Dec. 15, 1936. L. MARX 2,064,311

SIGNAL SYSTEM FOR TOY RAILROAD TRAINS

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Fig. 1.

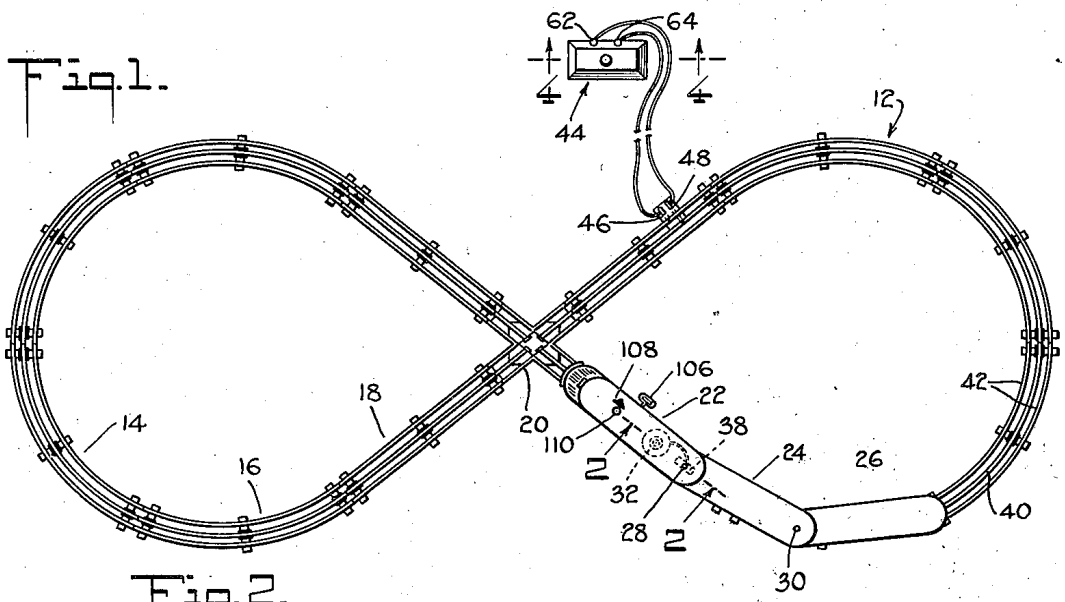


Fig. 2.

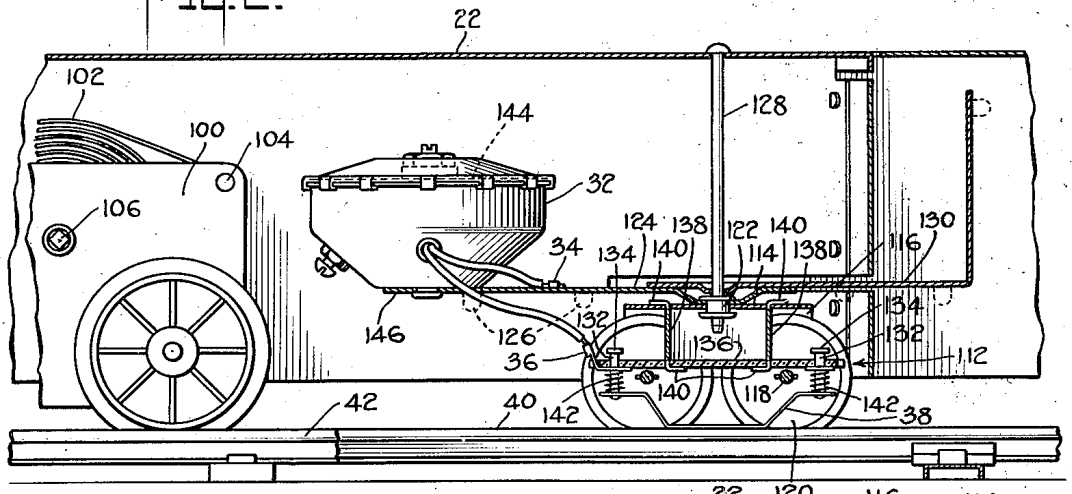


Fig. 3.

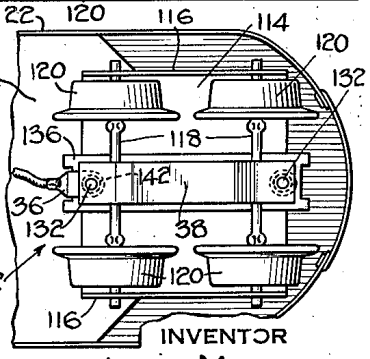


Fig. 4.

