(No Model.) 2 Sheets—Sheet 1.

E. BRITT.

SYSTEM FOR CONDUCTING ELECTRIC CURRENTS.

No. 456,979. Patented Aug. 4, 1891.

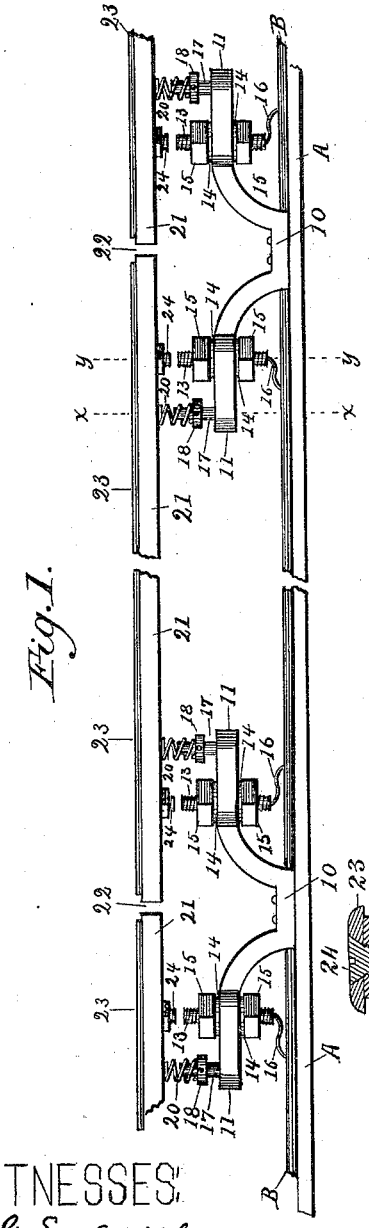

Fig. 1.

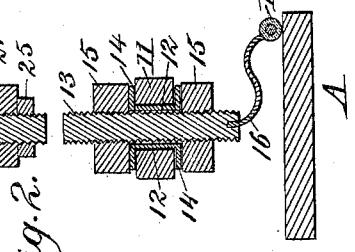

Fig. 2.

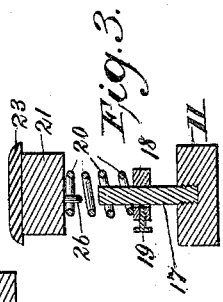

Fig. 3.

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(No Model.) 2 Sheets—Sheet 2.

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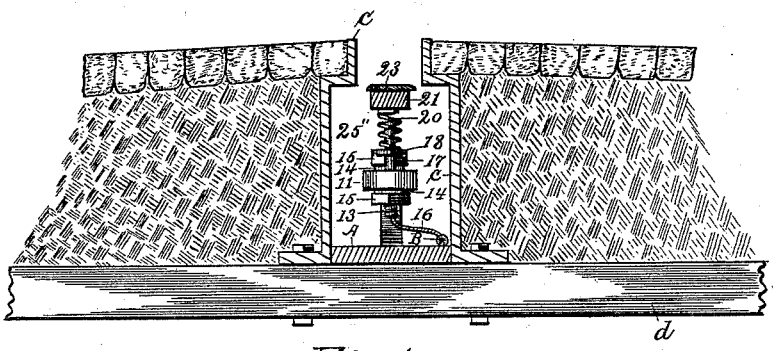

Fig 4.

