

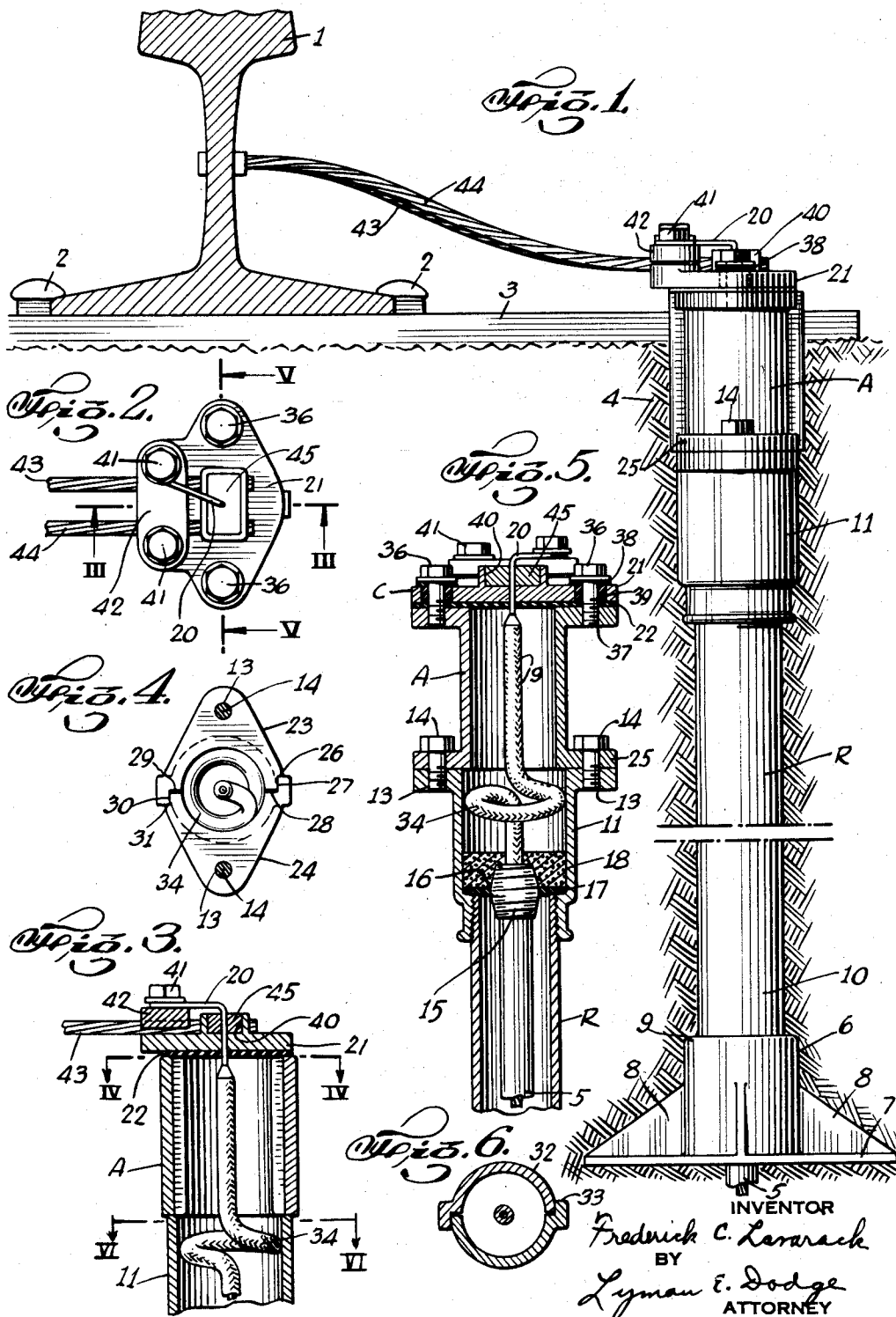
April 23, 1940.

