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L. CARUSO

ELECTRICAL CONNECTER FOR TOY TRAIN TRACKS

Filed March 23, 1923

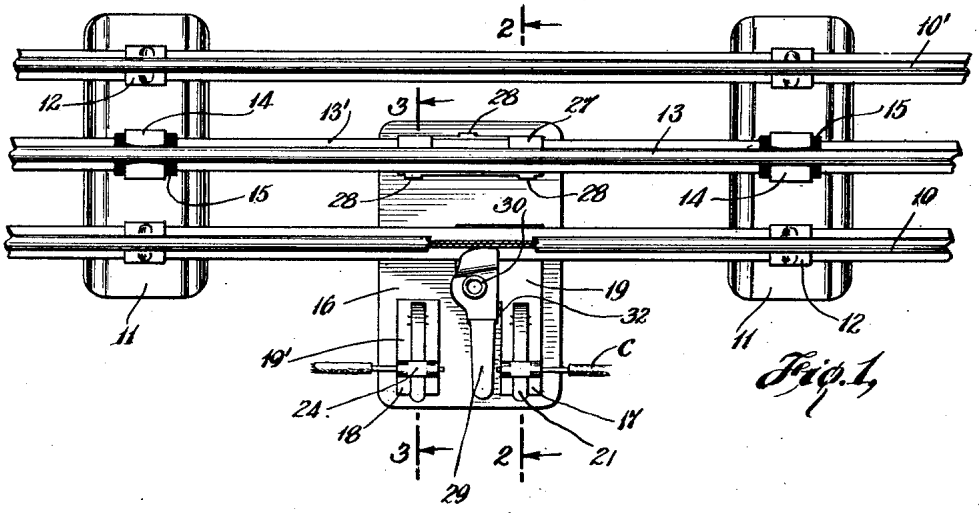
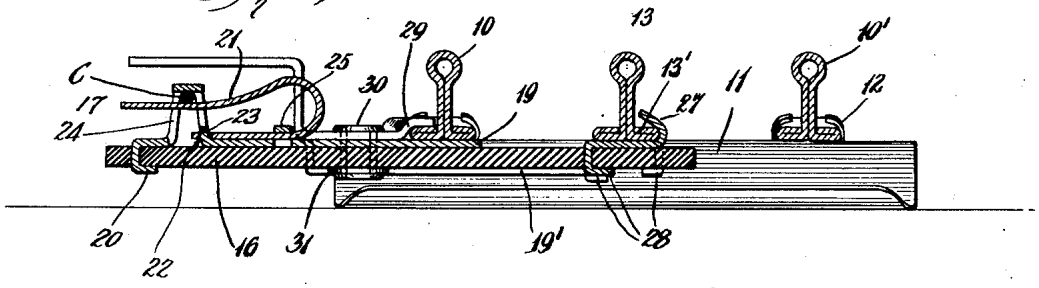


Fig. 1.

Fig. 2.



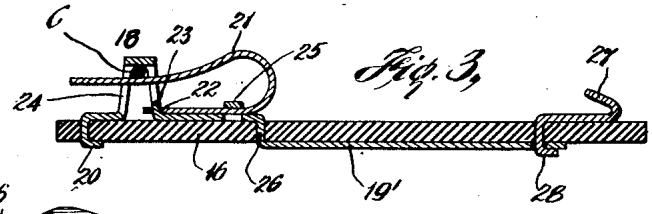
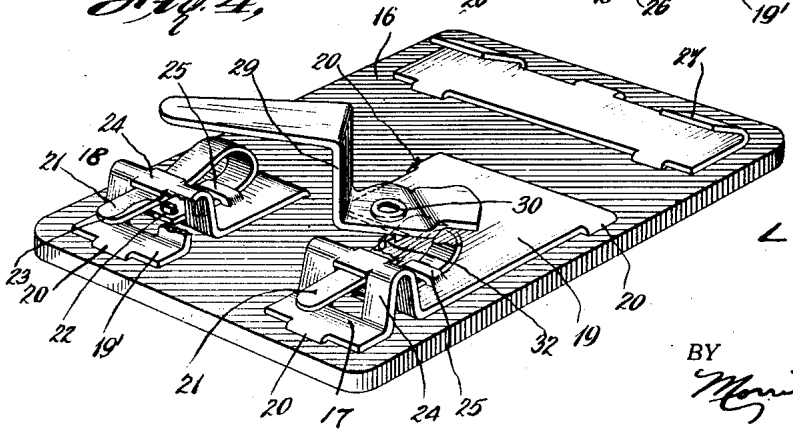


Fig. 3.

