April 26, 1927. 1,626,267

L. CARUSO

TOY ELECTRIC RAILWAY

Filed Oct. 24, 1925

Fig. 1

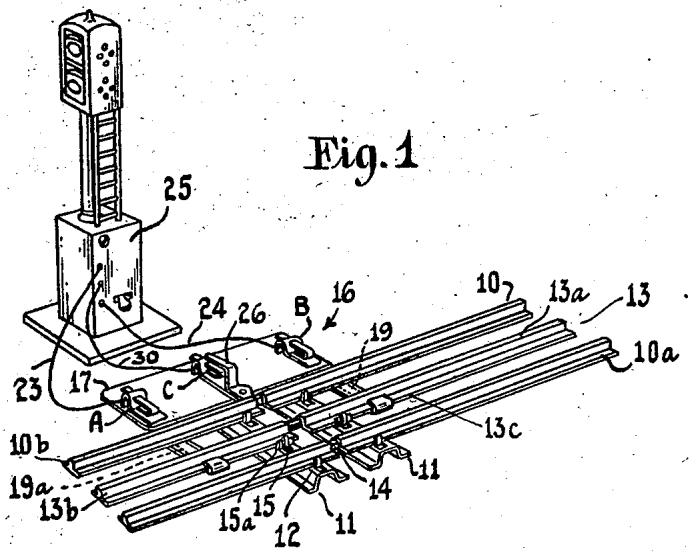


Fig. 2

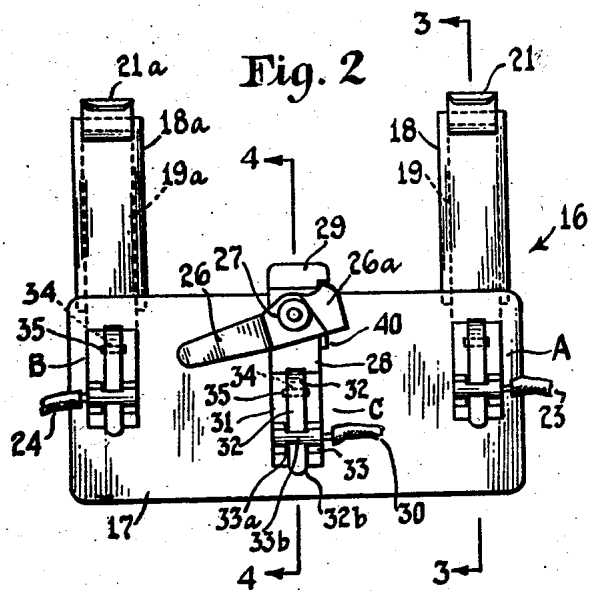


Fig. 3

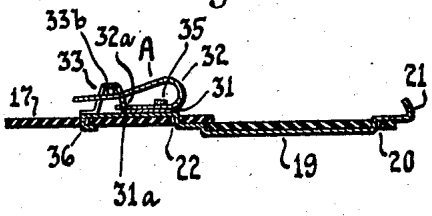
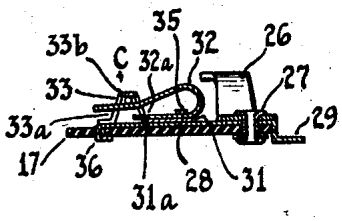


Fig. 4



Louis Caruso
INVENTOR

BY
ATTORNEY

Patented Apr. 26, 1927. 1,626,267

UNITED STATES PATENT OFFICE.

LOUIS CARUSO, OF IRVINGTON, NEW JERSEY, ASSIGNOR TO THE LIONEL CORPORATION, A CORPORATION OF NEW YORK.

TOY ELECTRIC RAILWAY.

Application filed October 24, 1925. Serial No. 64,646.