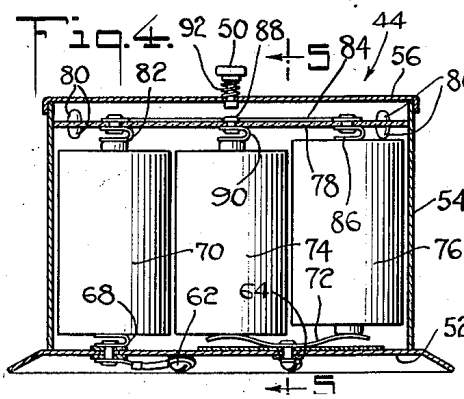
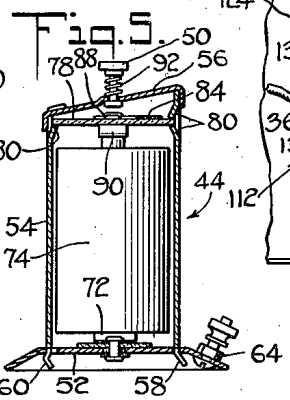


Fig. 5.



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SIGNAL SYSTEM FOR TOY RAILROAD TRAINS

Louis Marx, New York, N. Y.

Application August 21, 1935, Serial No. 37,129

9 Claims. (Cl. 46—216)

This invention relates to toy railroad trains, and more particularly to a signal system therefor.

The primary object of the present invention resides in the provision of a remotely controlled train signal, the signal being mounted on the train, yet controllable by means of a stationary trackside switch or like control element. This is preferably accomplished by the use of an extra rail engaged by a contact or wiper shoe on the train, said rail being energized from an external source by remote control. In this manner the signal may be operated at any point on the track system.

In accordance with a further feature and object of my invention, the system is applied to relatively inexpensive train systems of the mechanically operated or spring-wound type. These trains ordinarily run on a two-rail track, but I employ a track having an extra third rail preferably centrally located, as in train systems which are electrically operated. In fact, the track system employed is preferably of the standard type ordinarily used with electrically operated toy trains. The signal is preferably of the vibratory diaphragm type which resembles an automobile horn or similar device rather than a conventional locomotive bell or whistle.

To the accomplishment of the foregoing and other objects which will hereinafter appear, my invention consists in the toy train signal system and the elements thereof and their relation one to the other, as are hereinafter more particularly described in the specification and sought to be defined in the claims. The specification is accompanied by a drawing, in which:

Fig. 1 is a plan view of a toy train system embodying features of my invention;

Fig. 2 is a vertical section taken in elevation in the plane of the line 2—2 of Fig. 1;

Fig. 3 is an inverted plan view of the rear truck of the locomotive;

Fig. 4 is a section taken in elevation in the plane of the line 4—4 of Fig. 1; and

Fig. 5 is a section taken in the plane of the line 5—5 of Fig. 4.

Referring to the drawing, the toy train system preferably comprises a track layout 12 of any desired shape, here exemplified by a figure 8. The system is made up in conventional fashion of a plurality of individual track sections 14, 16, 18, etc., and a cross-over 20. A train runs on track system 12, the train comprising in the present instance a locomotive 22, an intermediate car 24 and a trailing car 26, these cars preferably being of the streamlined type and being articulated at the points 28 and 30. The locomotive carries an electrically operated signal 32, one terminal of which is grounded as indicated at 34 in Fig. 2, and the other terminal of which is connected at 36 to a third rail contact shoe or wiper 38. This shoe is insulatedly mounted on the locomotive and is positioned to engage an extra or third rail 40, which in the present case is located centrally between the outer or regular wheel-carrying rails 42.

A suitable source of energy here exemplified by a battery box 44 is connected to one of the grounded or outer rails 42 and to the extra rail 40, this being indicated by the connections 46 and 48. The electrical circuit is interrupted by a suitable switch preferably controlled by a manually depressible push button 50 which may for convenience be located directly on battery box 44.

It will be manifest that with this arrangement the train may run on the track and the signal 32 may be energized whenever desired under remote control by simply depressing the switch 50. The location of the train or whether it is stationary or in motion in no way affects the signal control arrangement.

Considering the system in greater detail, the battery box is preferably constructed as shown in Figs. 4 and 5, and comprises a base 52, side walls 54 and a cover 56. The side wall 54 and cover 56 are preferably removable from base 52 as a unit by reason of bent tongues 58 on one side of the box and spring detents 60 at the opposite side of the box.

