July 1, 1941. W. R. SMITH 2,247,418

TOY RAILWAY WITH SOUND EFFECTS

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Fig. 1

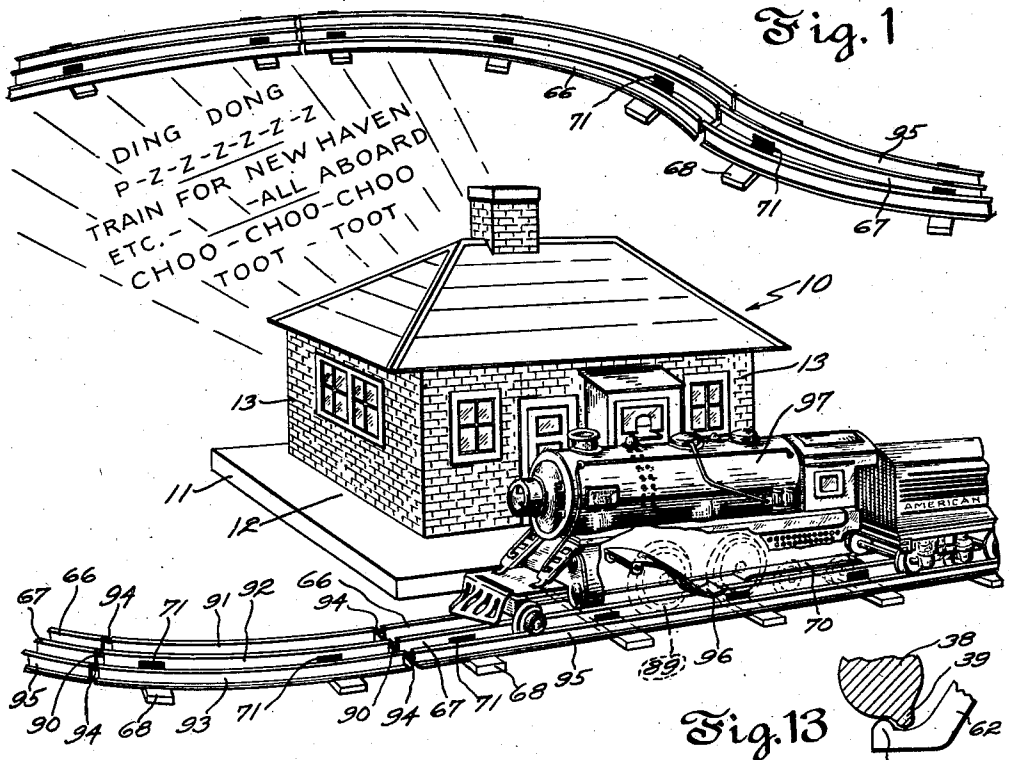
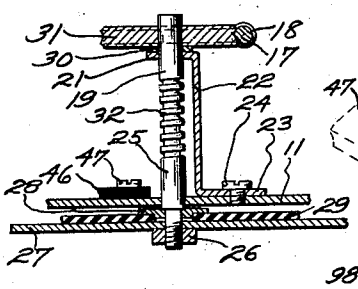