This invention relates to toy electric railway equipment. In connection with toy electric railways, accessories of various kinds are employed such as signal towers, swinging gates, automatic train control devices, and the like, which are furnished as separate units to be connected to the toy tracks. This invention is directed to an improved connecting or binding plate for making direct mechanical and electrical connections to the tracks, whereby current is led to and from the rails to an accessory, an object of the invention being the provision of a device of the character described whereby said toy accessory may be easily and quickly connected to the system by said attaching plate of improved construction and lead wires running from the tracks and plate to the accessory.

A further object of the invention is the provision in a device of the character described which shall be simple in construction, cheap to manufacture, easy to connect and operate, and practical and efficient to a high degree for the purposes described.

Other objects of this invention will in part be obvious and in part hereinafter pointed out.

The invention accordingly consists in the features of construction, combinations of elements and arrangement of parts which will be exemplified in the construction hereinafter described, and of which the scope of application will be indicated in the following claims.

In the accompanying drawing, in which is shown one of the various possible illustrative embodiments of this invention,

Fig. 1 is a perspective view of a signaling device and a fragmentary view of a railway structure showing my improvement in place;

Fig. 2 is a plan view of the device embodying the invention; and

Figs. 3 and 4 are cross-sectional views taken on lines 3—3 and 4—4 respectively.

Referring in detail to the drawing, the invention is there shown applied to a railway track equipment comprising two main rails 10, 10ª, usually attached in proper spaced relation to each other and at suitable lengths by means of cross ties 11, the connections between the rails and cross-ties indicated at 12 being of any convenient or conventional type. A "third" or power rail 13 extending between the main rails 10, 10ª is secured to the cross ties by suitable clamps 15 which may embrace insulation pieces 15ª. This "third" rail 13 is usually made in sections 13ª, 13ᵇ, one of which is insulated so that a toy accessory may be electrically operated therefrom when the toy train (not shown) passes into said insulated section. The particular connections and the manner of operation of such accessory from the insulated section form no part of this invention. A complete accessory in the form of an automatic train stopping and restarting device and the manner of its operation is disclosed in my co-pending application Serial No. 28,763 filed May 8, 1925. The main rails 10, 10ª, and the third rail 13 preferably are constructed to form standard track section units adapted to be joined together by means of a pin socket connection as at 14.

The invention contemplates the provision of a device having the advantages herein referred to and other obvious advantages whereby a toy railway accessory such as a signal tower, or the like, may be connected to a toy railway system such as that just described, and which is more or less standard in construction.

Referring now to Figs. 1 and 2, 16 indicates a binding plate embodying the invention which is seen to comprise a base portion 17 and two spaced arms 18 and 18ª parallelly extending from one side of said portion 17, both portions and arms being made of fibre or any other suitable, relatively cheap rigid insulating material. The base portion and arms may be made from a single sheet or may be an assembly of pieces held together as shown in Figs. 2 and 3.

The arms 18 and 18ª which are of sufficient length to reach beneath the rail 10 and also beneath the "third" rail 13 have current carrying strips 19 and 19ª respectively secured to extend along the under sides thereof. Said strips project up through openings 20 provided in the arms 18 and 18ª adjacent the free ends thereof, extend beyond the arms, and are upturned to

form hook-shaped contact clips 21 and 21ª respectively. The ends of the strips 19 and 19ª opposite said clips are arranged to pass through openings 22 in the base portion 17 and connect with suitable binding posts A and B respectively, which are adapted to connect through conductor wires 23 and 24 to an accessory for the toy railway such as a signal tower 25, whereby current is supplied to operate such accessory.

Co-operating with and re-acting against the clips 21 and 21ª is a gripping member 26 in the form of a first class lever pivoted directly to the base portion 17 by an eyelet rivet 27 as shown in Figs. 2 and 4. This rivet preferably is made to pass through the current carrying strip 28 for anchoring the fixed lower contact clip end 29 thereof, the opposite end of said strip 28 being provided with a terminal binding post C which is also adapted to connect with the tower 25 through the conductor wire 30 (see Fig. 1). A lug 40 is carried by the strip 28 and is so located as to constitute a positive stop to limit the swing of the lever about the pivot in either direction.