The base is provided with screw terminals 62 and 64, one of which, in this case the terminal 64, is grounded as shown in Fig. 5, and the other of which, in this case the terminal 62, is insulatedly mounted by appropriate insulation washers. Terminal 62 is connected to an insulatedly mounted spring contact 68 best shown in Fig. 4, and adapted to bear against one end of a battery cell 70, which is preferably of the flashlight type. Base 52 also has insulatedly mounted thereon a bowed spring contact 72 adapted to bear against the ends of two additional flashlight battery cells 74 and 76.

The housing formed by the side walls 54 and the top wall 56 carries a sheet of insulation 78 therein which is held rigidly in place by appropriate tongues 80 struck inwardly from the side walls. The insulation plate 78 carries a spring contact 82 bearing against the upper end of cell 70. This contact is connected by means of a metallic strip 84 to a spring contact 86 which bears against the upper end of cell 76. It should be understood that strip 78 is curved or other-

wise shaped to clear the central contact 88, this being best shown in Fig. 4.

The central contact 88 carries a bent spring element 90 which bears against the upper end of cell 74. The manually depressible push button 50 is located directly above central contact 88 and is normally elevated by a compression spring 92 surrounding the stem of the button. It will be observed that certain of the cells are appropriately inverted with respect to the others so that they are connected in series. Specifically, in the present case, a circuit may be traced beginning with insulated terminal 62 and running to the negative pole of cell 70, thence to the positive pole of cell 70 and through metallic strip 78 to the negative pole of cell 76, thence through the positive pole of cell 76 to bowed contact 72, thence through the negative pole of cell 74 to its positive pole and the contact 88, which, when button 50 is depressed, is grounded and thereby connected to the casing and consequently to the grounded terminal 64.

The track system may carry the extra rail 40 in any desired manner, but in the present case, in which the locomotive is manually driven and itself requires no third rail, I prefer to use track sections of the standard type ordinarily used in electrically operated toy trains. Because of the standardized nature of this track, the cost of the system is materially reduced.

The train may be of conventional type and the signal may be located anywhere in the train, but is preferably located as here shown, in the locomotive. The present locomotive is of the streamlined type and comprises a front motor-driven truck 100, the rear portion of which is shown in Fig. 2, the wheels being propelled by a spring 102, one end of which is connected to the motor frame at 104 and the other end of which is connected to and may be wound by a suitable winding stem 106. The operation of the train may be controlled by a stop lever 108 shown projecting through the roof of the locomotive, in Fig. 1. The motor truck is preferably pivotally mounted as by the pivot 110.

The locomotive further comprises a rear idler truck generally designated 112 and made up of a sheet metal plate 114 the sides of which are bent downwardly to form axle-bearing flanges 116 which carry axles 118 supporting flanged wheels 120. This truck is pivoted by means of an eyelet 122 passing through truck plate 114 and a suitable bottom or coupling plate 124 extending between the sides of the locomotive and secured thereto by appropriate tongue and slot connections 126. The eyelet 122 also functions to receive the lower end of a coupling pin 128 which passes through a forwardly projecting coupling plate 130 on the succeeding car 24.

The wiper or contact shoe 38 consists of a bent strip of sheet metal, the ends of which have riveted thereto upstanding guide pins 132. These pins are headed at 134 to anchor the shoe with respect to a strip of insulation 136 and this in turn is fixed to the truck plate 114 by depending sheet metal arms 138, these arms being locked in place by appropriate tongue and slot connections 140. The guide pins 132 are surrounded by small light compression springs 142 which bear constantly downwardly on the contact shoe and urge it yieldingly into engagement with the third rail 40. The pressure of the forward spring 142 also serves to insure a good electrical contact with the terminal 36 against which the spring bears.

The signal 32 is electrically operated and may be of varying type, but is preferably of the type here illustrated, which employs a vibratory diaphragm indicated by the dotted line 144. This diaphragm is vibrated by electrical means to produce a tone similar to that of an automobile horn or like signal. This type of signal is in marked contrast with the conventional whistle or bell, but is especially appropriate in connection with trains of the streamlined type here shown.

The signal is mounted on a forward extension 146 of the plate 124 of the locomotive, and is thus located within the locomotive body between the forward and rear trucks of the same.

It will be understood that where the train is electrically operated the extra rail may take the form of a fourth rail disposed either between or outside the conventional three rails. It will also be understood that the source of energy for the signal may be a transformer or other device different from the battery here illustrated.

It is believed that the construction and operation, as well as the many advantages of my improved signal system for toy railroad trains will be apparent from the foregoing detailed description. It will also be apparent that while I have shown and described my invention in a preferred form, many changes and modifications may be made in the structure disclosed, without departing from the spirit of the invention defined in the following claims.

