

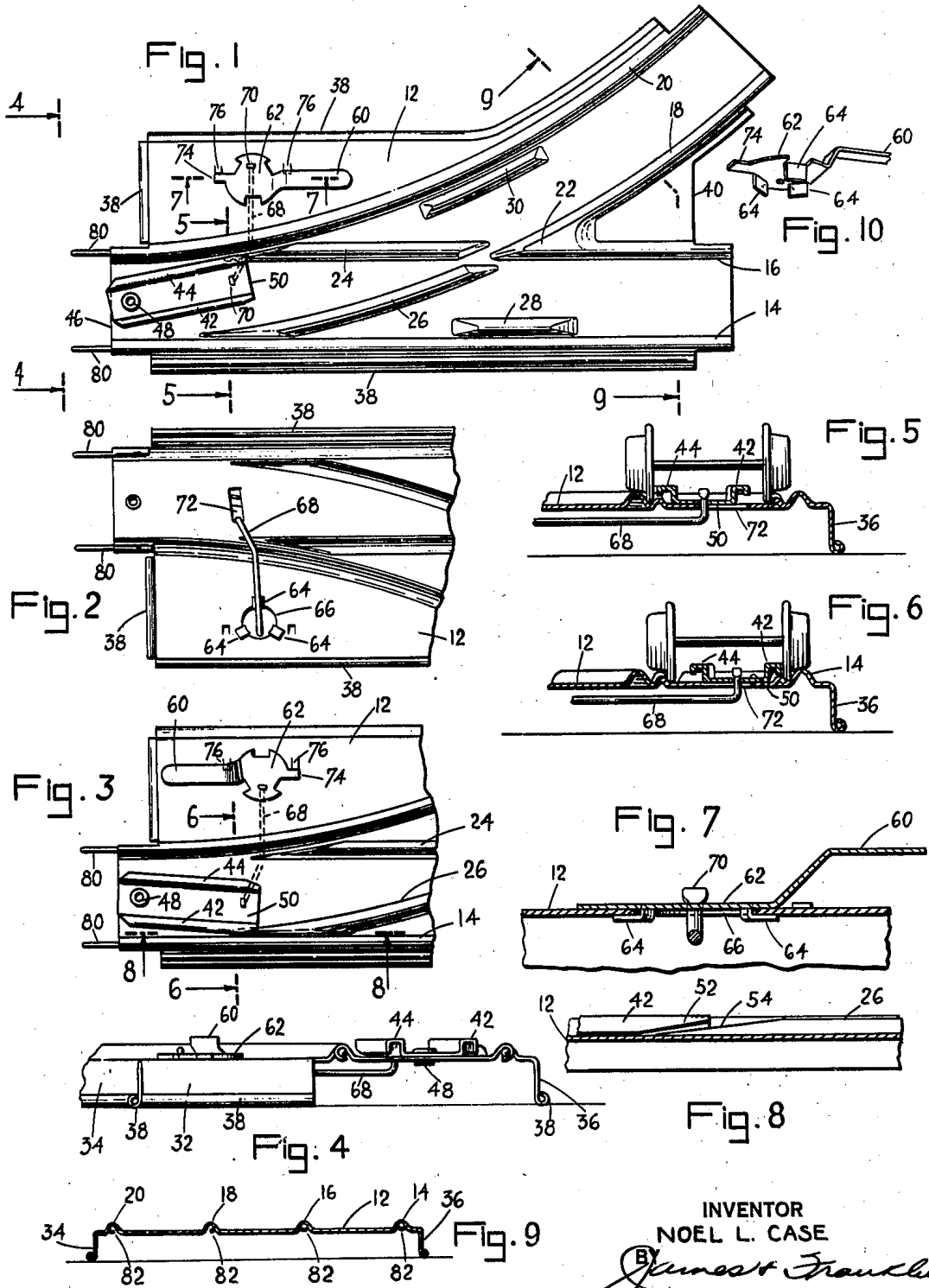
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TRACK SWITCH FOR TOY RAILWAYS

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TRACK SWITCH FOR TOY RAILWAYS

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5 Claims. (Cl. 246—393)

This invention relates to toy railroads, and more particularly to a track switch for the same.

