

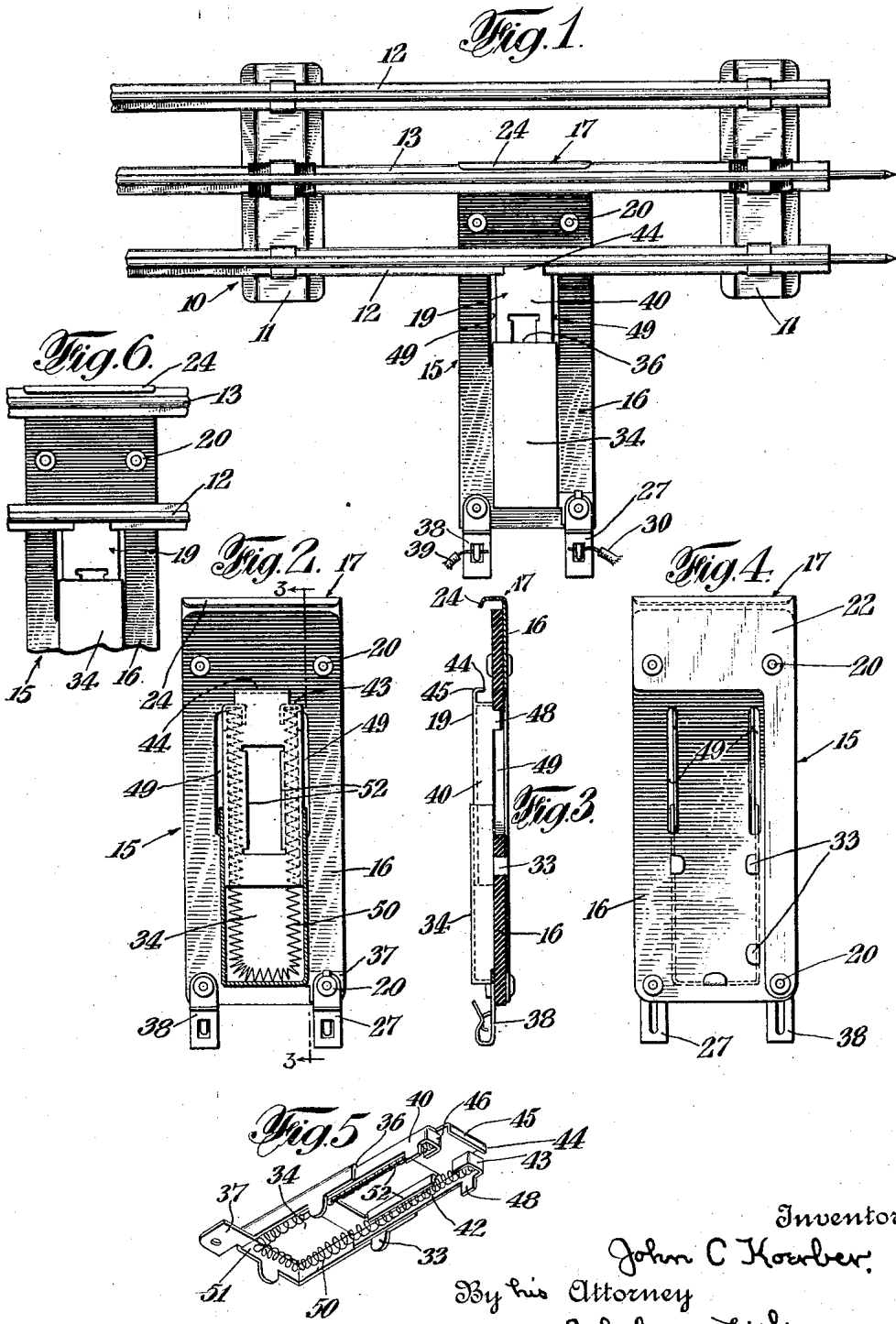
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TOY RAILWAY TRACK CLIP

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TOY RAILWAY TRACK CLIP

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This invention relates to electrical connectors or clips, and particularly to clips adapted to form electrical connections with the rails of toy railway tracks.

