

(No Model.)

2 Sheets—Sheet 1.

Z. FOSTER.

SUPPLY SYSTEM FOR ELECTRIC RAILWAYS.

No. 530,033.

Patented Nov. 27, 1894.

Fig. 1.

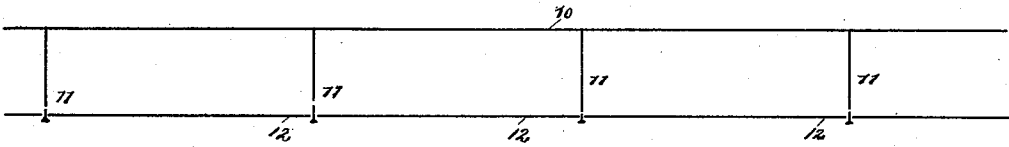


Fig. 2.

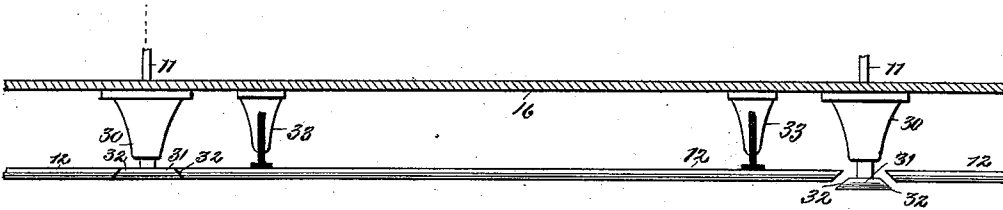


Fig. 3.

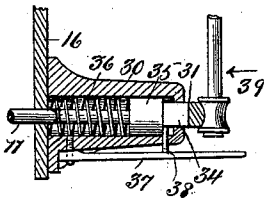
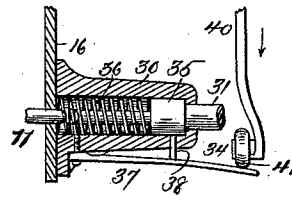


Fig. 4.



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No. 530,033.

Patented Nov. 27, 1894.

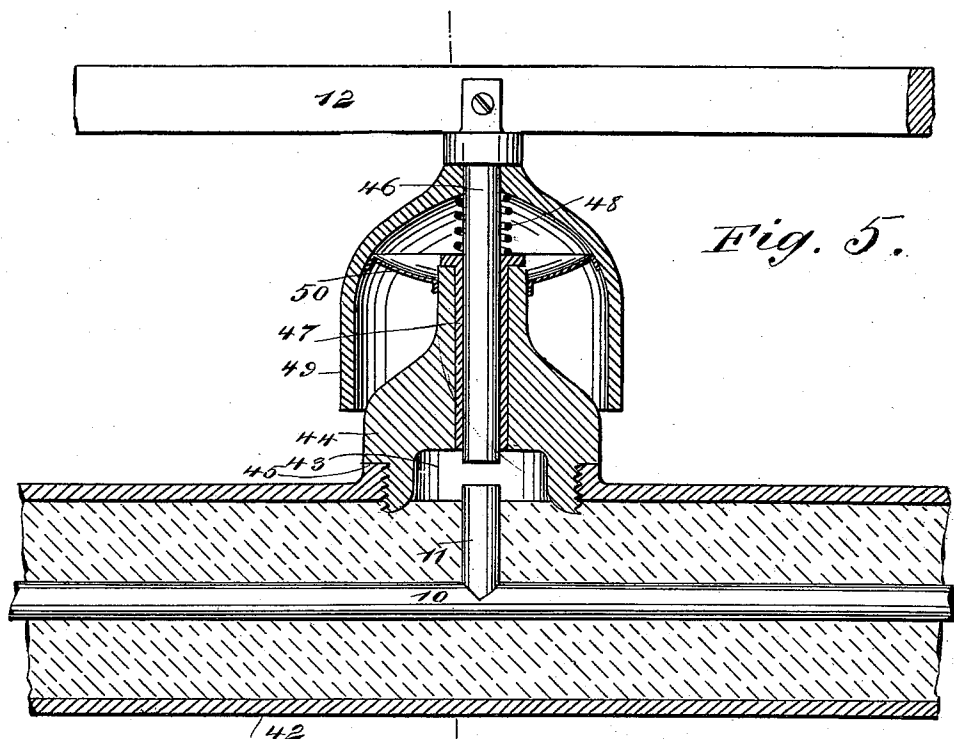
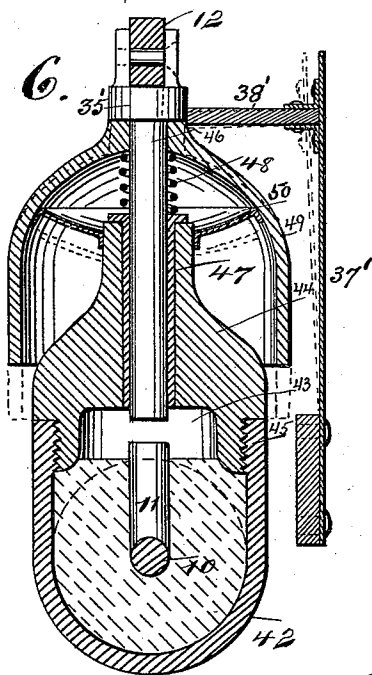


Fig. 5.

Fig. 6.



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UNITED STATES PATENT OFFICE.

ZEBULON FOSTER, OF CHICAGO, ILLINOIS.