The primary object of my invention is to generally improve track switches for toy railways. More particularly objects are to simplify and improve the movable part of the switch so as to dispense with the need for a conventional switch point; to simplify and improve the mechanism for operating the switch; and finally, to simplify and improve the construction of the switch rails per se, these preferably being formed of the same piece of sheet metal that is used for the base of the switch.

To the accomplishment of the foregoing and such other more specific objects as will hereinafter appear, my invention consists in the track switch elements and their relation one to the other, as hereinafter are more particularly described in the specification, and sought to be defined in the claims.

This specification is accompanied by a drawing, in which:

Fig. 1 is a plan view of a track switch embodying features of my invention;

Fig. 2 is a bottom view of the end portion of the switch;

Fig. 3 is a plan view of the end portion of the switch showing the guard rail plate moved to a position opposite that shown in Fig. 1;

Fig. 4 is an end elevation of the switch looking in the direction of the arrows 4—4 of Fig. 1;

Fig. 5 is a fragmentary section through the switch, taken approximately in the plane of the line 5—5 of Fig. 1;

Fig. 6 is a similar view but with the swiveled guard rail plate in opposite position, this section being taken approximately in the plane of the line 6—6 of Fig. 3;

Fig. 7 is a fragmentary section drawn to enlarged scale, and taken approximately in the plane of the line 7—7 of Fig. 1;

Fig. 8 is a fragmentary section drawn to enlarged scale, and taken approximately in the plane of the line 8—8 of Fig. 3;

Fig. 9 is a section through the branched end of the switch, taken approximately in the plane of the line 9—9 of Fig. 1; and

Fig. 10 is a perspective view of the operating handle, before it is applied to the base of the switch.

Referring to the drawing, the switch comprises a base plate 12 which may be made of a single, relatively extensive piece of sheet metal. The rails of the switch are preferably formed by pressing or channeling the sheet metal upwardly,

as is most clearly shown in Fig. 9. There are main-line rails 14 and 16, and branch-line rails 18 and 20. The inner rails 16 and 18 are joined at a frog 22 (Fig. 1) which is pressed upwardly from the sheet metal base. The switch further comprises a main-line cross-rail 24 and a branch-line cross-rail 26. These converge toward frog 22. The main-line cross-rail bridges the gap in the main-line rail across the branch-line rails, and the branch-line cross-rail bridges the gap in the branch-line rail across the main-line rails. Appropriate space is left at the ends of the cross-rails 24 and 26 for passage of the flanges of the wheels. As an added refinement and safety feature, stationary guard rails 28 and 30 may also be pressed upwardly from base 12, these being located opposite the frog 22 to guard against accidental derailment at that point.

The rails are pressed or drawn upwardly from base 12 an amount adequate to accommodate the wheel flanges, but it is not feasible to draw them upwardly to a height equalling that of the ordinary track sections of conventional toy railroads. The edges of base 12 are accordingly preferably turned downwardly to form support flanges which bring the rails to proper height. The lower edges of these flanges may, if desired, be rolled or curled to prevent cutting or scratching by the sheet metal edge. The end and side flanges are numbered 32, 34 and 36 in Figs. 4 and 9, while the rolled or beaded edges are numbered 38. An additional flange and rolled edge may, if desired, be provided at the edge 40 (Fig. 1).

The movable part of the switch comprises guard rails 42 and 44 which are pivoted at the common end 46 of the switch by means of an eyelet 48. The guard rails 42 and 44 are preferably formed in a simple manner by bending the edges of a plate 50 so that in effect the guard rails are mounted on plate 50, and the latter is pivoted at 48 for movement toward either the outer rail 14 of the main line, or the outer rail 20 of the branch line. When the guard rail plate 50 is moved toward outer rail 14, as shown in Figs. 3 and 6, the wheels of the toy car are guided along the main line by reason of the action of guard rail 42 on the inside of the flange of the right-hand wheel. When the guard rail plate 50 is turned toward the outer rail 20, as shown in Figs. 1 and 5, the wheels are guided onto the branch line, this being caused by the action of guard rail 44 on the inside of the flange of the left-hand wheel. The swiveled guard rails are preferably made long enough so that they are moved to the ends of the cross-rails 24 and 26. These ends

are shaped to lie parallel to the adjacent outer rails and thus themselves act as an appreciable length of guard rail in continuation of the swiveled guard rail.