I claim:

1. A signal system for toy trains, comprising a toy railroad track, a train operating thereon, said train having a spring driving motor, a noise making warning signal for warning outsiders of the approach of the train, said signal being mounted in said train, a stationary trackside remote control device manually operable to energize said signal, and means interconnecting said remote control device, said track, and the warning signal in said train during the operation of the train, whereby the signal may be operated whenever desired and regardless of the point of location of the train on the track.

2. A signal system for toy trains, comprising a toy railroad track, a train operating thereon, an electrically energized vibratory diaphragm horn mounted in said train, a stationary trackside remote control device manually operable to energize said signal, and means interconnecting said remote control device, said track, and the horn on said train during the operation of the train, whereby the signal may be operated whenever desired and regardless of the point of location of the train on the track.

3. A signal system for toy railroad trains, comprising a track including one or more grounded rails, an extra insulated rail extending entirely around the track, a train having a spring driving motor, an electrically operated signal mounted in the train, a contact or wiper shoe connected to said signal and insulatedly mounted on said train and positioned to engage the aforesaid extra rail, an external source of energy for said signal connected to a grounded rail and said extra rail, and a manually operable control switch stationarily located away from the trackside for opening or closing said circuit, whereby said signal may be remotely controlled as desired and regardless of the point of location of the train on the track.

4. A signal system for toy railroad trains, comprising a track including one or more grounded rails, an extra insulated rail extending entirely around the track, an electrically operated vibratory diaphragm horn mounted in the train, a

contact or wiper shoe connected to said signal and insulatedly mounted on said train and positioned to engage the aforesaid extra rail, an external source of energy for said signal connected to a grounded rail and said extra rail, and a manually operable control switch stationarily located away from the trackside for opening or closing said circuit, whereby said signal may be remotely controlled as desired and regardless of the point of location of the train on the track.

5. A signal system for toy railroad trains of the mechanical or spring wound type, said system comprising a third rail track system the third rail of which is insulated from the others, a spring wound train operating on said track, an electrically operated signal mounted on said train, an insulatedly mounted contact or wiper shoe connected to said signal and carried by said train and engaging the aforesaid third rail, a trackside battery box carrying cells and a manually operable push-button, and wiring connecting said battery box and switch to the insulated and grounded rails of the track, whereby the signal may be operated whenever desired during the running of the train on the track and regardless of the point of location of the train on the track.

6. A signal system for toy railroad trains of the mechanical or spring wound type, said system comprising a third rail track system the center rail of which is insulated from the others, said track system being of the standard type ordinarily used for electrically operated toy trains, a spring wound train operating on said track, an electrically operated signal mounted on said train, an insulatedly mounted contact or wiper shoe carried by said train and engaging the aforesaid third rail, a trackside energy source, a manually operable push-button, and wiring connecting said source and switch to the insulated and grounded rails of the track, whereby the signal may be operated whenever desired during the running of the train on the track.

7. A signal system for toy railroad trains of the mechanical or spring wound type, said system comprising a third rail track system the center rail of which is insulated from the others, said track system being of the standard type ordinarily used for electrically operated toy trains, a spring wound train operating on said track, an electrically operated vibratory diaphragm horn mounted on said train, an insulatedly mounted contact or wiper shoe carried by said train and engaging the aforesaid third rail, a trackside battery box carrying a plurality of flashlight cells and a manually operable push-button, and wiring connecting said battery box and switch to the insulated and grounded rails of the track, whereby the signal may be operated whenever desired during the running of the train on the track.

8. A battery energized control box comprising a sheet metal housing having a base, side walls and a top, said side walls and top being detachably applicable to the base, an insulated connection terminal and a grounded connection terminal on the base, an insulation plate within said housing near the top thereof, spring contacts insulatedly mounted on the base and on the insulation plate, a grounded push-button on the cover, battery cells in said casing, and connections connecting said cells in series and terminating at a contact beneath the aforesaid push-button.

9. A signal system for toy railroad trains, comprising a track including one or more grounded rails, an extra insulated rail extending entirely around the track and used solely for signalling purposes, a train operated on said track, and an electrically operated signal mounted in the train, a contact or wiper shoe connected to said signal and insulatedly mounted on said train and positioned to engage the aforesaid signal-controlling rail, an external source of energy for said signal connected to the grounded rail and said extra signal-controlling rail, and a manually operable control switch stationarily located away from the trackside for opening or closing the circuit to said extra signal-controlling rail, whereby the signal on the train may be remotely controlled as desired and regardless of the point of location of the train on the track.

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