F. C. LAVARACK

2,198,368

ADAPTER

Filed Dec. 9, 1938



UNITED STATES PATENT OFFICE

2,198,368

ADAPTER

Frederick C. Lavarack, Montclair, N. J., assign-
or to Railroad Accessories Corporation, New
York, N. Y., a corporation of New York

Application December 9, 1938, Serial No. 244,758

1 Claim. (Cl. 174—75)

This invention relates to electrical conductors, particularly to connectors therefor, and more especially to connectors especially adapted for use in railway track circuit signalling.

As is well understood by those skilled in the railway signalling art, electrical conductors are attached to the rails at intervals. These conductors of necessity must be either on or in the ground. In general, they are placed in what is called "trunking," which is merely a wooden or metal conduit. Of late, many of these conductors have been of the form known as "parkway cable." These cables are buried in the ground without protection, such as trunking, and emerge from the ground close to the point on the rail at which they are to be connected. Upon emerging from the ground, the wire or conductor within the cable is laid bare and connected to some form of bond wire for connection to the rail. Laying bare the conductor of the cable renders the cable subject to the entrance of moisture and water which might destroy it, therefore, this end must be protected. The exposed wires are also likely to be pulled about or bent by laborers working on the track, and are subject to injury by objects falling from passing trains, or dragged thereby along the parkway, and adequate mechanical protection must be provided against such injuries.

Various means have been employed to protect the end of the parkway cable. These have generally assumed the form of a vertical conduit or riser within which the parkway cable is positioned as it is brought vertically upward in the ground to be connected above the ground with the desired object or device. Such a construction is illustrated in the patent to F. C. Lavarack et al., No. 1,865,629, dated April 10, 1928, and somewhat analogous construction serving a somewhat similar purpose is shown in the patent to F. C. Lavarack et al., No. 1,887,272, dated November 8, 1932 and a further construction along the same line is shown in the patent to F. C. Lavarack et al., No. 2,075,780, dated March 30, 1937.

A principal object of the present invention is to provide a construction of the general nature specified, suitable for analogous purposes to those mentioned which will afford means for making connections to a parkway cable.

A more particular object of the invention is to provide a construction by which the riser structure may be adapted to change in height by reason of the raising of the ties and rails of the trackway.

A further object of the invention is to provide

an improved adapter which may be conveniently and readily applied to a basic riser structure.

In describing the invention in detail and the particular physical embodiment selected to illustrate the invention, reference will be had to the accompanying drawing and the several views thereon, in which like characters of reference designate like parts throughout the several views, and in which:

Figure 1 is a cross-sectional view of a portion of trackway, track rail, with a parkway riser protector and connector attached to the parkway cable constructed in accordance with applicant's invention, some of the parts being shown in elevation and some in section to more clearly show the construction; Fig. 2 is a top plan view of the top connector plate portion of the parkway riser shown in Fig. 1; Fig. 3 is a vertical cross-sectional view of the upper portion of the parkway riser on the plane indicated by the line III—III of Fig. 2; Fig. 4 is a horizontal sectional view on the plane indicated by the line IV—IV of Fig. 3, viewed in the direction of the arrows at the ends of the line; Fig. 5 is a vertical cross-sectional view of the upper portion of the parkway riser on the plane indicated by the line V—V of Fig. 2 viewed in the direction of the arrows at the ends of the line; Fig. 6 is a horizontal sectional view on the plane indicated by the line VI—VI of Fig. 3 viewed in the direction of the arrows at the ends of the line.

Numeral 1 designates an ordinary and conventional track rail attached by track spikes 2 to the tie 3 resting on the ballast and ground 4.

5 designates a parkway cable which is buried within the ground 4 and is to be brought up through the ground and connected mechanically and electrically to the track rail 1.

For the purpose of bringing up the parkway cable 5 and electrically connecting it to the rail 1, applicant has provided a parkway riser designated as a whole by R. This parkway riser comprises a foot or pedestal 6 preferably formed as a casting, and formed with a plate like base 7, strengthening and connecting ribs 8, and an annular part 9 into which the vertical duct 10 is received by a secure and tight fit made permanent by any suitable or appropriate means.