The binding posts A, B and C may be of any suitable construction preferably being of the quick detachable type and may be formed integral with the said strips 19, 19ª and 28 respectively, or securely mounted on the latter. As shown in the drawing, each of said posts comprises a relatively rigid body member 31 and a gripping tongue 32. Said body member is preferably made of stamped metal to form an upstanding looped skeletonized stanchion 33 at one end thereof and a socket 34 formed by displacing a band 35 of metal from a portion of the member 31 adjacent the other end. The clips may be firmly secured in place by any suitable manner, as for example, by soldering when mounted on their respective strips 19, 19ª and 28, or may be provided with suitably disposed anchoring means such as clamping tabs 36 formed on the ends of said strips and extending through the base portion 17 or in any other well understood manner.

The tongue member 32 is substantially U-shaped, and preferably made of a metal having relatively higher resilient properties than that from which the rigid body portion 31 is constructed, such for example as tempered steel, phosphor bronze, and the like material. Adjacent the end of the lower portion of the tongue 32, a hole 32ª is provided whereby it may be slipped on a lug 31ª struck up from the body member 31 on the rim of a through opening 33ª in the stanchion 33. The free or the finger end 32ᵇ of said tongue is arranged to pass through said stanchion opening 33ª and project with sufficient clearance to permit the tongue to be depressed below the top or bight 33ᵇ of the looped stanchion to grip one or more conductor wires inserted between the tongue 32 and said bight 33ᵇ as shown in Figs. 2, 3 and 4.

In using the invention for connecting the signal tower 25 or other accessory into tracks circuit, the binding plate is first attached to the track system by swinging the lever 26 to the right, until it strikes the lug 40, as is shown in Fig. 2, and then projecting the arms 18 and 18ª beneath the rails 10 and 13 far enough to permit the clips 21 and 21ª to embrace the flanges 13ᶜ of the "third" rail, and the lever 26 is manipulated so that the gripping end 26ª thereof engages the flange 10ᵇ of the rail 10 to firmly and positively anchor the device to the track.

Thus the current carrying strips 19, 19ª and 28 through their corresponding clips 21, 21ª and 29 respectively are each brought in close contact with the spaced rail sections 13ª and 13ᵇ of the "third" rail, one of said sections forming part of an insulated track section in conjunction with which the tower 25 operates, the electric current passing to and from the terminals A, B, and C to the tower through the conductor wires 23, 24, and 30 respectively.

It will thus be seen that there is provided a device in which the several objects of this invention are achieved, and which is well adapted to meet the conditions of practical use.

As various possible embodiments might be made of the above invention, and as various changes might be made in the embodiment above set forth, it is to be understood that all matter herein set forth or shown in the accompanying drawing is to be interpreted as illustrative and not in a limiting sense.

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

1. A binding plate for a toy electric railway track comprising a base portion, a pair of spaced arms extending from said portion, and separate current carrying means on each arm, said portion adapted to releasably engage with the track rails for connecting the plate into the rail circuit.

2. A binding plate for a toy electric railway track comprising a base portion, a pair of parallelly spaced arms extending from and beyond one side of said portion, separate current carrying means on each arm, said portion adapted to releasably engage with the track rails for connecting the plate into the rail circuit, and binding posts for each of said means.

3. In combination with toy electric railway tracks and an electrically operated accessory, a binding plate having detachable means for securing the plate to the tracks,

said means including at least three current carrying members adapted to connect with the track circuit, and conducting wires for connecting each of said means with the accessory.

4. In combination with toy electric railway tracks, and an electrically operated accessory, a binding plate having detachable means for securing the plate to the tracks, said means including at least three current carrying members adapted to connect with the track circuit, a terminal post for each of said members and conductor wires connecting the accessory to said terminal posts.

In testimony whereof I affix my signature.

LOUIS CARUSO.