Fig. 13

Fig. 4



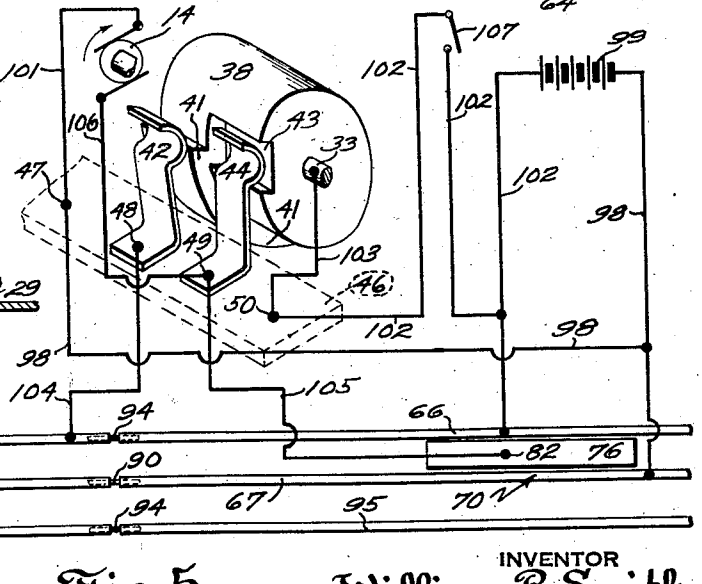


Fig. 5

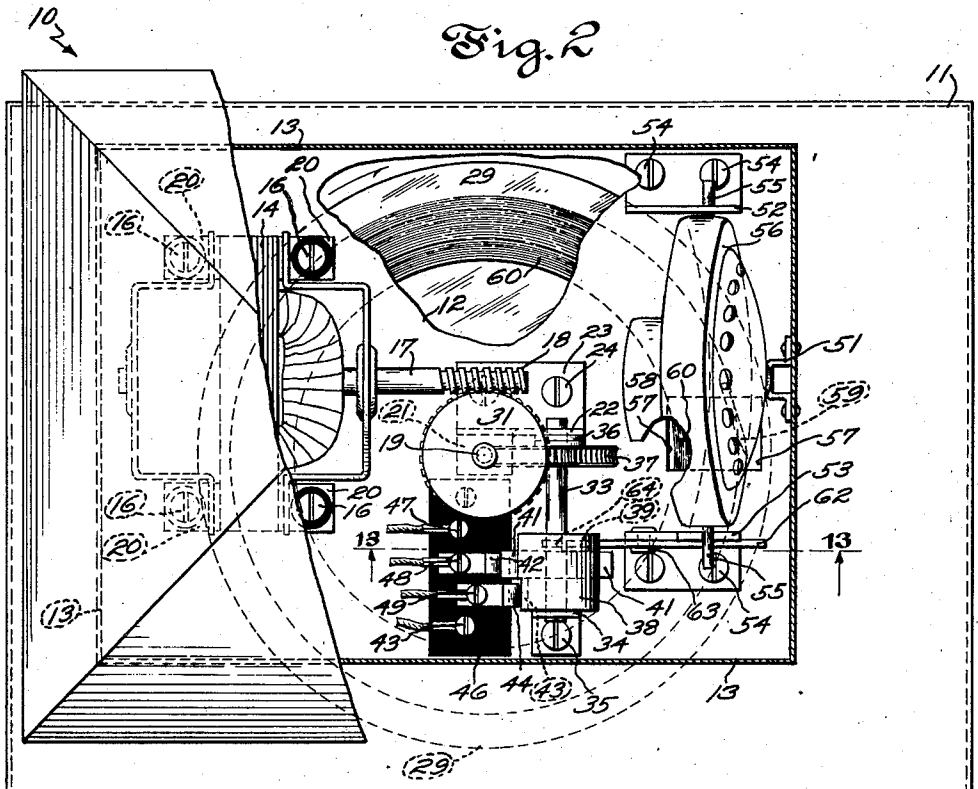
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TOY RAILWAY WITH SOUND EFFECTS