The top end of the duct 10 has a flanged pot 11 secured thereto. This flanged pot may be secured in any suitable or appropriate manner. Interengaging screw threads in the interior of the flanged member and the exterior of the duct 10 form a suitable method of securement.

The flanged pot 11, preferably, on substantially

diametrically opposite sides is orificed as at 13 and each orifice is formed with screw threads for the reception of a screw threaded member such as 14.

5 The parkway cable 5 is brought up through the interior of the duct 10 and at about the top end thereof a suitable bulge is made thereon as by winding friction tape 15 thereon. The friction tape is so placed that its central portion will
10 be positioned in an orifice 16 in washer 17 formed of any suitable or appropriate material, such as fibre.

The washer 17 is formed of such shape as to just cover the top of the duct 10 and fit nicely
15 within the pot 11.

After the parts have been put in position up to and including the pot 11 and the washer 17, water repellent heat plastic material such as rosin, asphalt, or bitumen is poured into the pot
20 11 around the cable 5 so as to form the mass of material 18 which prevents moisture or water from getting into the cable 5 at the point where it goes through the washer 17 and where the outer covering is removed to separate the inner
25 conductor cover 19 about the metallic conductor 20. A sufficient amount of the conductor 19 is taken and any surplus may be coiled within the pot 11 above the material 18.

In the particular application of applicant's invention shown in the drawing an adapter designated as a whole by A is applied to the top of the pot 11 and on the top of the adapter is a connector plate 21 with an interposed insulating washer 22 but it is to be understood that the
35 drawing shows the ordinary and conventional riser R with applicant's invention applied thereto but that in the ordinary practice the connector plates 21 rest directly upon the pot 11 with, of course, the interposition of the insulating washer
40 22 and it might well be that the structure illustrated could be considered as one in which originally the conductor plate 21 rested directly upon the pot 11 and the top of the pot 11 was about even with the top of the tie 3 as originally placed
45 but it is to be considered that the tie 3 together with the rail 1 has been raised and ballast put underneath to hold the parts in the raised position. By so doing, the top of the pot 11 would be below the surface of the ballast. In order to
50 provide for such a situation the connector plate 21 would be removed from the top of the pot 11 and applicant's adapter A interposed between the top of the pot 11 and the connector plate 21 so that the structure as shown in Fig. 5 would
55 be produced again bringing the connector plate just above the top of the tie as shown in Fig. 1. In short, applicant's adapter A is a means by which the height of a riser may be increased when it becomes necessary by reason of a change
60 in ballast conditions.

This adapted member A is formed in two pieces, best shown in Fig. 4, that is, a portion 23 and a portion 24 which are exact duplicates. Each
65 portion, as 23 has, at each end, a flange 25 orificed at 13 to receive a threaded member, such as 14, and thereby is held in place on the pot 11 and each portion, as 23, is provided with shoulders as 26, 27 and 28 against which bear and abut the corresponding surfaces on the other portion 24. Each portion 23 is also provided, at
70 each end, with surfaces or shoulders 29, 30 and 31 against which abut corresponding surfaces or shoulders upon the portion 24. The split or two part adapter A has thus interfitting and cooperating
75 shoulders and surfaces which properly align

one portion 23 with the mating portion 24 and when the threaded member such as 14 is inserted and screwed home, the several parts are firmly held to the pot 11 and to each other.

The mating portions 23 and 24 of the adapter A are also each formed with vertical walls, as 32, each being substantially a one-half annulus or ring, and each wall is extended as at 33 to overlap the mating wall.

