No. 883,225. PATENTED MAR. 31, 1908.

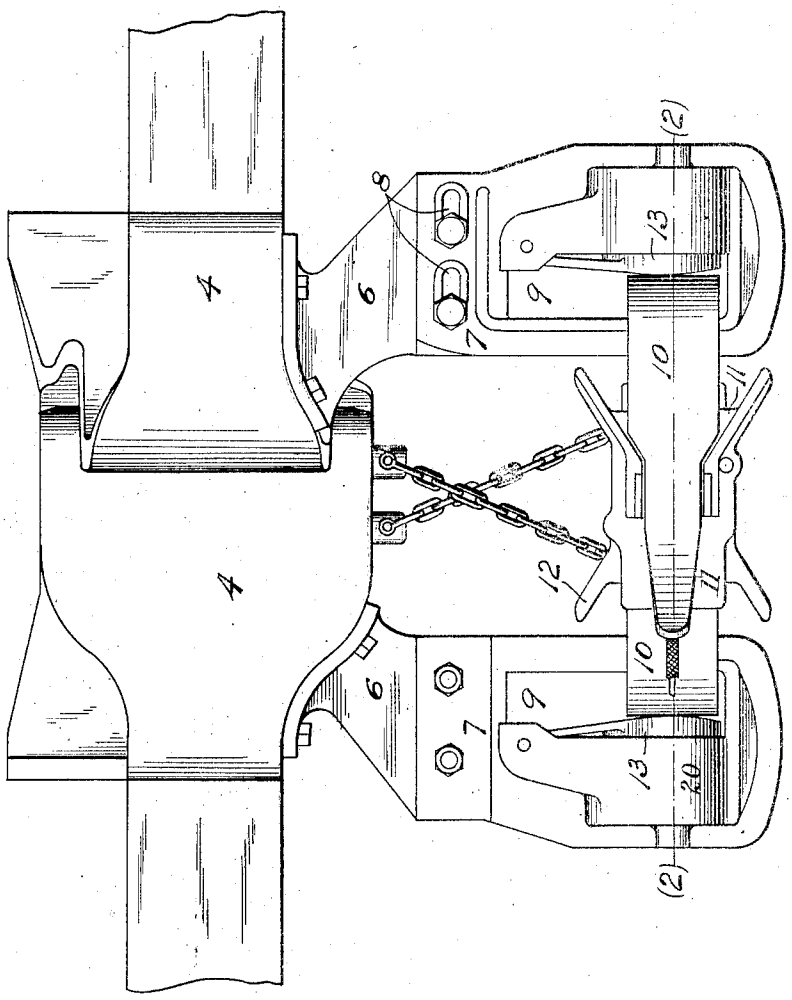
N. F. NIEDERLANDER.

COUPLING APPARATUS FOR ELECTRIC CIRCUITS.

APPLICATION FILED SEPT. 2, 1902.

2 SHEETS—SHEET 1.

Fig. 1



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By Paul Synnestvedt

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2 SHEETS—SHEET 2.