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Fig. 2



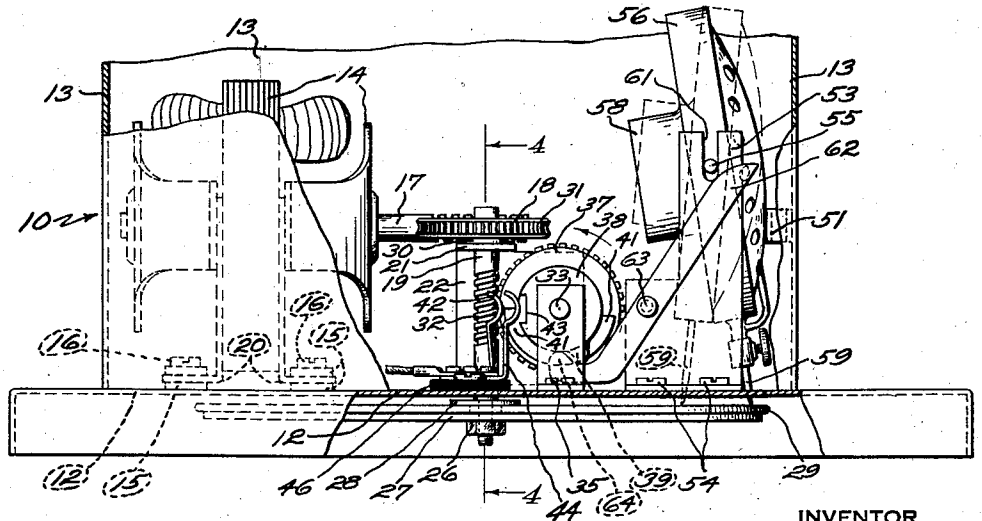


Fig. 3

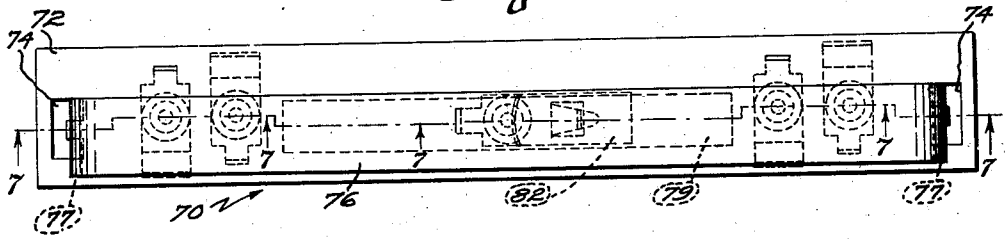
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TOY RAILWAY WITH SOUND EFFECTS