After the adapter A and the material 18 have
10 been positioned, an insulating gasket 22 is positioned on the top of the adapter and then a connecting plate designated as a whole by C is positioned on top of the washer. Both the washer and the connecting plate C have a central orifice
15 therein so that the bare end 20 of the parkway cable may be passed upwardly therethrough leaving a sufficient quantity of the cable in the form of a coil 34 beneath the connector plate and above the material 18.
20

The connector plate is attached to the top flanges of the adapter by means of bolts as 36 which pass through orifices in the connector plate and the washer 22 and into screw threaded orifices, as 37, in the top flanges of the adapter, there being an insulating washer 38 and an insulating ring 39 positioned in connection with
25 said bolt to prevent electrical connection by the bolt from the connector plate C to the adapter flange and adapter.
30

The construction of the connector plate may be as desired, it being merely necessary to provide some means by which the bare end 20 of the cable may be electrically connected to the connector plate and means provided for connecting the connector plate to the rail. In the particular form shown the connector plate C has a solder well 40 formed in its upper surface and is orificed and threaded for the reception of bolts, as 41, for attaching a wire bar 42 to the connector plate. In using this form, the two wires
40 43 and 44, best shown in Fig. 2, connected to the track rail are extended under the wire bar 42 and through orifices in the side wall of the solder well 40 so that they are securely held by
45 tightening the bolts as 41 and are further mechanically and electrically attached to the connector plate C by pouring solder 45 into the solder well through which also extends the end
50 20 of the parkway cable 5 which is further mechanically secured by being placed under the head of at least one of the bolts as 41.

It will be noticed that if applicant started with a structure including the riser R and the pot 11 with the connector C positioned directly upon the
55 top of the pot and then it was necessary to increase the total height of the riser it would merely be necessary to remove the bolts 36 and the washer 22 and raise the connector plate C a sufficient distance without disconnecting any wires, so that
60 an adapter A could be slipped in beneath the connector plate. This adapter could be slipped in without breaking any connections because it is a two part adapter and each part may be placed
65 in position by movement sideways toward a parkway cable and this may be done by a very unskilled man without disturbing or destroying the electrical integrity of the involved circuits and then bolts 14 could be placed in the flanges of the adapter to attach it to the pot 11 and the bolts
70 36 could be put down through the connector plates and into the top flanges of the adapter A.

If it is again necessary to raise the rail 1 and the ties 3, ballast is placed under the raised structure and it may well be of such depth as would
75

come well above the top of the connector plate. In such case before the ballast is put in place, the connecting plate C is disconnected from the adapter A and then another adapter A is put in place on top of the present adapter A and bolted thereto just as adapter A is bolted to pot 11 and this again is possible without in any way disturbing the electrical connections of the wires because the adapter being in two parts may be positioned around the cable without disturbing or destroying the electrical integrity of the involved circuits.

By applicant's method of construction a standard uniform length bootleg riser may be constructed to be used in all positions, that is, all of that portion up to the top of the pot 11. By also providing adapters A of relatively short lengths provision may be made for any situation and for any change in the conditions and skill in properly and efficiently electrically and mechanically connecting between the track rail and the parkway cable needs to be done only once regardless of how many changes in the adapter or number of adapters may be necessary from time to time.

After the cable 5 is once secured in position in the pot 11 by material 18 and a sufficient coil 34 is left above the material 18 in the pot 11 the riser may be extended to any height allowed by the slack of the coiled conductor 34 without at any time disturbing the electrical connections of the connector plate C.

Although I have particularly described one par-

ticular physical embodiment of my invention and explained the operation, construction and principle thereof, nevertheless, I desire to have it understood that the form selected is merely illustrative, but does not exhaust the possible physical embodiments of the idea of means underlying my invention.

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

In a parkway cable riser, in combination: an upright duct; means forming a flanged pot at the upper end of the duct, said flanged pot formed with orifices for the reception of fastening means; a longitudinally split two portion adapter formed with connector mating surfaces and with orificed top and bottom flanges positioned on the flanged pot at the upper end of the riser; fastening means passing through the orifice of the flanges to secure the adapter to the flanged pot; a cable positioned in the duct and passing up through the pot; means forming a seal around the cable in the lower portion of the pot; a connector plate positionable on the top of the adapter or the pot; means for fastening the connector plate to the adapter or the pot; said cable being of such length above the seal that it is connectable to the connector plate whether that plate is on the top of the pot or on the top of the adapter, and means on the connector plate for attaching the cable thereto.

FREDERICK C. LAVARACK.