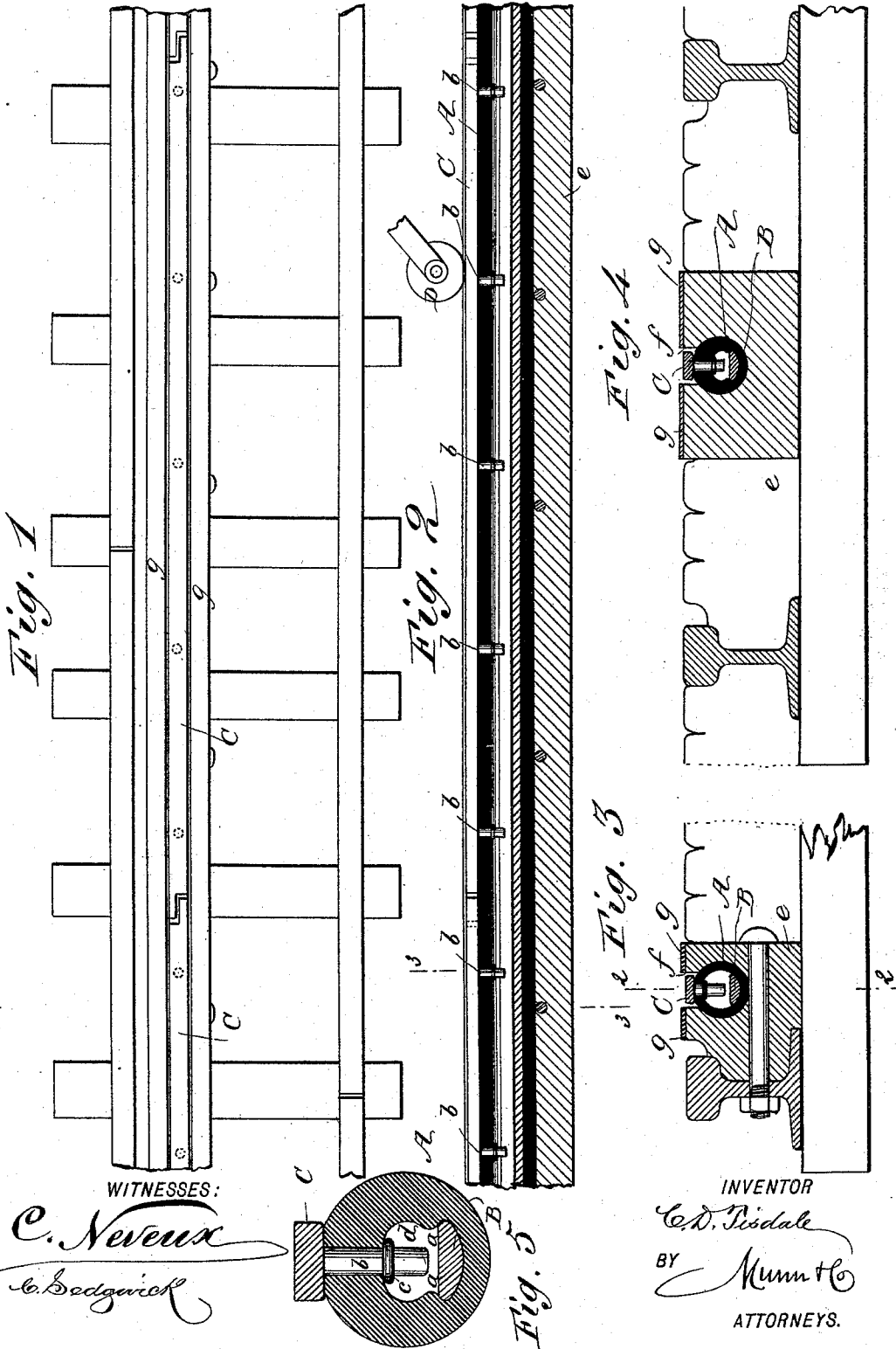


(No Model.)

C. D. TISDALE.
CLOSED CONDUIT FOR ELECTRIC RAILWAYS.

No. 526,468.

Patented Sept. 25, 1894.



UNITED STATES PATENT OFFICE.

CHARLES D. TISDALE, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO HIMSELF,
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CLOSED CONDUIT FOR ELECTRIC RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 526,468, dated September 25, 1894.

Application filed September 4, 1893. Serial No. 484,728. (No model.)

To all whom it may concern:

Be it known that I, CHARLES D. TISDALE, of East Boston, in the county of Suffolk and State of Massachusetts, have invented a new and Improved Conduit for Electric Railways, of which the following is a full, clear, and exact description.

