PATENT SPECIFICATION

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COMPLETE SPECIFICATION

Improvements in or connected with Points for Model Electric Railways

We, TRIX LIMITED, of 91, Regent Street, London, W.1, a British Company, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to improvements in or modifications of the invention set forth in the specification and drawings of Patent Application No. 18891 of 14th July, 1948, and is intended to form a patent of addition thereto.

In the invention set forth in the application No. 18891 of 1948, the points for model electric railways are so constructed that the switch blades are actuated by an armature rockably moved by one or the other of two electro-magnets, the whole of the electrical mechanism being contained within the base of the points.

In the example described, the points comprise a hollow base of insulating material carrying the rails on the upper surface, a slide of insulating material in said base to which the non-pivoted ends of the switch blades are connected, two electro-magnets located in said hollow base, an armature rockably mounted in relation to said electro-magnets, an actuating lever pivotally connected intermediate of its length on said armature, one end of the lever co-acting with a stud on the armature and the other end co-acting with a stud on the slide, and the object of the present improvements or modification is to simplify the means of actuating the switch blades whilst at the same time containing the whole of the electrical mechanism within the base of the points.

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It has been proposed in a track switch to employ two solenoid windings with a movable armature mechanically connected to a movable element of the track switch and a movable contact element comprising an insulating bar having a spring contact arm positioned at each end and overlying the armature, the spring contacts co-acting with stationary contacts, each comprising a long and a short contact, the short contacts each being electrically connected to a power rail in the track section and the long contacts each being electrically connected to one of the solenoid windings, the electrical mechanism being contained in a box or casing at the side of and above the track base and rails.

According to this invention, the improvement or modification consists in that the switch blades are actuated by a core or member moved by one or more electric solenoids, the whole being contained within the base of the points.

The invention will be clearly understood from the following description aided by the accompanying drawings, in which:—

Figure 1 is a plan of a point. Figure 2 an underplan, and Figure 3 a perspective view of a detail.

According to the example shown on the accompanying drawings, the points, as described in the parent application, comprises a base 1 of insulating material having depending flanges 2. On the upper face of the base 1 are ribs over which inverted **U**-shaped metal outer rails 3, 4 and centre rails 5 are mounted. The outer rails 3, 4 are electrically connected by clips 7 to spring connectors 8 and the centre rail 5 by clips 9 to spring con-

nectors 10 for connecting the rails of the points to the rails of adjoining sections as is known.

11 are guard rails.

The pivot piece 12 fixing the switch blades 13, 14 is pivotally mounted at one end on a pivot 15, the other ends of the blades 13, 14 being connected to a slide 16 of insulating material by clips which pass through the slide 16 and are formed on the inner side with contacts 17, 18 adapted to make contact with the inner ends of the spring connectors 8.

According to this improvement or modification, in the underside of the hollow base 1 are located two small solenoids 19, 20 in which is slidably located a core 21 of soft iron to which is secured an extension piece 22 of brass or other non-magnetic material. In the extension 22 is a slot 23 with the ends parallel with the line of movement of the core 21 and with the main part of the slot 23 at an angle thereto, the slot 23 engaging with a pin 24 on the slide 16. In the extension piece 22 is also formed another slot 25 near to one edge.

On the upper face of the base 1 are two lugs 27, 28 in which is rockably supported a hand operating lever 29, the lower end of which passes through a slot in the base 1 and engages with one end of a lever 30 pivotally mounted at a little distance from the end on a pivot 30*a*, the other end of the lever 30 being turned up and engaging in the slot 25 in the extension 22 of the core 21.

The solenoids 19, 20 are in alignment and end to end, and are connected by leads 31, 32 to terminals 33, 34 respectively and by a common return lead 35 and leads 37 to the central or neutral rails 5 through clips 9.

The sections of the outer rails 3, 4 on the straight portion of the track are connected by leads 36 to the respective outer rails 3, 4 on the curved portion of the track.

The leads from the control are connected to the terminals 33, 34 with the return through the centre rail 5. On closing the circuit to say the left hand solenoid 19 in Figure 2, the coil of the solenoid 19 is energised and the core 21 attracted and caused to move into this solenoid 19. The angled portion of the slot 23 in the extension 22 riding on the pin 24 causes the slide 16 to move over for the piece 12 and blades 13, 14 to be in position for the train to run over the curved portion of the track. When in this position, the pin 24 is in the appropriate straight end portion of the slot 23 and locks the blades 13, 14 in position. The contact 18 of the blade 14 on the slide 16 contacts with the spring connector 8 of straight outer rail 3 and makes the rail live, at the same time the contact 17 of the blade 13 is free of the spring connector 8 of the curved outer rail 4 so that the blade 13 is dead.

If desired, the central rail spring connector 10 at this end could be so arranged that the contact 17 makes contact with the spring connector 10 so as to earth the blade 13. *Vice versa* when the other solenoid 20 is energised the slide 16 is moved over and the contact 18 makes contact with the spring connector 10 of the centre rail so that the spring contact 10 always contacts with the idle blade 13 or 14.

When the solenoid 20 is energised the core 21 is attracted into this solenoid 20 and the piece 16 and lever 30 are rocked in the opposite direction to move the blades 13, 14 for the train to run on the straight portions of the track.

By rocking the hand lever 29 the points can be actuated by hand without electrical operation.