Fig. 4.



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UNITED STATES PATENT OFFICE.

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ELECTRICAL CONNECTER FOR TOY TRAIN TRACKS.

Application filed March 23, 1923. Serial No. 627,021.

To all whom it may concern:

Be it known that LOUIS CARUSO, citizen of the United States, residing at Irvington, in the county of Essex and State of New Jersey, has invented certain new and useful Improvements in Electrical Connecters for Toy Train Tracks, of which the following is a specification.

This invention relates to toy electric railway equipment and is particularly directed to connecters or binding devices adapted to be attached to the toy track rails for leading the electric current thereto.

Among the objects of the invention is to provide improved means for securing connecters or binding devices of the character described to the toy track rails, as well as to generally improve said connecters or binding devices with reference to cheapness of manufacture, strength and durability, reliability in electrical connection, and efficiency of operation.

With the foregoing and other objects in view the invention consists in the arrangement of parts and combinations of elements hereinafter described and claimed, and while the invention is not restricted to the exact details of construction disclosed or suggested herein, still for the purpose of illustrating a practical embodiment thereof reference is had to the accompanying drawings, in which like reference characters designate the same parts in the several views, and in which—

Figure 1 is a plan view of a fragment of a railway structure showing my improvement in place.

Fig. 2 is a vertical transverse section on the line 2—2 of Fig. 1, the scale being larger than in Fig. 1.

Fig. 3 is a similar view on the line 3—3 of Fig. 1.

Fig. 4 is a perspective detail of the connecter plate and attachment means carried thereby in spaced relation.

Referring now more specifically to the drawings I show my improvement as applied to a railway track equipment comprising two main rails 10 and 10′, usually attached in proper spaced relation to each other and at any suitable lengths by means of cross ties or plates 11, the connections at 12 being of any convenient or conventional type. The third rail 13 extending between the main rails is secured to the cross ties by suitable clamps 14 embracing insulation 15. The parts thus far described are more or less conventional and are referred to primarily to lay a basis for the specific description of the parts now following.

In the practice of this type of devices it is important to provide an electric contact or connection for the third rail, the main electric conductor. To this end I provide a base plate 16 of fibre or any other suitable or relatively cheap rigid insulating material. This plate is indicated as being substantially rectangular and of a length sufficient to reach beneath the rail 10 and also beneath and beyond the third rail, as well as projecting laterally from the trackway far enough for other electric connections.

Secured in any suitable manner to the exposed end of the plate 16 are electric conductor binders 17 and 18 spaced from each other and accordingly insulated through the plate. The binder 17 comprises a metallic base 19 mainly in flat form and extending along the plate 16 far enough to include a number of attachment elements 20 engaging in or through the plate 16, thereby affording not only a reliable connection for the base 19 but also acting as a stiffener or reinforcement for the plate itself. One end of the base 19 lies beneath the rail 10 thereby increasing the effective connections between the base and the plate when in practice. Each binder means includes also a spring tongue 21 of substantially U-form, the lower portion of which has a hole 22 whereby it is slipped over a lug 23 formed within a skeletonized stanchion 24 struck upward from the base and through which the free end of the tongue

21 projects with sufficient clearance to be depressed resiliently below the top of the stanchion so that the conductor C may be automatically gripped as indicated when the free end of the tongue is depressed by the operator's finger or thumb. The base portion of the tongue is held beneath a loop 25 also struck upward from the base and by which means the base end of the tongue is held in place in connection with the lug 23.