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Fig. 6



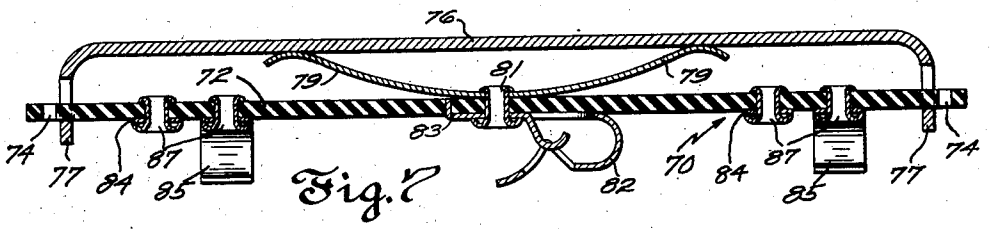


Fig. 7

Fig. 8

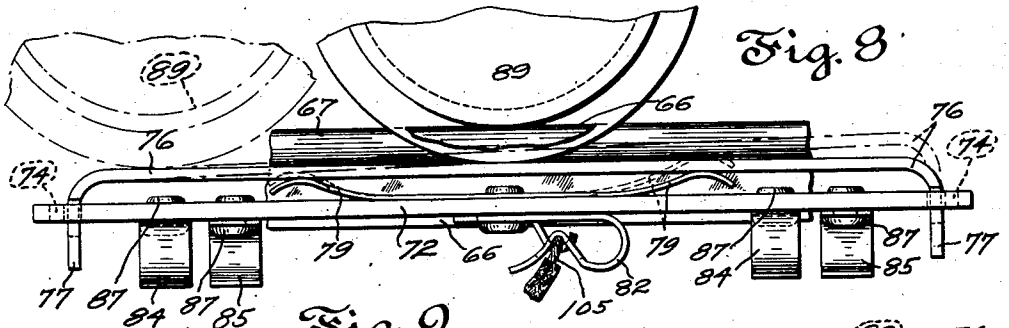


Fig. 9

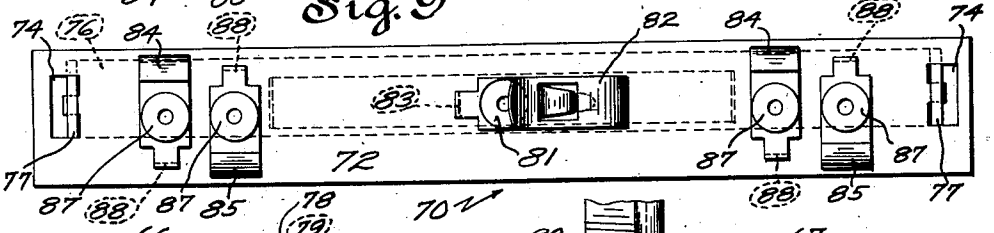
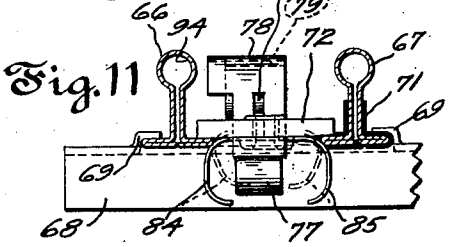


Fig. 11



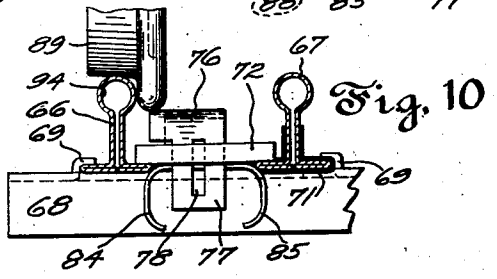


Fig. 10

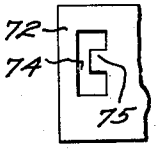


Fig. 12

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UNITED STATES PATENT OFFICE

2,247,418

TOY RAILWAY WITH SOUND EFFECTS

William R. Smith, Philadelphia, Pa.

Application April 21, 1939, Serial No. 269,185

11 Claims. (Cl. 246—31)

This invention relates to sound effects produced in connection with animated toys such as electric toy trains and particularly concerns methods and apparatus for producing in conjunction with a toy train and its toy railroad station or depot stopping and starting performance of the train at the depot correlated with sound effects issuing from the depot realistically imitating the announcements of the station agent with regard to the way-stations of the train, the noises associated with the stopping and starting of a steam locomotive, advertising notices, or other desired sounds designed to enhance the realism of the action of the toy particularly in the minds of boys.

One object of the invention is to produce the indicated sound effects as a function of the performance of the train without any requirement for manually initiating or terminating them.

Another object is to provide for automatic repetition of the same sound effects at each arrival of any given toy train at any given toy station or depot.

A further object is to conceal within the conventional structure of the toy depot all apparatus necessary to produce the sound effects.

A further object is to equip a toy railway track with electrical control means operable by the wheels of the toy train in a manner to initiate the sound effects referred to.

A further object is to provide a system of electromechanical agents adapted to carry through a cycle of sequential electrical controlling effects and then automatically terminate its own action.

A further object is so to associate the supply of current to the electrical railway track with the electromechanical cycle devices that the latter determine not only when and how long the toy train shall remain stopped at the station but also effect the synchronizing of the sound effect with the automatic stopping and starting of the train.

Certain related or contributary objects of the structures herein disclosed are referred to more fully in copending divisional applications referred to hereinafter.

The herein recited objects of the invention will become clear from the following description of the details of a preferred embodiment thereof in which description reference is had to the accompanying drawings, wherein:

Fig. 1 is a perspective view of a loop portion of a toy railway track system located in the neighborhood of a toy railway station or depot, a portion of the track loop being broken away and the locomotive of a toy train shown as arriving on the track in front of the station, a portion of the locomotive being broken away to expose contact parts electrically associated with the track.