Toy railway tracks are customarily formed of two wheel-bearing rails and a third rail, which is generally located between the wheel-bearing rails. Current is supplied to the toy car through the rails, the third rail serving as one terminal, and one or both of the wheel-bearing rails serving as the other terminal of the supply circuit. To connect these rails with the supply conductors, as well as, in certain cases, to connect the rails with auxiliary circuits, such as circuits employed for energizing wayside signals, it is customary to employ clips which may be attached to and removed from the track.

The principal objects of the present invention are to provide an improved clip of this character which is simple and economical in construction, is composed of relatively few parts, which may be easily applied to and removed from the rails, and which will serve to form good firm electrical contacts with the rails.

A further object of my invention is to provide a clip of this character which may be constructed so that it can be applied to tracks of different gage. A further object is to provide an improved clip of this character which is adapted for attachment to tracks of different gage without requiring the removal or adjustment of any of its parts.

Further objects of my invention will appear from the following description, taken in connection with the accompanying drawings, which show one embodiment of my invention, and wherein:

Figure 1 is a plan view of a clip showing the same applied to a toy railway track of narrow gage;

Figure 2 is a sectional view taken on the line 2—2 of Figure 3;

Figure 3 is a sectional view taken on the line 3—3, Figure 2;

Figure 4 is a bottom plan view of the clip;

Figure 5 is a perspective bottom view of

fixed and movable casings forming parts of the clip, together with a spring located in said casings and adapted to move the movable casing into engagement with one of the track rails, and

Figure 6 is a fragmentary view similar to Figure 1, but showing the clip applied to a toy railway track of wide gage.

Referring to Figure 1 of the drawings, reference character 10 indicates a portion of a toy railway track which comprises ties 11, on which are mounted two outer wheel-bearing rails 12, and an intermediate insulated third rail 13.

Secured to the track 10, and adapted to form electrical contacts respectively with one of the wheel-bearing rails and with the third rail is a clip 15, which comprises a base or plate of insulating material 16, carrying a stationary third rail engaging contact member 17, and a movable outside rail engaging contact member 19.

In the particular embodiment of clip disclosed the member 17 is formed of a strip of metal secured to the bottom of the base 16 as by eyelets 20. This strip of metal extends the length of the base, and is widened at one end, as indicated at 22, so as to extend across the width of the base. The strip at its enlarged end is bent upwardly around the end of the base 16, and terminates in a rail engaging portion or abutment 24. One of the eyelets 20 at one end of the strip forms an electrical connection with a terminal member 27, to which a wire terminal 30 may be secured.

Permanently secured to the base 16 by means of downwardly extending lugs 33, which pass through openings in the base and are bent over beneath the base, is a member or casing 34, which is preferably formed of sheet metal bent into the shape shown in Figure 5. One corner of the casing 34 is formed with a flat projecting portion 37, which is secured by one of the eyelets 20 to the base 16 and to a terminal member 38, to which a wire terminal 39 may be secured. The outer end of the casing 34 is closed by a wall 51 and its inner end is open, as indicated at 36, and slidable in

and out of this opening is a rail-engaging contact member 40, which is formed of sheet metal having two lateral longitudinally extending channels 42, which are closed at their outer ends as indicated at 43. The outer end of the member 40 extends outwardly beyond the channels 42, and may be bent downwardly as indicated at 45 to form the outer rail engaging portion of 44.

The member 40 is preferably formed from a flat sheet metal blank by cutting and stamping. The outer walls of the channels 42 are formed by bending down the metal of the blank along its side edges, there being extensions 46 at one end of these edges which, when bent inwardly and backwardly, form the closed ends 43 of the channels. The inner walls of the channels 42 are formed by making and I-shaped cut in the center of the metal blank, so as to leave two inwardly projecting metal portions, which are then bent down, as indicated at 52.

The lower edges of the outer walls of the channels 42 are formed with downwardly projecting lugs 48, which project into longitudinal slots 49 formed in the base 16, this construction serving as a means to guide the casing 40 in its movement in and out of the casing 34.