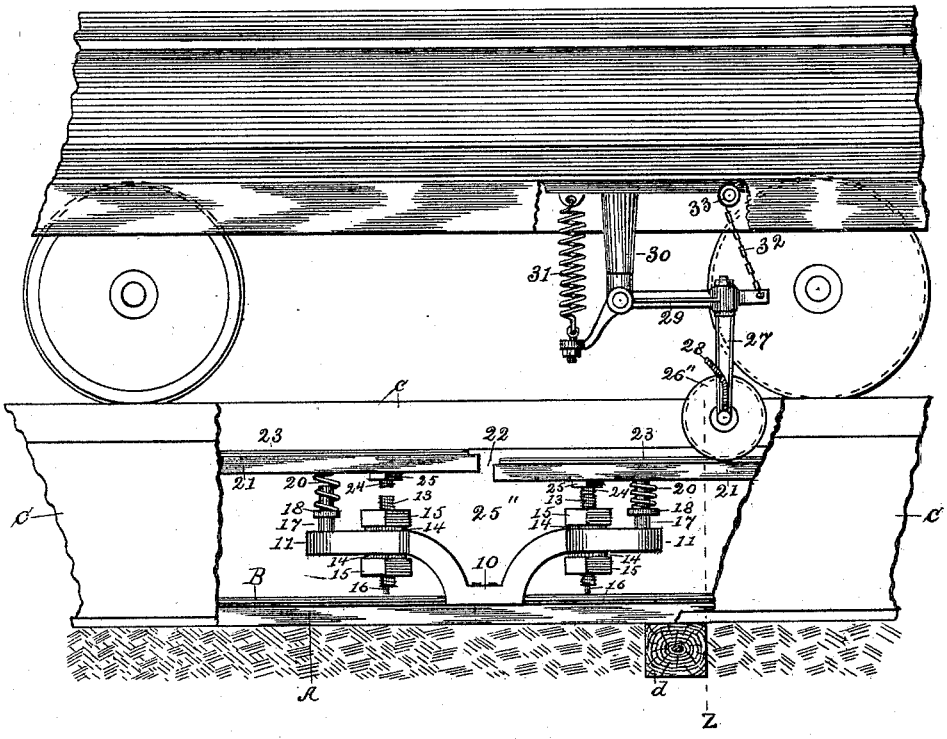

Fig 5.

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UNITED STATES PATENT OFFICE.

EDWARD BRITT, OF DAVENPORT, IOWA, ASSIGNOR OF ONE-HALF TO OSWALD HILL, OF SAME PLACE.

SYSTEM FOR CONDUCTING ELECTRIC CURRENTS.

SPECIFICATION forming part of Letters Patent No. 456,979, dated August 4, 1891.

Application filed October 11, 1889. Serial No. 326,760. (No model.)

To all whom it may concern:

Be it known that I, EDWARD BRITT, a citizen of the United States, residing at Davenport, in the county of Scott and State of Iowa, have invented a new and useful System for Conducting Electric Currents, of which the following is a specification.

My invention relates to a series of distinct sectional electrical conductors, which by means of pressure are brought into electrical connection with a continuous main electrical conductor, and when relieved from such pressure will automatically become disconnected.

The novelty in my invention consists in the means employed for accomplishing this connection between distinct sectional conductors and the main conductor, and the main details of construction will now be described with reference to the accompanying drawings, in which—

Figure 1 is a side view of a section of my system. Fig. 2 is an enlarged vertical cross-section of the same on the line *y y* of Fig. 1. Fig. 3 is an enlarged vertical cross-section of the same on the line *x x* of Fig. 1. Fig. 4 is a transverse section of a conduit, showing my invention on the line *z* of Fig. 5; and Fig. 5 is a longitudinal mid-section through the conduit, showing the chair and ends of bar-sections.

Similar letters and figures refer to similar parts throughout the several views.

A is the base which supports the device constituting the system.

B is an electric conduit, preferably a cable, which is supported upon such base, which forms the main continuous electrical conductor.

10 is a chair or frame secured upon such base, having two extending arms 11, each of which is vertically perforated, and in each of which perforations is inserted a bushing or ring 12, of glass or other non-conducting substance. A threaded metal bolt 13 is passed through the aperture in such bushing or ring, and a washer 14, of glass or other non-conducting substance, is passed around said bolt above and below the arm 12, and threaded nuts 15 are screwed upon said bolt, one above the upper washer and one below the under washer. The bolt may be raised or lowered to the desired height and then secured in such position by tightening or screwing the nuts. A wire 16 is secured at one end to the lower end of a bolt 13, and its opposite end secured to the conduit B in such manner that electric currents may pass from said conduit into said bolt, and each bolt, by means of said bushing and washers, is insulated from the chair or frame 10. Each arm 11 of such chair or frame is provided with a vertical standard 17, with a collar 18 thereon, which is secured in position thereon by a set-screw 19. A coiled spring 20 encircles the upper portion of standard, extending a short distance above the same, its base being seated upon said collar.