Fig. 2 is a plan view of the toy railway station of Fig. 1 with its roof broken away to expose sound effect apparatus contained therewithin, the floor partition being also broken away to expose portions of a phonograph record therebelow.

Fig. 3 is a front elevation of said apparatus and phonograph record exposed by breaking away portions of the surrounding side walls of the depot building and platform.

Fig. 4 is a fragmentary view taken in section on the plane 4—4 in Fig. 3 looking in the direction of the arrows.

Fig. 5 is a diagrammatic view of the electromechanical cycle controller and its circuit connections to a source of electrical current and to the rails of the toy track.

Fig. 6 is a plan view of a track-carried electric contact shoe unit including parts by which the same is removably mountable at selective positions along the rails of the track.

Fig. 7 is a view taken in cross section on the planes 7—7 in Fig. 5.

Fig. 8 is a side elevation of the contact shoe unit of Fig. 5 showing fragments of the rails between which it is mounted and also a fragment of one of the locomotive wheels which rides on one rail and engages the contact shoe of said unit.

Fig. 9 is a view looking upwardly at the bottom of the contact shoe unit.

Fig. 10 is a view taken in section crosswise the track rails looking from the right at the end of the wheel-depressed contact shoe in Fig. 8.

Fig. 11 is a view similar to Fig. 10 showing the contact shoe elevated as in Fig. 7 when relieved of the weight of the train wheel.

Fig. 12 is a fragmentary view of the apertured end portion of the base plate of the contact shoe unit with the end of the contact shoe removed therefrom to show the shape of the aperture.

Fig. 13 is a fragmentary view taken in section on the plane 13—13 in Fig. 2.

The sound producing apparatus of the present improvements is located partly within the toy station or depot building 10 and partly within its hollow platform 11 which toy building is representative of any housing of suitable shape, size and appearance to be logically associated with a toy railway thereby to afford means for camou-

flaging or concealing the presence of such apparatus. Upon the floor partition 12 of the combined station and platform structure and within the walls 13 of the toy station building there is mounted any suitable electric motor 14. To prevent the motor hum or vibration from being magnified by the sheet metal of the station structure, pads 15 of soft rubber or like vibration dampening material may be squeezed between the motor feet 20 and the floor partition 12 by mounting screws 16. The motor shaft 17 has worm threads 18 cut upon it.

A vertical shaft 19 has its top bearing in the flange 21 of an upstanding bracket 22 whose oppositely turned bottom flange is secured to the floor 12 by screws 24. Shaft 19 is given additional bearing where it passes through the floor partition 12 and it projects therebelow to receive the nut 26 on the threaded terminal of a lower end portion of the shaft having a reduced diameter to produce the shoulder 25. A shouldered collar 28 is carried on the reduced portion of shaft 19 and seats against the shoulder 25, the smaller diameter of which collar fits the central aperture in a disc phonograph record 29 which is centralized thereby and clamped against the top flange of the collar by a plate-like turntable 27 forced upwardly by the nut 26. Shaft 19 carries fixed thereon the worm wheel 31 which is spaced slightly above the bracket flange 21 by a thrust washer 30 and which is in mesh with and driven by the worm threads 18 of the motor shaft 17. Between its top and bottom bearings shaft 19 has the worm threads 32 cut thereon.

The upstanding wall of bracket 22 affords bearing for one end of a horizontal cam shaft 33 whose opposite end is journaled in an upstanding bracket 34 secured to the floor partition 12 by the screw 35. A worm wheel 37 is fixed to shaft 33 and meshes with the threads 32 on the shaft 19. Worm wheel 37 is separated from bracket 22 by a thrust washer 36. Fixed to shaft 33 is the cam cylinder 38 having in side-by-side relation a mechanical actuating hump 39, an outstanding segmental flange 41 cooperative with a spring leaf type of electrical contact 42, and an indented recess 43 cooperative with a similar spring leaf type of electric contact 44.