In the specific structure here shown, the ends of the guard rails and the cross-rails actually overlap somewhat, and provision is made for that purpose. Thus, in Fig. 8, it will be seen that the lower side of guard rail 42 is cut away at 52 and is shaped to overlie the sloping end 54 of the cross-rail 26. The ends of guard rail 44 and cross-rail 24 are similarly matingly shaped to overlie one another.

The mechanism for moving the swiveled guard rails comprises a sheet metal handle 60 extending radially from and preferably formed integrally with a sheet metal hub portion 62. The hub portion has a plurality of lugs struck downwardly therefrom and located on the periphery of a circle (see Fig. 10). These lugs are shown at 64 in Figs. 2 and 7, and pass through a mating circular hole 66 in base 12. The lugs are then turned outwardly, thus rotatably fastening the handle and hub to base 12. It will be seen from inspection of Figs. 1 and 3, that the hub 62 is incised radially inwardly at the lugs, or in other words, that the outer dimension of the hub is larger than the circular hole 66 in the base, so that the hub overlies the base around the hole.

The hub 62 has a small crank hole punched therethrough at a point offset from the center of the hub. The eccentricity must, of course, be less than the radius of the relatively large circular hole 66 in the base. A stiff wire link 68 extends beneath base 12 and is turned upwardly to pass through a hole in guard rail plate 50, and through the crank hole in hub 62. The upwardly projecting tips of the wire 68 may be pinched or flattened, as is indicated at 70, thus anchoring the wire to the plate 50 and hub 62. It will be understood that the base 12 is slotted, as is indicated at 72 in Fig. 2, to accommodate the movement of link 68. It will be evident from comparison of Figs. 1 and 3, that by swinging the handle 60 from the position shown in Fig. 1 to the position shown in Fig. 3, the link 68 is moved downwardly as viewed in the drawing, thereby shifting the guard rail plate 50 from the switch position shown in Fig. 1 to that shown in Fig. 3.

The hub 62 may, if desired, be provided with a stop finger 74 cooperating with stop abutments 76 struck upwardly from base 12. These abutments 76 are preferably so located as to afford 180-degree rotation of handle 60, and the abutments are so located relative to the crank hole that the latter will be in dead-center position when the handle is moved to one end or the other of its permitted rotation. The movement of the handle is outwardly, so that the handle may be operated without interfering with the rails of the switch.

The ends of the rails may be curled about connecting pins 80 at one end of the switch, and curled to form hollow sockets 82 (Fig. 9) at the other end of the switch, these sockets being dimensioned to frictionally receive similar connecting pins on other track sections. The arrangement of connecting pins may, of course, be varied, depending on the scheme used for the regular trackage of the particular toy railroad with which the switch is to be employed.

It is believed that the construction and operation of my improved track switch for toy railroads, as well as the advantages thereof, will

be apparent from the foregoing detailed description. It will also be apparent that while I have shown and described the invention in a preferred form, changes and modifications may be made in the structure disclosed, without departing from the spirit of the invention as sought to be defined in the following claims.

I claim:

1. Operating mechanism for a toy railway track switch having a base and a movable switch part, said operating mechanism comprising a handle formed out of a single piece of sheet metal and including a flat hub portion incised radially inwardly to form a plurality of downwardly struck lugs located on the periphery of a circle, smaller than the hub portion said lugs being received in a mating circular aperture in the base and being bent outwardly beneath the base to rotatably fasten the handle on the base against either downward or upward movement, a stop finger on said hub portion cooperating with stop abutments struck from said base, and a wire link disposed beneath the base between the movable part of the switch and a crank hole in the hub offset from the center of the hub, whereby rotation of the handle between the stop abutments moves the link and movable switch part to one switch position or the other.

2. Operating mechanism for a toy railway track switch having a base and a movable switch part, said operating mechanism comprising a handle formed out of a single piece of sheet metal and including a flat hub portion incised radially inwardly to form a plurality of downwardly struck lugs located on the periphery of a circle smaller than the hub portion, said lugs being received in a mating circular aperture in the base and being bent outwardly beneath the base to rotatably fasten the handle on the base against either downward or upward movement, stop means on said hub portion cooperating with stop means struck from said base, and a wire link disposed beneath the base between the movable part of the switch and a crank hole in the hub offset from the center of the hub, whereby rotation of the handle between the stop means moves the link and movable switch part to one switch position or the other, the stop means being so located as to permit rotation through 180°, with the crank hole offset in the direction of the link at the ends of the permitted movement, so that the switch is locked by the dead center positions of the handle.

