Nov. 8, 1932. W. H. B. LAVARACK 1,887,271

TRUNKING RISER CONNECTER

Filed March 15, 1929

Fig. 1.

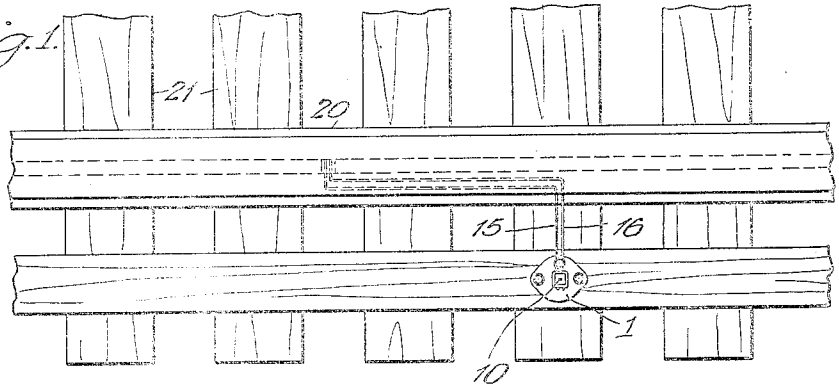


Fig. 2.

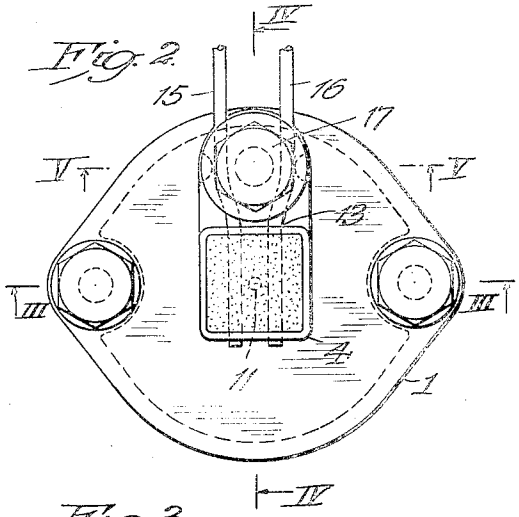


Fig. 4.

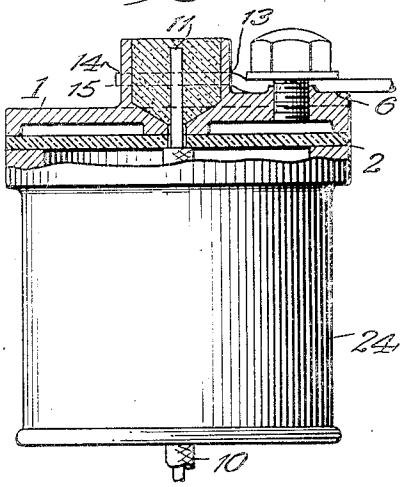


Fig. 3.

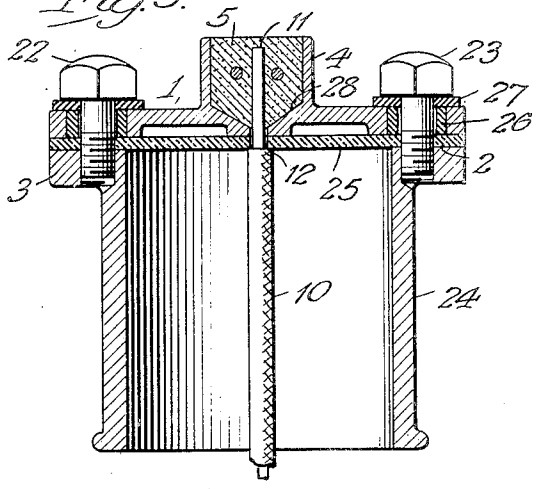
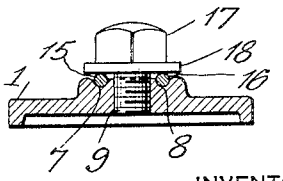


Fig. 5.



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UNITED STATES PATENT OFFICE

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TRUNKING RISER CONNECTER

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This invention relates to conductors and especially to such conductors as are used in railway signalling to make electrical connection to a track rail and more especially for making electrical connection between a conductor positioned in trunking and a track rail.

It is well understood by those familiar with the art of railway signalling that electrical connection must frequently be made between a track rail and an adjacent conductor. This adjacent conductor is frequently made to approach in close proximity to the track by being laid in trunking. The trunking may be positioned somewhat parallel and alongside of the rail or it may be positioned vertically issuing from the ground in close proximity to the rail. In the latter case it is known as a bootleg or riser.

The wire or wires extending from the trunking to the rail are generally bare conductors and are exposed to view and therefore are likely to be damaged by the elements and also likely to be pulled or bent about by laborers working on or about the track. It is necessary therefore to make the connection between the exposed wires and the conductor in the trunking so that it will not deteriorate electrically and is also mechanically very resistant to the abuse to which exposed wires may be subjected.

A principal object of applicant's invention is to provide a means for easily and conveniently making a connection between a trunking conductor and a track rail wire or wires which will be efficient electrically and very strong mechanically.

Other objects and advantages will appear as the description of a particular physical embodiment selected to illustrate the invention progresses and the novel features of the invention will be particularly pointed out in the appended claims.