Both of contacts 42 and 44 are mounted on a block 46 of electrical insulative material secured to the floor partition 12 and adapted to serve as a terminal binding post base for the convenient connection and interconnection of certain conductors more fully identified in Fig. 5. Four binding posts provided for this purpose are numbered respectively 47, 48, 49 and 50. Binding posts 48 and 49 are in electrical contact with, and if desired may serve to secure, leaf contacts 42 and 44, respectively, to the insulative block 46. Except as connected by lead wires or to "ground" it will be understood that binding posts 47, 48, 49 and 50, are electrically insulated from one another and from all other metallic parts of the apparatus.

Situated at the right of the foregoing described apparatus in Figs. 2 and 3 are two widely spaced upstanding brackets 52 and 53, each secured to the floor partition 12 by screws 54. Spanning the space between brackets 52 and 53 and journaled therein by means of its trunnions 55 is a sound reproducer 56 which may be of generally cylindrical or disc-like shape and preferably provided with a weight which is offset on the left side of the axis of its trunnion 55 in the form of the projecting body 58. Reproducer 56 may constitute any of the well known forms of devices for producing by means of a contained diaphragm audible vibrations responsive to vibrations imparted to its downwardly extending needle 59 by the sound track 60 on the top surface of record 29. Needle 59 reaches the record by extending down through an aperture 57 in floor partition 12. The weight of the reproducer 56 is allowed to press the needle point against the record because of the positioning of its bearings in the brackets 52 and 53 which bearings are arranged at a height normally permitting the needle to track upon the record.

The bearing for the reproducer trunnion in the front bracket 53 may comprise a vertically elongated slot 61 opening through the top edge of the bracket, while the bearing for the other trunnion in the rear bracket 52, although it may be a closed hole, will preferably permit enough play of that trunnion to allow the front trunnion to rise and fall in the slot 61 a sufficient distance to on occasion lift the needle 59 from the record and later restore it into playing contact therewith. For so lifting the front trunnion, a bell-crank lever 62 is pivoted to bracket 53 at 63 so that its lower or follower end 64 may swing into and out of the path of the cam hump 39. When forced by this hump to swing counterclockwise about pivot 63, the upper end of lever 62 will cam under the trunnion 55 and lift it sufficiently to remove the needle 59 from engagement with the record. If desired, any of the now common forms of electrical pickup heads may be substituted for the mechanical sound reproducer 56.

For enabling the arrival of the train at the station to set in action the electrical controlling and sound reproducing apparatus above described, there is applied on the track structure between the outer or traction rail 66 and the power or third rail 67, an electric contact shoe unit indicated as a whole by 70 in Fig. 1 and whose details are best shown in Figs. 6 to 11 inclusive. The rails, as usual, are elevated above the floor or table surface on which the toy railway track is laid out, by the sleepers 68. Each rail is secured to each sleeper by two tongues 69 struck up out of the sheet metal of the sleeper in a manner to overlap the foot flange of the rail and be squeezed downwardly thereagainst. The power or third rail 67 while mechanically held in a similar manner is separated, of course, from metallic contact with the sleepers 68 by facings 71 of electrical insulative material such as thin sheet fibre.

All parts of the contact shoe unit are mounted on an elongated base plate 72 which may comprise a strip of fibre or other stiff insulative material. The base plate 72 has an aperture 74 near each end shaped to produce the aperture contained tongue 75 as shown in Fig. 12. The elongated metallic contact shoe 76 has turned-down ends 77 each containing a vertically elongated slot 78 occupied and guided by the tongue 75. Normally shoe 76 is kept elevated in the position shown in Figs. 7 and 11 by the uplifted ends of the light leaf spring 79 so that the bottom end of its slots 78 are engaged by tongues 75, respectively. Spring 79 is preferably made of good electrical conductive material, such as spring brass or phosphorus bronze, and its central portion is secured to the upper surface of the base plate 72 by suitable fastening means such as a hollow rivet or the eyelet 81. Eyelet 81 also retains against the bottom surface of base plate 72 a binding post clip 82 of resilient conductive mate-