The other binding member comprises a base 19′ on which are formed the stanchion and loop 25 in a manner similar to those described above and for co-operation with a spring tongue 21. The base 19′, however, is bent downward intermediate of its ends at 26 so that one portion thereof lies and extends along the bottom of the plate 16 for co-operation with a contact clip 27 extending through the plate at several points 28 adjacent to the third rail. This clip includes one or more fingers having direct embracing engagement with the base flange 13′ of the third rail on the side remote from the main portion of the binder devices.

Co-operating with and reacting against the clip 27 is a gripping member 29 in the form of a first class lever pivoted at 30 directly upon the base 19. This pivot preferably extends through the plate 16 also for stiffening and reinforcing the several connections. A washer 31 may lie between the lower end of the pivot and the plate for additional strength. The shorter end of this lever 29 takes directly over and against the flange of the rail 10 on the outside, the side remote from the third rail, while the longer or power end of the lever is deflected upward and thence outward horizontally so as to enable the lever to be manipulated readily without interference with the wire binders. A lug 32 is carried by the base 19 and is so located as to constitute a positive stop to limit the swing of the lever around its axis or pivot to about 90°, in either direction.

In applying this binder attachment to the track mechanism, the lever 29 is first swung toward the right until it strikes the lug 32 approximately as shown in Fig. 4 and then the plate 16 is projected beneath the rails 10 and 13 far enough for the clip 27 to pass beneath and thence upward into embracing contact with the remote edge of the rail 13. The operator will then draw the plate firmly to make the engagement between the clip and the third rail positive and at the same time will lift the plate to bring the anchor end of the lever in a plane above the top of the flange of the securing rail 10. He will then swing the lever toward the left, to the position shown in Fig. 1, making the connection final and positive. The base 19′ of one of the binders is thus brought directly into electrical contact with the third rail, completing the primary object of the device, while the securing of the binding device to the rail mechanism is effected through means spaced and insulated from said third rail connection.

Having thus described my invention I claim as new and wish to protect by Letters Patent:

1. The combination with a main rail and a third rail, of a binding connection comprising a piece of insulated material constructed to extend beneath the rails, a metallic anchor clip carried by the insulated piece for engagement directly with one of the rails, a line wire connecter secured to the said piece including an element electrically connected with said anchor clip, and means pivotally mounted on said piece adjacent to and co-operating with the other rail for positively locking the binding connecter to the rails.

2. The combination with a main rail and a third rail, of binder means including a strip of insulation extending beneath the rails, a metallic anchor clip carried by the strip for engagement directly with the third rail, a line wire connecter connected to the other end of the strip and including an element electrically connected with said anchor clip, and locking means carried by the strip and co-operating with the other rail remote from the clip for making the connection positive and secure, said locking means comprising a first class lever so arranged as to have its shorter end engaged directly over the base flange of the adjacent rail on the side remote from the engagement between the third rail and its clip.

3. In mechanism as set forth, the combination with a main rail and a third rail, of electric binder means comprising a plate of insulation extending beneath said rails, a metallic clip having anchoring engagement with the third rail remote from the main rail, two line wire binders carried by the plate and electrically spaced from each other and each including an attachment base, means to connect one of said bases electrically with the third rail clip, and means carried by the other base for locking the devices to the main rail on the side remote from the third rail.

4. A binding connecter for toy railway tracks comprising a base having means adapted to releasably engage with track rails, a skeletonized terminal stanchion extending upward from said base connected with said means, and a spring tongue having one end thereof anchored to the base adjacent to said stanchion and the other end thereof projecting resiliently through said stanchion.

5. A binding connecter for toy railway

tracks comprising a base having means adapted to releasably engage with track rails, a skeletonized terminal stanchion extending upward from said base connected with said means, and a spring tongue having one end thereof anchored to the base adjacent to said stanchion and the other end thereof projecting resiliently through said stanchion, the anchored end of the spring tongue being provided with a hole and the base having a lug projecting through said hole for locking the tongue against displacement.

In testimony whereof I affix my signature.

LOUIS CARUSO.