The bars 21 I prefer to construct of wood and paint the same, and of such lengths as to extend from about a line over the center of one chair to a line about over the center of another chair, but, however, so that a short space, as at 22, intervenes between the ends of each bar. The upper surface of such bar is provided with a metal strip 23, which I secure to such bar by two threaded screws 24, which pass through the bar at such points as to be in line over the top of the bolts 13, and I prefer to secure such screws by a nut 25 on the under side of said bar. I also secure the under side of each bar near its respective ends to the top of a spring 20, and for such purpose of securing I prefer to use a staple 26. The bar 21 and its metal strip form a distinct sectional conductor. The electric current, passing through the underground conduit B, freely passes by means of the wire 16 into each insulated bolt 13, and by pressure on the upper surface of a bar 21 the bottom end of screws 24 comes in contact to the top end of bolt 13 and the electric current passes through the same into the metal strip 23.

In order to illustrate one of the uses for which my invention is adapted, I will now describe how it may be utilized for conveying an electric current from the main conductor to an electric motor stationed upon a tramway-car; but I wish it understood that I do not limit my invention to this particular use. The open-slot conduit 25″ may be constructed substantially of side pieces *c c*, parallel to each other, in a longitudinal trench between

the rails of a tramway, such side pieces being bolted to cross-ties *d*, laid at proper intervals, and the upper edges of the side pieces should approach each other closely enough to leave a continuous space or slot between them similar to conduits used for cable-railways. In Fig. 4 the rails of the tramway are not shown; but their position and construction will be readily understood. The central part of the road-bed is shown, however. The base A, with the chairs, bar-sections, and main conductor, is placed within the conduit, so as to form a continued series of bar-sections the entire length of the conduit and also one continuous main electric conductor through such length.

In Fig. 5 I have illustrated the lower section of a tramway-car to the extent necessary to show the application of my invention. A collector-wheel 26″ is carried by the car, which wheel enters the open slot of the conduit 25″ and may ride upon the metal strips of the bars 21. This wheel should be provided in its longitudinal center with a disk of good conducting metal and so constructed that this center portion will come in electrical contact with the metal strips on bars 21, while the outer portions of the wheel should be provided with insulated disks, and which do not come in contact with the metal strips. The hubs of the wheel should be mounted in the bearing-fork 27 and insulated therefrom, and the bared end of a conducting-cable 28 should be so arranged with reference to the wheel as to form an electrical connection with its central conducting-disk and such cable passed up to the car in any approved manner, so as to form an electrical connection whenever desired with the electric motor carried upon the car. The upper end of the bearing-fork 27 is swiveled to the horizontal lever 29, which is pivoted to the hanger 30, and a spring 31 is arranged to exert a tension against it in such direction as to press the wheel 26″ downwardly with a pressure in excess of the upward pressure of the springs 20. For the purpose of lifting the wheel 26″ upward and out of contact with the metal strips, a chain 32 is attached to the lever 29 and is passed over the sheave 33 and conducted to any convenient part of the car, so that by pulling this chain the lever 29 is lifted.

The collector-wheel and its connected mechanism here described is the same as that shown and described in Letters Patent No. 400,926, to Robert Lundell, and I do not claim the same as any portion of my invention, and any other suitable mechanism for the same purpose may be used.

In operation the moving car carries the collector-wheel 26″ along with it, and the downward pressure applied to it by the spring 31 causes this wheel to depress successively the bar-sections, thereby bringing such sections successively into circuit with the main electric conductor B. As the wheel passes a bar-section the springs 20 elevate such section, disconnecting it from the electric current, while the momentum of the car causes the wheel to come in contact with the end of the next bar-section, depressing the same so that it becomes connected in circuit with the main conductor B.

It is obvious that applying pressure upon a sectional conductor will have the tendency to force the bottom of the bolts 24 against the top surface of bolts 13, thus closing the electric circuit through that section of the conductor, and when such pressure is removed the springs 20 act to force that section away from contact between said bolts.

I do not broadly claim a series of distinct electrical conductors through which pressure may be brought in electrical connection with a continuous main electrical conductor, and when relieved of such pressure will automatically become disconnected, as such devices have heretofore been described.

What I claim as new, and desire to secure by Letters Patent, is—

In a system for conducting electric currents, the combination, with a main electrical conductor and a series of distinct sectional electric conductors, of the chair, the metal insulated adjustable bolts supported thereby, the wire connecting each of said bolts with the main conductor, the vertical standards supported upon each chair, the adjustable collar upon each standard, the coiled springs attached to each sectional conductor, and the threaded screw passing through each sectional conductor, substantially as described.

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CHAS. HIBBARD.