Fig. 2

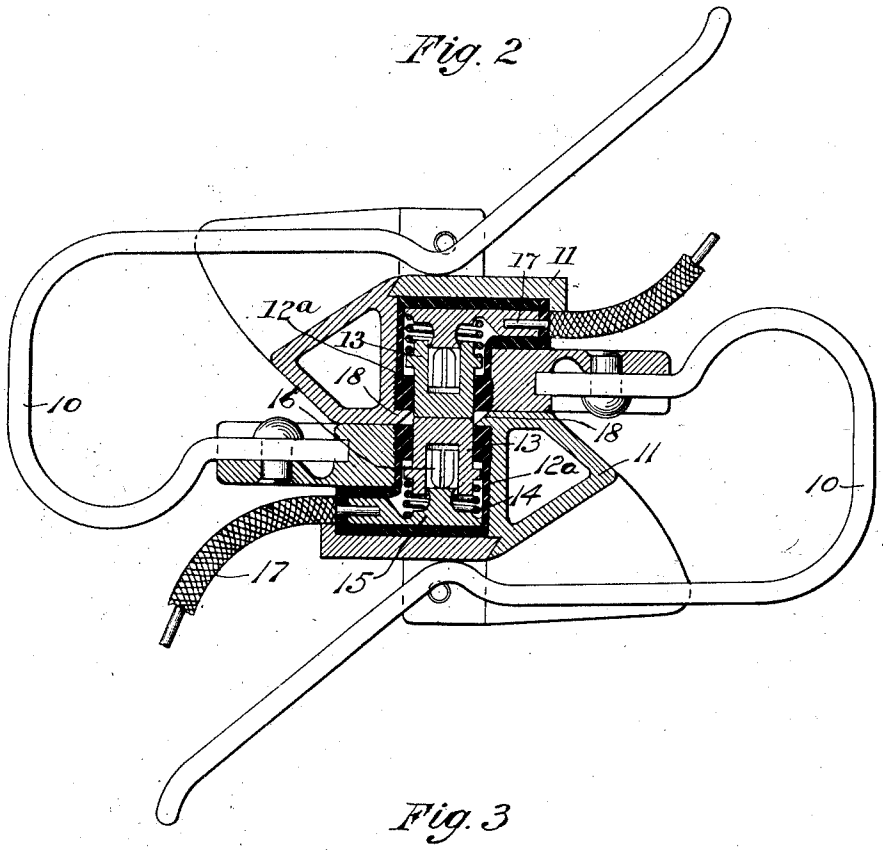
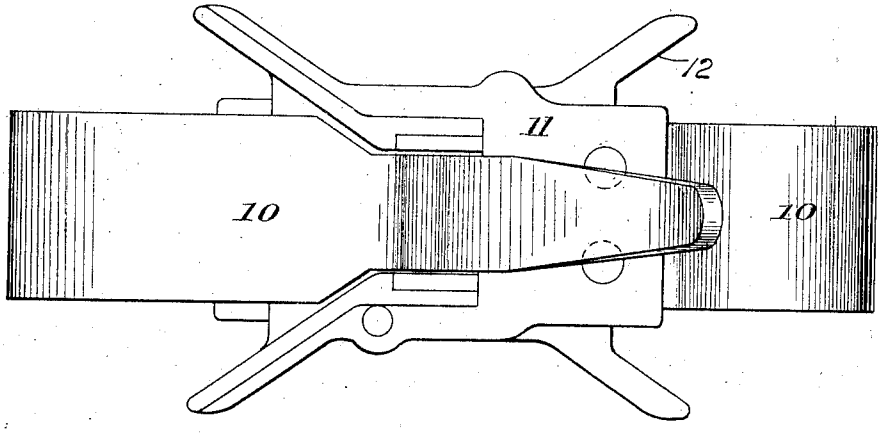


Fig. 3



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UNITED STATES PATENT OFFICE.

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COUPLING APPARATUS FOR ELECTRIC CIRCUITS.

No. 883,225. Specification of Letters Patent. Patented March 31, 1908.

Application filed September 2, 1902. Serial No. 121,776.

To all whom it may concern:

Be it known that I, NICHOLAS F. NIEDERLANDER, a citizen of the United States of America, residing at St. Louis, Missouri, have invented certain new and useful Improvements in Coupling Apparatus for Electric Circuits, (Case 2,) of which the following, taken in connection with the accompanying drawings, is a specification.

This improvement relates to coupling devices for uniting electric contact connections of a circuit in train service, and has particular reference to the provision of means whereby the coupling may be automatically made and disconnected, and whereby an efficient electrical connection is secured which will not be influenced by the actions of the elements which will be safe from interference from outside the device, which will be safe to the trainmen, protecting them from shock, and which will carry a heavy current, without danger of injury to the contact surfaces by sparking or from any other cause.

