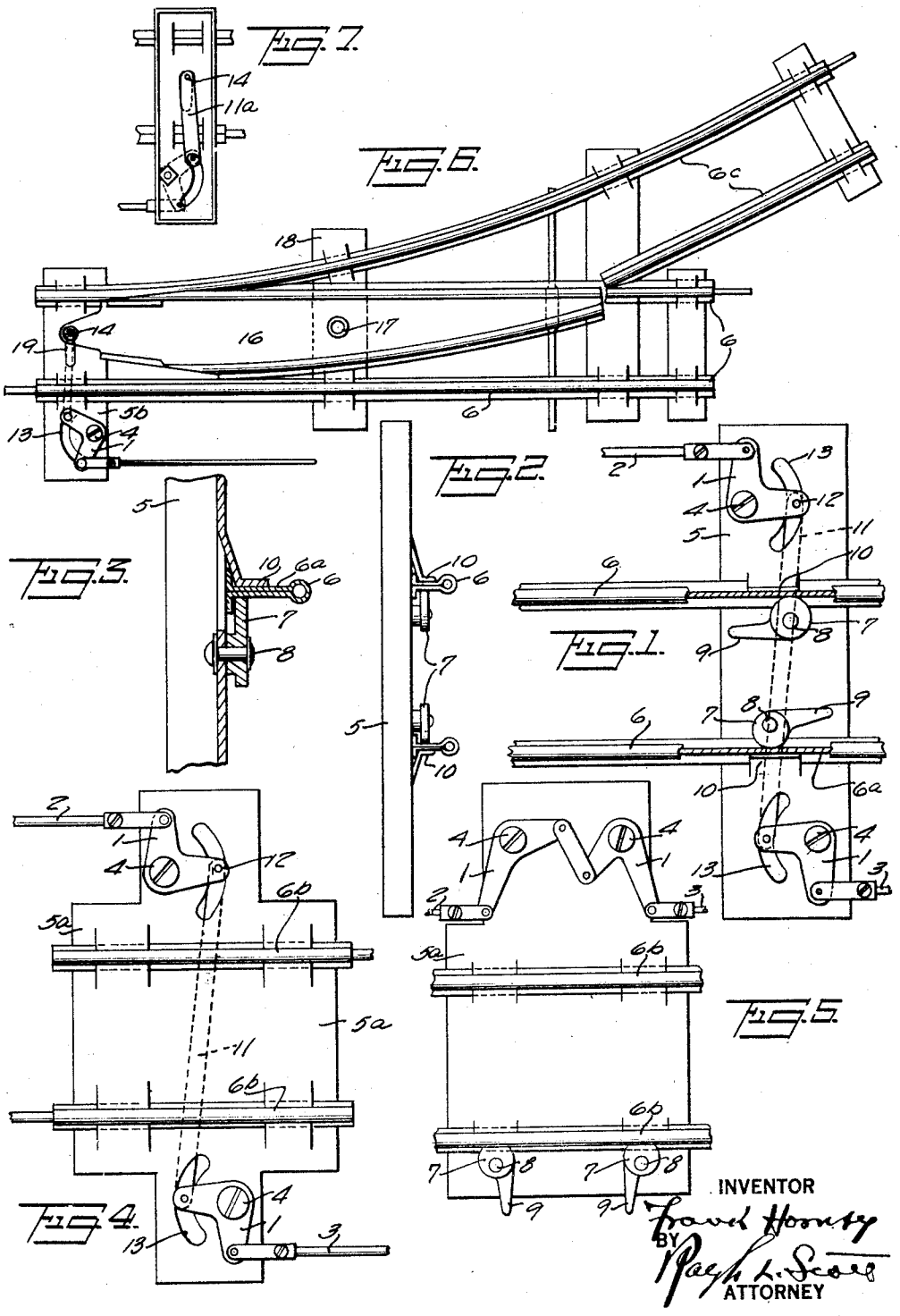
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TRACK FOR TOY TRAINS

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TRACK FOR TOY TRAINS.

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This invention relates to toy railway outfits, specifically to an improved type of fitting for use in connection with the switch and signal operating mechanism for toy tracks.

Great difficulty has been experienced with toys of this character because of the inability of young boys, for whom they are primarily intended, correctly to position and firmly to secure in place the switch and signaling mechanism forming an important part of the outfits. Heretofore it has been the custom to place such mechanism directly on the floor or other surface supporting the track, and more or less effectively secure the same in position by tacks or screws. In such cases incorrect positioning will prevent smooth working of the mechanism, the surface is damaged by screw holes, and the position of the parts can not be changed without causing further damage.

The object of the present invention is the provision of simple means whereby such mechanism may be carried by the track itself, the means being detachable and capable of being accurately positioned at any desired point along the track and there securely held in place, thus insuring the most efficient working of the parts.

According to this invention the bell crank lever or levers for translating the motion of a rod for the switch or signal gear are mounted on a sole plate which is positioned beneath the rails of the track in the manner of a sleeper, and then secured to the rails. The plate may be detachable and carry a gripping means such as a pivoted cam element or gripping screw or screws, the cam element or the screws being adapted to close against the rail or sleepers when the plate has been fixed in the desired position and grip the rail or sleeper by pressing it against a rear abutment which may be a fin or web stamped up from the plate. This abutment may be arranged to engage one side of a rail the opposite side of which is gripped by the cam or screws, or the abutment may engage behind the opposite rail of the track. The former arrangement is preferable however, as the gauge of the rails is not disturbed by such gripping action. The bell crank or cranks are thus carried from the track itself.