3. A toy railway switch comprising a relatively extensive sheet metal base having downwardly turned flanges, said base being upwardly pressed to form main-line rails, branch-line rails, a switch frog, a main-line cross-rail and a branch-line cross-rail converging toward the switch frog, the main-line cross-rail bridging the gap in the main-line rail across the branch-line rails, and the branch-line cross-rail bridging the gap in the branch-line rail across the main-line rails, stationary main-line and branch-line guards opposite the frog of the switch, and a swiveled guard rail plate consisting of a piece of sheet metal having guard rails bent upwardly therefrom, said plate being located and swiveled at the common end of the switch, its inner end being movable toward the outer branch-line rail to the end of the main-line cross-rail or being oppositely movable toward the outer main-line rail to the end of the branch-line cross-rail, a switch-operating handle formed out of a single piece of sheet metal and including a flat hub por-

tion incised radially inwardly to form a plurality of downwardly struck lugs formed on the periphery of a circle smaller than the hub portion, said lugs being received in a mating circular aperture formed in the base in the region alongside the common end of the switch, said lugs being bent outwardly beneath the base to rotatably mount the handle on the base against either downward or upward movement, a stop finger on said hub portion cooperating with stop abutments struck upwardly from the base, and a wire link disposed beneath the base between the swiveled guard rail plate and a crank hole in the hub offset from the center of the hub, whereby rotation of the handle between the stop abutments moves the link and the swiveled guard rail plate to one switch position or the other.

4. A toy railway switch comprising a sheet metal base, main-line rails, branch-line rails, a main-line cross-rail, a branch-line cross-rail, the main-line cross-rail bridging the gap in the main-line rail across the branch-line rails, and the branch-line cross-rail bridging the gap in the branch-line rail across the main-line rails, and a swiveled guard rail plate having guard rails, said plate being located and swiveled at the common end of the switch, its inner end being movable toward the outer branch-line rail to the end of the main-line cross-rail or being oppositely movable toward the outer main-line rail to the end of the branch-line cross-rail, a switch-operating handle formed out of a single piece of sheet metal and including a flat hub portion incised radially inwardly to form a plurality of downwardly struck lugs located on the periphery of a circle smaller than the hub portion, said lugs being received in a mating circular aperture in the base, said lugs being bent outwardly beneath the base to rotatably fasten the handle on the base against either downward or upward movement, stop means on said hub portion cooperating with stop means on said base, and a wire link disposed beneath the base between the swiveled guard rail plate and a crank hole in the hub offset from the center of the hub, whereby rotation of the handle moves the link and the swiveled guard rail plate to one

switch position or the other, the stop means being so located as to permit rotation through 180°, with the crank hole offset in the direction of the link at the ends of the permitted movement, so that the switch is locked by the dead center positions of the handle.

5. A toy railway switch comprising a relatively extensive sheet metal base having downwardly turned flanges, said base being upwardly pressed to form main-line rails, branch-line rails, a switch frog, a main-line cross-rail and a branch-line cross-rail converging toward the switch frog, the main-line cross-rail bridging the gap in the main-line rail across the branch-line rails, and the branch-line cross-rail bridging the gap in the branch-line rail across the main-line rails and a swiveled guard rail plate consisting of a piece of sheet metal having guard rails bent upwardly therefrom, said plate being located and swiveled at the common end of the switch, its inner end being movable toward the outer branch-line rail to the end of the main-line cross-rail or being oppositely movable toward the outer main-line rail to the end of the branch-line cross-rail, a switch-operating handle formed out of a single piece of sheet metal and including a flat hub portion incised radially inwardly to form a plurality of downwardly struck lugs located on the periphery of a circle smaller than the hub portion, said lugs being received in a mating circular aperture in the base, said lugs being bent outwardly beneath the base to rotatably fasten the handle on the base against either downward or upward movement, stop means on said hub portion cooperating with stop means on said base, and a wire link disposed beneath the base between the swiveled guard rail plate and a crank hole in the hub offset from the center of the hub, whereby rotation of the handle moves the link and the swiveled guard rail plate to one switch position or the other, the stop means being so located as to permit rotation through 180°, with the crank hole offset in the direction of the link at the ends of the permitted movement, so that the switch is locked by the dead center positions of the handle.

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