The member or casing 40 is normally biased towards its outermost position by means of a spiral compression spring 50, which is located in the casings 34 and 40. In the clip shown this spring is doubled on itself and extends through the two channels 42 of the member 40. The outer ends of the spring press against the ends 43 of the channels, and the spring at its central or bent portion presses against the wall 51 of the casing 34, the wall 51 thus receiving the reaction of the spring. It will be noted that in the clip shown, the spring 50 is not secured to any part of the clip, but merely lies inside the casings 34 and 40, being confined by the walls of the casings and the base 16.

It will be seen that the clip constructed as described may be easily applied to and removed from the track. The construction and mounting of the fixed and movable contacts for holding members permits a relatively wide range of movement of the movable member, and for this reason, if desired, the clip may be so constructed that it may be applied to tracks of different gage, wherein the outer rails are located at different distances from the third rails. Thus, in Figure 1 I show the clip applied to a track of narrow gage, and in Figure 2 to a track of wide gage.

Having now described my invention, what I claim and desire to secure by Letters Patent is—

1. The toy railway track clip comprising

a base, a third rail engaging contact carried by said base, a second contact slidably mounted on said base and movable toward and away from said track, said second contact being adapted for engagement with the outside of an outside rail of said track, and said second contact having a sufficient range of movement to permit of its engaging the outside rails of tracks of different gage, and a compression spring located in said second named contact and adapted to move said second named contact through said range.

2. A toy railway track clip comprising a base of insulating material having a slot therein, a contact mounted on said base and slidable thereon into circuit making contact with a rail, said contact being formed of sheet metal having downwardly extending side edges formed with lugs located in and movable in said slots.

3. A toy railway track clip comprising a base of insulating material having slots therein, a contact slidably mounted on said base, said contact being formed of sheet metal having downwardly extending side edges formed with lugs located in and movable in said slots, and a spring for moving said contact, said spring being located between said contact and base.

4. A toy railway track clip comprising a base, a stationary rail engaging member carried by said base, a movable rail engaging member carried by said base, a disconnected compression spring for moving said movable member, a stationary member adapted to receive the reaction of said spring, and means for confining said spring laterally of its length.

5. A clip for toy railway tracks comprising an insulating base, a rail engaging contact comprising a casing open along one side, means for slidably securing said casing to said base, with said base closing the open side of said casing, and a spring located inside said casing, and adapted to engage said casing to move said casing along said base.

6. A clip for toy railway tracks comprising an insulating base, a stationary rail engaging member, a movable rail engaging member comprising a casing, means for movably securing said casing to said base and a spring in said casing and bearing against one end thereof to move said casing along said base.

7. A clip for toy railway tracks comprising a rail engaging member, a second rail engaging member adapted to cooperate with said first named member to clamp the clip to the track, and a spring for moving said second named member into clamping engagement with a rail of said track, said second named member serving to enclose said spring.

8. A clip for toy railway tracks compris-

ing a rail engaging member, a second rail engaging member adapted to cooperate with said first named member to clamp the clip to the track, and a spring for moving said second named member into clamping engagement with an outside rail of said track, said second named member serving to enclose said spring.

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9. A track connector for toy electric railroads comprising two cooperative rail engaging members, one fixed and the other movable, a contractible spring urging them toward one another, and a wire receiving terminal connected to each rail engaging member.

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10. A track connector for toy railways, comprising a fixed rail engaging member, a movable rail engaging member, a spring for moving the latter member relative to the former member to clamp the connector to the track and a wire receiving terminal connected to each member.

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11. In a contact device for toy railways an insulating supporting structure, a movable contact carried thereby, a spring for moving said contact, a circuit terminal and electrical connections through which current may flow between said contact and terminal without flowing through said spring.

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12. In a contact device for toy railways an insulating supporting structure, a movable rail engaging contact carried thereby, a spring for moving said contact, a fixed circuit terminal and electrical connections through which current may flow between said contact and terminal without flowing through said spring.

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13. In a contact device for toy railways an insulating supporting structure, a movable rail engaging contact carried thereby, a spring for moving said contact, a fixed circuit terminal and a telescoping casing enclosing said spring and forming an electrical connection through which current may flow between said contact and terminal without flowing through said spring.

Signed at New York, in the county of New York and State of New York, this 9th day of July, A. D. 1928.

JOHN C. KOERBER.