In order that my invention may be better understood I will now proceed to describe the same in connection with the accompanying drawings showing the same in preferred form, and in which

Figure 1 is a side elevation of an apparatus embodying my improvements.

Figure 2 is a sectional view of the coupling heads taken on line (2) of Figure 1, and

Figure 3 is a side elevation of the coupling device which carries electric contact connection, separate from the other devices, looking downward in Figure 2.

As shown in Figure 1, I have mounted upon the under faces of two Master Car Builders' coupler heads marked 4 a couple of brackets 6, carrying supporting frames 7 which I have secured to the brackets 6 by means of bolts passing through slotted openings 8 to permit of longitudinal adjustment of the frame relative to the line of draft of the car, and which frames are provided with vertical slots 9 through which pass springs 10, supporting coupler heads 11, which have inclined faces 12, as shown. The spring 10, and the heads 11, and inclined faces 12, are substantially in accordance with the prior construction already well known in the art, as in my former patent No. 582,672, and comprising substantially what I shall herein after term the "gathering mechanism" namely the mechanism whereby the two coupling heads which are to inter-engage are brought to proper register both vertically and horizontally. The springs 10 have vertical play in the slot 9, and are held outwardly from the cars by means of pushing devices marked 13, which may be backed up with any suitable yielding resistance, as for example a spring embraced in the housings 20 on the brackets 7.

Within the heads 11, are placed insulating housings 12^a containing contact plugs 13, for the electrical circuit which are held in position by means of springs 14, and have electrical contact connection with the stud pieces 15, which at the point of connection with the plugs 13, have a spring sliding contact, formed, for example, by the forked head 16, on the extension of the stud 15, so that on movement inward and outward from the coupling head of the plug 13, there will be good electrical connection at all times between the plug and the stud 15, which is in turn connected with the electrical cable 17. It will be seen that upon each of the coupling heads 11, there is an inclined face 18, disposed in such a manner that when the coupling heads unite they will gradually approach each other and cause the contact plugs to abut, with a rubbing or sliding friction between them. The springs 10, open to permit this, and then close against the companion part as shown in Figure 2.

The operation of my improvement is as follows: when two cars are brought together the coupler heads approach each other in the position shown and the inclined faces 12, acting in conjunction with the springs 10, gather the parts into proper register, each spring acting upon the back side of the opposite coupler head to draw the parts into close connection and the electrical plugs in contact as described. The spring fork 16, of the stud 15, by its rubbing contact with the electrical plug 13, preserves good electrical connection at all times between the plug and stud and its connected cable 17, while it freely permits the inward and outward movement of the plugs necessary.

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

1. The combination in a coupling, of opposing carrying members, spring contact studs mounted thereon, hollow posts slidably mounted on the studs, springs for holding the posts in advanced position and guiding means for causing the ends of the posts to slide over and into engagement with each other.

2. The combination in a coupling, of opposing carrying members, split spring contact studs slidably mounted thereon, hollow posts fitting over the spring studs, springs for holding the posts in advanced position and guiding means for causing the ends of the posts to slide over and into engagement with each other.

3. The combination in a coupling, of opposing carrying members, telescoping pairs of studs and posts having sliding spring engagement carried by the members, springs for holding the movable members of the telescoping pairs in advanced position, and guiding means for causing the ends of said movable members to slide over and engage each other.

4. The combination in a coupling, of opposing carrying members, a terminal mounted on each of the carrying members, a sliding contact member for each terminal having resilient engagement therewith, means for yieldingly holding the contact members in advanced position, and means for guiding the carrying members so that the ends of the contact members are caused to slide over and engage each other.

5. The combination in a coupling, of opposing carrying members, a contractible spring contact stud projecting at right angles from each of the carrying members, a hollow contact post slidably mounted upon each of the contact studs, a spring encircling each of the studs and pressing the posts into advanced position, and means for guiding the carrying members so that the ends of the contact posts are caused to slide over and engage each other.

NICHOLAS F. NIEDERLANDER.

Witnesses:
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