The object of my invention is to provide an effective electrical conduit of small diameter to be placed near the ground surface and accessible to a trolley carried by the car.

My object is also to provide means for making local connections with the main conductor to avoid the dangers attending the use of an exposed main conductor.

My invention consists of a tube of flexible material a main conductor inserted in the tube, an auxiliary sectional conductor placed upon the tube and provided with contact pins extending through the walls of the tube, in position to be brought into contact with the main conductor when the auxiliary conductor and the tube are compressed by the trolley carried by the car.

It also consists in a flexible tube, thickened at the top for supporting the auxiliary conductor and furnished with inwardly projecting ribs near the lower part thereof, for retaining the main conductor in its position in the tube.

It further consists in the combination with the flexible tube, of a support for holding it in the position of use, all as hereinafter more fully described.

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

Figure 1 is a plan view of a conduit constructed according to my improvement. Fig. 2 is a longitudinal section taken on the line 2-2 in Fig. 3. Fig. 3 is a transverse section, taken on the line 3-3 in Fig. 2. Fig. 4 is a transverse section of a modified form; and Fig. 5 is an enlarged transverse section of the conduit.

The flexible tube A may be made in cylindrical form, as shown in Fig. 3, and perforated longitudinally with a circular hole, or it may be made in cylindrical form with the up-

per portion thickened, as shown in Fig. 4, with inwardly projecting longitudinal ribs at the lower part of the tube for retaining the main conductor B in its place in the tube. I prefer the form shown in Figs. 4 and 5, in which the exterior of the tube is made cylindrical, except the upper portion thereof, which is flattened to receive the auxiliary conductor C. The main conductor B is made of plano-convex cross section, a plane surface being uppermost, and the edges of the main conductor are rounded to prevent injury to the inclosing tube. The inwardly projecting longitudinal ribs *a* serve to retain the main conductor B in its position in the flexible tube.

The auxiliary conductor C, which rests upon the top of the flexible tube A, carries a series of contact pins *b* provided with rounded collars *c*. The said pins *b* are inserted in the small perforations in the top of the flexible tube A with the auxiliary conductors C resting upon the flexible tube, and the rounded collars *c* bearing against the inner surface of the flexible tube, as clearly shown in Fig. 5. The contact ends *d* of the pins *b* are held normally near the main conductor B, but not in contact therewith. The auxiliary conductor C is made in sections, which are electrically discontinuous. The ends of the sections are cut away and overlap laterally, as shown in Fig. 1, to allow the trolley to pass from one section to another without breaking the circuit.

The flexible tube A is inclosed in a longitudinally bored timber *e* with the auxiliary conductor C exposed through a slot *f* in the top of the timber. Said timber *e* may be bolted to one of the track rails, as shown in Fig. 3, or it may be placed in a central position between the track rails, as shown in Fig. 4. The top of the said timber *e* is protected against wear by metallic plates *g* secured to the timber on opposite sides of the slot *f*. A trolley D, carried by the car, presses with sufficient force upon the auxiliary conductor C to spring it downward against the resistance of the walls of the flexible tube A, to bring the contact pin *b* into electrical contact with the main conductor B, thereby establishing the circuit through the pin, the conducting rail, the trol-

ley, the motor carried by the car, and the ground connections which will be made through the car wheels and the ordinary track rails in the usual way. The sections of the auxiliary conductor C are made shorter than the length of a car, so that when the auxiliary conductor is taking current from the main conductor that section of the auxiliary conductor will be covered by the car. In this manner accidents, by contact with a live conductor, will be avoided.

The flexible tube A may be made of rubber alone, or of rubber with fibrous or textile material inserted to increase its strength and durability.

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

1. An electrical conduit, formed of the flexible tube, the main conductor arranged at the bottom of the tube, the auxiliary sectional conductor placed on the top of the tube and provided with contact pins extending downward into the tube and provided with collars

within the tube, substantially as shown and described.

2. In an electrical conduit, the flexible tube A provided with the thickened upper portion and having inwardly projecting longitudinal ribs *a*, the main conductor B inserted below the longitudinal ribs *a*, the sectional conductor C provided with pins *b* projecting into the flexible tube A and furnished with a collar *c*, substantially as shown and described.

3. A flexible tube for an electrical conduit, having a thickened upper wall and inwardly projecting longitudinal ribs, substantially as shown and described.

4. The combination, with the conduit, formed of the flexible tube A, the main conductor B and the auxiliary sectional conductor C, furnished with contact pins *b*, of the longitudinally bored and slotted timber *e*, substantially as shown and described.

CHARLES D. TISDALE.

Witnesses:

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