The underside of the base 1 is closed by a cover plate.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is:—

1. The improvement in or modification of the points for model electric railways as set forth in the specification and drawings of Patent Application No. 18891 of 14th July, 1948, wherein the switch plate is actuated by a core or member moved by one or the other of two electric solenoids, the whole of the electrical mechanism being contained within the base of the points.

2. Points for model electric railways as claimed in claim 1, wherein a hand operated lever is provided for manually actuating the switch blades.

3. The improvements in or modifications of the points for model electric railways as set forth in the specification and drawings of Patent Application No. 18891 of 1948, wherein the slide to which the non-pivoted ends of the switch blades are connected is provided with a pin, two electric solenoids are located in alignment and end to end in the hollow base, a core is slidably located in said solenoids, the core being provided with an extension having an angled slot with straight ends engaging with the pin on the slide, so arranged that on energising one or the other of the solenoids, the core and extension are moved for the slot in the extension acting on the pin to move the slide to actuate the switch blades, the whole

of the electrical mechanism being contained within the base of the points, substantially as set forth.

4. Points for model electric railways as claimed in claim 3, wherein a hand lever is rockably mounted in the upper face of the base, the lower end of the hand lever projecting down through a hole in the base, a lever pivotally mounted intermediate of its ends in the hollow base, one end of the lever being engaged by the lower end of the hand lever and the other end of the pivoted lever engaging with the extension of the core, substantially as set forth.

5. In points for model electric railways as set forth in the specification and drawings of Patent Application No. 18891 of 1948, the improvement in or modification constructed substantially as described with reference to the accompanying drawings.

Dated this 22nd day of December, 1948.

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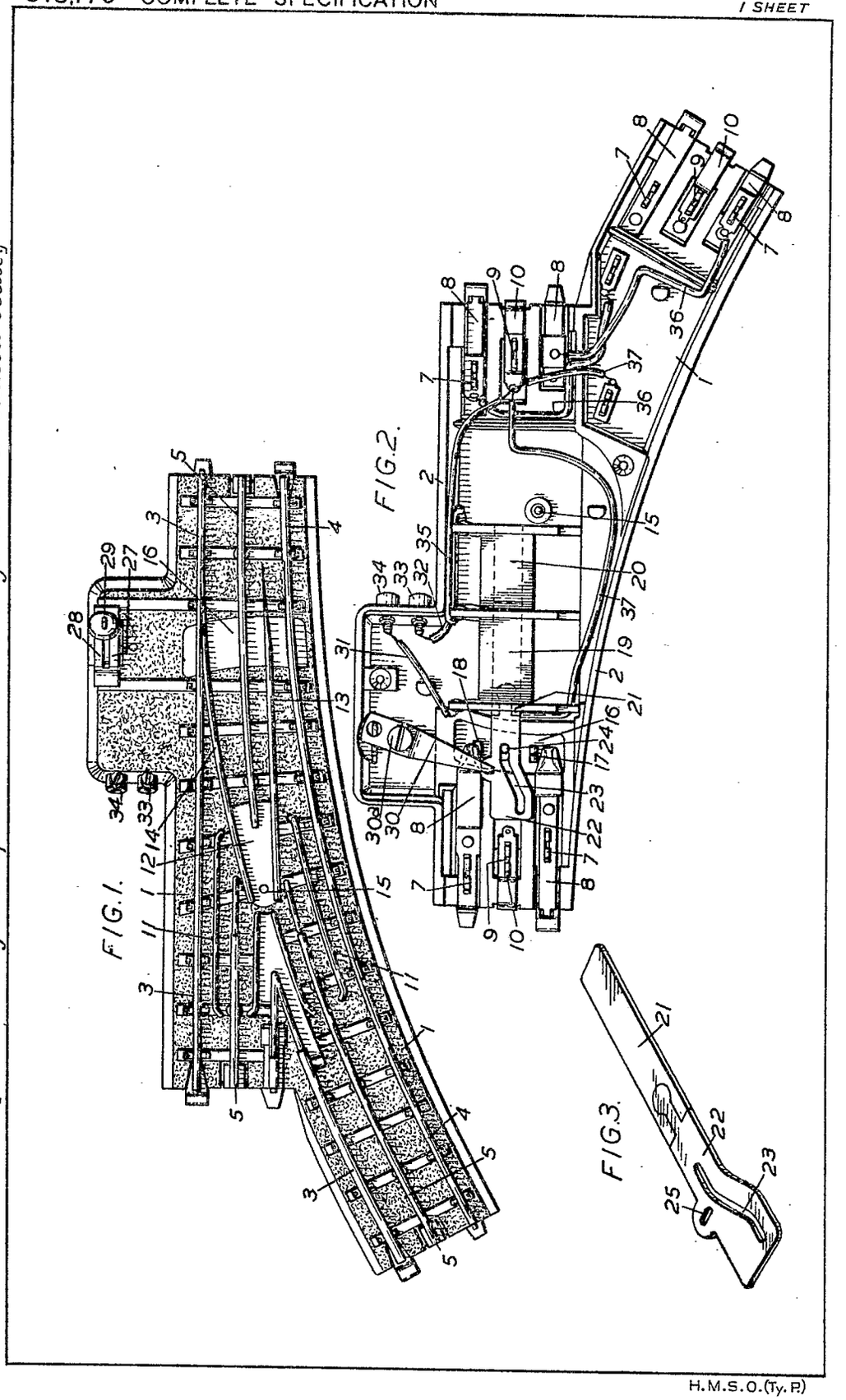
[This Drawing is a reproduction of the Original on a reduced scale.]



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