In describing the invention in detail and the particular physical embodiment selected to illustrate the invention reference is had to the accompanying drawing and the several views thereof in which like characters of reference designate corresponding parts throughout the several views and in which:

Figure 1 is a fragmentary top plan view of a rail of a track way together with supporting ties, a trunking, rail wires, and applicant's invention in position upon the top of a trunking; Fig. 2, is a top plan view of a device as shown in Fig. 1; Fig. 3 is a cross-sectional view on the plane indicated by the line III—III, viewed in the direction of the arrows at the ends of the line; Fig. 4 is a sectional elevational view of the device as shown by Fig. 2 on the plane indicated by the line IV—IV, viewed in the direction of the arrows at the ends of the line; Fig. 5 is a sectional elevational view of the device as shown by Fig. 2 on the plane indicated by the line V—V, viewed in the direction of the arrows at the ends of the line.

Applicant's device, in the particular embodiment is in the general form of a somewhat circular plate 1, best shown in Fig. 2. This plate has orifices, 2 and 3, at diametrically opposite points for the reception of securing means such as bolts or screws.

The plate 1 approximately at the center top surface is formed with an upstanding wall 4 forming a cavity 5 and adjacent the cavity is a raised bearing surface 6 formed preferably with a plurality of somewhat semi-circular troughs 7 and 8, best shown in Fig. 5. Midway between troughs 7 and 8 there is an orifice 9 formed for the reception of securing means as threaded bolts and cap screws.

The conductor to which electrical and mechanical connection is to be made is designated 10. It approaches the plate 1 from below and the bare end 11 thereof passes through an orifice 12 in the plate 1 and into the cavity 5.

The track rail wires which are to be connected electrically to the wire 10 approach the plate 1 from the side, as best shown in Fig. 2. They are laid in the troughs 7 and 8 and then pass through orifices as 13 and 14 extending, preferably, entirely through both a front and back wall 4 of the cavity 5.

In order to secure the track wires 15 and 16, a cap screw 17, best shown in Fig. 5, is threaded into the orifice 9, and being provided with a washer 18, when screwed down firmly makes a firm and rigid metallic con-

tact between plate 1 and the wires 15 and 16. The cap screw 17 not only causes a fairly good electrical connection to be made between the wires 15 and 16 and the plate 1 but it makes a most excellent mechanical connection between those wires and the plate and entirely prevents any relative bodily movement between the wires and the plate so that a very considerable force may be exerted upon the wires 15 and 16, as by workmen on or about the track, without causing any bodily movement of the wires which may be transmitted into the ends thereof extending into the cavity 5.

In order to make a more perfect electrical connection between the wires 15 and 16 and the plate 1 and the conductor 10 molten solder 28 together with a suitable flux is placed in the cavity 5 thereby securely uniting, by solder, the wires 15 and 16, the plate 1, and the conductor 10.

If the plate 1 is to be used on parallel trunking it would be positioned as shown in Fig. 1, that is, upon the top of the trunking 19. The wire corresponding to 10 will extend up into the chamber 5 and the two wires 15 and 16 would extend out from the plate and would be connected in any usual way to the rail resting on the ties 21.

If the device is to be used in connection with a riser, then in the usual case it would be bolted, as by the cap screws 22 and 23, best shown in Fig. 3, to a metallic riser cap 24. As it is desirable to insulate the plate from the riser cap 24 suitable insulation, as a fibre plate 25, would be interposed between the riser cap 24 and the plate 1 and fibre thimbles as 26 would surround the bolt within the orifices 2 and 3 of the plate 1 and a fibre washer as 27 would be interposed between the head of the cap screw 23 and the plate 1.

Of course, if the trunking were made on non-conducting material it would not be necessary to use insulation such as the fibre plate 25, the thimble 26 and the washer 27.

Applicant's device assembled as hereinbefore described affords a most efficient electrical connection between the conductors to be connected as they are well connected by molten solder. It also provides a means for preventing any substantial movement of the wires 15 and 16 so that they may be loosened within the body of the solder in the cavity 5 because the cap screw 17 may be caused to press so tightly upon the washer 18 and the wires 15 and 16 that no relative bodily movement may take place between the wires and the plate 1 and the distance between the point where the wires 15 and 16 are firmly bound to the plate 1 and the place where the wires are surrounded by solder is so short that no ordinary force can disturb the wires 15 and 16. If the wires 15 and 16 do become loosened in the solder, a quite permanent electrical connection between wire 10 and wires 15 and 16 exists through plate 1 and the solder.

Although I have particularly described one particular physical embodiment of my invention and explained the principle and the operation and construction thereof, nevertheless, it is desired to have it understood that the form selected, is merely illustrative but does not exhaust the possible physical embodiments of means underlying my invention.

What I claim as new and desire to secure by Letters Patent of the United States, is:

1. As an article of manufacture, a metallic body adapted to be attached to a horizontal surface formed with a cavity for receiving soldering metal forming a pool and an orifice connecting with the cavity for receiving a conductor to be electrically connected to the body and means for rigidly positively securing the conductor to the body.

2. As an article of manufacture, a body adapted to be attached to a horizontal surface formed with a cavity for receiving soldering metal forming a pool and two orifices connecting thereto for receiving conductors and means for positively securely, mechanically attaching one of the said conductors to the body.

3. As an article of manufacture a metallic body adapted to be attached to a horizontal surface formed with a cavity for receiving a soldering metal forming a pool and two orifices connecting thereto for receiving conductors and further formed with a trough for receiving one of the conductors and formed with a threaded orifice for the reception of a screw so positioned as to securely hold the conductor in the trough.

4. As a connecter, in combination: a metallic body adapted to be attached to a horizontal surface formed with a wall forming a cavity, and with an orifice connecting with the cavity for the reception of the bare end of a conductor, the wall forming said cavity being further formed with an orifice through which a conductor may extend into the cavity; soldering metal forming a pool within the cavity electrically connecting the body and the conductors; the body further formed with a conductor seating surface closely adjacent the cavity and means for securely pressing the last mentioned conductor against the conductor seating surface.

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