SUPPLY SYSTEM FOR ELECTRIC RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 530,033, dated November 27, 1894.

Application filed March 7, 1894. Serial No. 502,647. (No model.)

To all whom it may concern:

Be it known that I, ZEBULON FOSTER, of Chicago, in the county of Cook and State of Illinois, have invented a new and Improved Electric Railway, of which the following is a full, clear, and exact description.

My invention is an improvement in that class of electric railways in which a conductor made up of aligned, insulated sections is arranged alongside a continuous or main line conductor, the several sections being successively brought into electrical connection with the main line as the trolley passes over them.

To these ends my invention consists of an electric railway system, the construction and arrangement of which will be hereinafter described 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.

Figure 1 is a diagrammatic view, showing the arrangement of the main line and the sectional conductor. Fig. 2 is a longitudinal section, illustrating my arrangement of sectional conductors and the circuit-closers connected therewith. Figs. 3 and 4 are cross sections of the circuit-closer and connected parts, illustrating its construction and operation. Fig. 5 is a longitudinal section of a modification, showing a modified circuit-closer; and Fig. 6 is a cross section, on the transverse dotted line shown in Fig. 5.

In Fig. 1, the line wire, 10, is shown provided with lateral branches, 11, and, parallel to it, are arranged the series of aligned sections or sectional conductors, 12, which are normally out of circuit with the line, 10, and with each other. They are successively brought into circuit with the line, 10, by means of devices shown in detail in other figures. I prefer to employ an all metallic circuit, but a single line may be employed if desired.

As shown in Fig. 2 the longitudinal support, 16, has posts, 30, projecting from it, which posts carry contact blocks 31 connected with the branches 11 and movable in and out, being held normally out so as not to contact with the sections 12 which are supported on hangers 33. When, however, a con-

tact block 31 is pushed inward it engages the adjacent sections 12 so as to close the circuit and to insure a perfect connection, the ends of the block 31 are beveled, as shown at 32, and the ends of the adjacent sections are correspondingly beveled.

Figs. 3 and 4 show the detailed construction which permits the out and in movement of the blocks 31 and shows the means for holding the blocks pressed inward and for automatically releasing them. Each block 31 is provided on its inner side with a pin or arm 34 which has a collar 35 thereon and which extends inward through the post 30 so as to contact with the branch 11, the pin or arm being normally pressed outward by a spring 36 which is coiled around its inner end behind the collar 35. On one side of the post 30, preferably the under side, is a spring lever 37 carrying a pin 38 which projects through the post and is adapted to press inward against the outer end of the collar 35 when the pin or arm 34 is pushed inward, and thus hold the said pin or arm into contact with the branch 11. The pressure of the trolley 39 on the block 31 pushes in the pin or arm, as described, and the catch, comprising the pin 38 and lever 37, holds the pin or arm in contact until a second trolley arm 40, which is arranged on the rear end of the car or train, as the case may be, comes along and this arm has a roller 41 thereon which engages and presses down the free end of the lever 37, thus releasing the collar 35 and permitting the block 31 to again spring out and break the circuit.

In Figs. 5 and 6 I have shown my preferred means of closing the circuit through the sectional conductor, and as here illustrated, the line wire 10 is carried through a tight tube or pipe 42 in which it is properly insulated, and the branch 11 projects outward through the pipe or tube and into a dry air space 43 in the inner end of an insulator 44, which is secured to the tube, as shown at 45, and through which extends a contact pin 46 which is secured to an adjacent section 12 of the conductor, this pin moving through a bushing 47 through the insulator 44, and the pin is normally pressed out of contact with the branch 11 by a spring 48. The insulator 44 and the

outer portion of the pin are covered by a cup 49, and this cup contains an air-tight and water-tight diaphragm 50 which is of rubber or other flexible material, and which tightly encircles the insulator 44, thus preventing water from rising above the top of the insulator and getting in contact with the pin 46. When the section 12 is pressed by a trolley, the pin 46 touches the branch 11, thus closing the circuit and means, such as that illustrated for holding the block 31 in contact and for releasing it, may be used for fastening and releasing the pin 46, or any other equivalent mechanism may be employed.

I show, in Fig. 6, a catch and releasing device consisting of a spring, 37', attached to an insulating block, and having at its free end a catch-pin, 38', that bears against the collar, 35', on pin 46, and is adapted to engage, or lock, with the same when said pin, 46, is pressed inward by a trolley. The release of this lock is effected by means before described.

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

1. An electric railway, comprising a line conductor having a series of branches, a conductor comprising independent sections arranged opposite the terminals of the branches, the contact blocks, springs for holding the sections and branches normally separated, and a trolley mechanism for producing the

required engagement, substantially as described.

2. An electric railway comprising a line conductor having a series of branches, a conductor made up of independent sections arranged adjacent to the terminals of the branches, springs arranged as specified, the contact blocks, fastening devices to automatically lock the sections in circuit, and an automatic means for releasing the locking mechanism, substantially as described.

3. In an electric railway, the combination, with the line wire and its branch, of the hollow post, the sections of the trolley conductor arranged adjacent to the post, the blocks slidably mounted in the post and adapted to make connection with the branch and with the sectional conductor, a spring catch to lock the block in circuit, and means, as a trolley arm, for releasing the catch, substantially as described.

4. In an electric railway, the combination with line wire and branches, of an air-tight casing inclosing the free ends of the latter, spring-retracted pins adapted to slide, to come in contact with said branches, bushings or guides for the pins, and cups and rubber diaphragms applied to the pins, to exclude water, substantially as shown and described.

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Witnesses:

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