In a modification, instead of a detchable sole plate for carrying the bell cranks, a short section of track may be provided having a special sleeper to which the cranks are pivoted, so that by interposing such section in the main track to which it is adapted readily to be coupled the crank levers may be quickly and accurately fixed near the rails in a standard position.

Apparatus in accordance with this invention is illustrated in the accompanying drawings in which—

Fig. 1 is a plan view of a detchable element adapted to be inserted under the track rails and gripped thereto, the element carrying two bell crank levers;

Fig. 2 is a side view of Fig. 1;

Fig. 3 an enlarged fragmentary sectional view of the cam grip;

Fig. 4 is a plan of a short section of track having a special fixed sleeper on which a bell crank is pivoted at each end;

Fig. 5 is a plan of a similar short section with two bell cranks pivoted at one end of the sleeper;

Fig. 6 is a plan of a switch point operating gear showing the bell crank pivoted on a special sleeper; and

Fig. 7 is an inverted plan view of the special sleeper.

In carrying out the invention and referring first to the form shown in Figs. 1, 2 and 3, the bell crank levers 1, for translating the motion of the operating rod 2 to the rod 3 on the other side of the track, are pivoted at 4 to a sole plate or sleeper element 5 which is adapted to be positioned beneath the rails 6 of the track in the manner of a sleeper. The bell cranks 1 on opposite sides of the track are connected by a link 11, the pivotal connections 12 being shown as working in curved slots 13.

The sleeper element is provided with any suitable means by which it may be gripped to the rails after it has been positioned as desired along the track. In the arrangement shown, cams 7 are eccentrically pivoted at 8 on the sleeper element, which cams are rotatable by the tails 9. On the sleeper element 5 are abutments 10 which, when the element is a sheet metal stamping, may be fins or webs pressed up from the metal as shown. The abutment 10 is preferably arranged to engage the outer side of the web 6^a of the same rail which is gripped by the cam 7 on the inner side as shown; but, if desired, only one cam and one abutment may

be provided, the abutment engaging behind one rail while the cam engages the other rail. Such an arrangement, however, is likely to bend slightly one or both rails and disturb the gauge. The former method is therefore preferable. In order to ensure a good frictional grip against the rails the edge of the cam 7 and the rib 10 or the like against which the rail is pressed may be roughened or serrated.

Where a cam grip such as 7 is fitted, owing to the facility by which it may be closed or released, the mechanism may be readily positioned and secured at different points along the track to suit the particular requirement of the switch point or signal operating gear, the bell cranks always being the same standard distance out from the track.

In the modification shown in Fig. 4 the bell cranks 1 are pivoted on a sole plate 5^a in the form of a special sleeper permanently secured to short lengths of rail 6^b, the sleeper and these rails forming an independent short section of track. The bell cranks 1 are pivoted at 4 to the sleeper, and connected by a link 11. Such a short section of track may be interposed at any desired point in the main track and connected therewith in any well-known manner. When so installed, the bell cranks of the section will be set at a standard distance out from the track.

In Fig. 5 is shown a short section like that of Fig. 4, but with a double bell crank compensator mounted at one end of the sleeper. By such arrangement of the cranks the pull of the rod 2 is converted into a thrust of rod 3, or vice versa.

In Figs. 6 and 7 the invention is shown applied to a switch point gear. A special sleeper 5^b carrying a bell crank 1 pivoted at 4, at a standard distance from the track, is actuated by the rod 2, the other arm of the bell crank being connected at 14 by a link 11^a to the switch rail 16 which is itself pivoted at 17 on the next sleeper 18. The pivotal connection 14 of the link 11^a slides in a slot 19 cut in the sleeper 5^b. As the rod 2 is actuated in one or the other direction, the switch rail opens or closes the branching track rails 6^c.

With all the arrangements described it is ensured that the pivots 4 of the bell crank levers will be readily and yet accurately set at a standard distance from the track rails, thus eliminating any necessity for carefully plotting the positions for such pivotal connections as is necessary in the present systems where the bell cranks are pivoted to the floor independently of the track; further, these crank pivots being carried by the sleeper elements 5, 5^a and 5^b and not by the floor or other surface on which the track is laid, no damage is done to such surface; and, in addition to the other advantages, the track with its attached elements may be moved about and put in any desired location with the assurance that the mechanism is properly positioned and that the parallelism of the switch and signal operating rods with the rails will be always maintained.

Having thus described the invention, the following is claimed:

1. In combination with a track for toy trains, a sleeper element adapted to be positioned in any portion of the track beneath the rails and secured thereto, said element comprising a plate having pivotally mounted thereon at least one bell crank lever adapted to be coupled to an operating rod for a switch, signal, or the like.

2. A detachable element for use in combination with a track for toy trains comprising a plate having a bell crank lever mounted on each end thereof to which a switch or signal operating rod is adapted to be coupled, a connecting rod between the inner arms of said levers, and a pivoted cam with a co-operating abutment carried by the element adapted to grip the rails therebetween to secure the element to the track.

3. A detachable element for use in combination with a track for toy trains comprising a plate having a bell crank lever mounted on each end thereof to which a switch or signal operating rod is adapted to be coupled, a connecting rod between the inner arms of said levers, and means carried by said element for securing it to the rails.

4. In combination with a track for toy trains, an element comprising a plate having a bell crank lever pivoted on each end thereof to which a switch or signal operating rod is adapted to be coupled, a connecting rod between the inner arms of said levers, rails secured to said plate and positioned transverse to said connecting rod, and means for detachably securing said plate between any two sections of track.

In testimony whereof, I have signed my name to this specification.

FRANK HORNBY.