rial adapted to receive and clamp the end of an electrical conductor as shown in Fig. 8. Clip 82 is prevented from swiveling about the eyelet 81 by means of its tongue 83 which penetrates the base plate 72 and if needed a similar tongue may extend from the leaf spring 79 into some guiding aperture in the base plate 72 to prevent spring 79 from becoming disaligned with contact shoe 76. Ordinarily, however, the eyelet 81 requires no aid to keep the parts referred to in proper alignment.

Between each end of the leaf spring 79 and the corresponding end of the contact shoe 76, base plate 72 carries a pair of oppositely bowed downwardly extending spring mounting arms 84 and 85, each clamped firmly against the bottom surface of base plate 72 by eyelets 87 and held from swiveling about the eyelet by a tongue 88 embedded in the insulative material of the base plate. Thus all metallic parts of the contact shoe unit, except only the spring detent arms 84 and 85, are held spaced from electrical contact with rails 66, 67 when the base plate 72 is placed between said rails and pressed downwardly against the foot flanges thereof. Unit 70 preferably has a length less than the distance between sleepers 68 and hence need not interfere with the latter. The mounting arms 84, 85 are forced to spring inwardly to their broken line positions in Fig. 11 when passing the space between the rail flanges, and thereafter spring apart to their full line positions shown in Fig. 10 so that the base plate 72 brings up against the rail flanges with a sort of snap action and is yieldingly held there with considerable firmness by the four spring arms 84 and 85. It will be observed in Fig. 10 that the long edge of the contact shoe 76 is thus positioned so closely to the outer rail 66 that the top surface of the shoe, being normally high enough, is engaged by the flange on the metallic wheels 89 of the locomotive and thereby pressed downwardly by the weight of the locomotive to its position shown in Figs. 7 and 10 as the wheel rolls along that stretch of the track rail opposite the shoe. Spring 79, of course, is weak enough to yield to the weight of the locomotive and cars of the train without lifting them from any rail. Thus the metal of the wheel 89 electrically bridges contact shoe 76 and the outer rail 66 and completes a circuit between the latter and the binding post 82. The broken line position of contact shoe 76 in Fig. 8 shows that the shoe is capable of tilting freely as well as free to move up and down.

The complete track as represented in Fig. 1 includes a second traction rail 95. In Fig. 1 a special section of the track somewhat beyond the station in the direction of travel of the train is indicated as composed of a traction rail section 91, a central rail section 92, and another traction rail section 93. Each end of said rails 91 and 93 is electrically insulated from the corresponding rails 66 and 95, respectively, of the continuous track with which it aligns by means of plug connectors 94 composed of insulating material which snugly but removably fit the hollow interior 94 of the top or tubular portion of the rails. Plugs 90 of like shape but made of conductive material connect each end of rail 92 with the regular power or third rail 67 so that rail 92 is constantly alive. The power or third rail 67 is swept by a collector tongue 96 pivoted and insulated on locomotive 97 and of electrically conductive material for picking up current from this third rail. From collector tongue 96 the current is led through the electric motor, which is carried by and drives the locomotive according to well known practice, and the locomotive motor circuit is completed through the locomotive wheel 89 to the outer rail 66. Because well known in the art, it is not deemed necessary to illustrate herein the electric motor which drives the locomotive nor its electrical connections to the collector tongue 96 and to the locomotive wheels 89. The same may be of many different well known forms within the principles of these improvements.

The operation will be described with particular reference to the electromechanical diagram of Fig. 5 in which certain structural parts are designated by the same reference characters as in other figures of the drawings. The condition of the apparatus within the station is that shown in Figs. 3 and 5 in which the sound reproducer needle 59 is resting on the sound track of record 29, electrical contact is made between 42 and 41 and electrical contact is broken between 44 and 38 because of recess 43. It is assumed that the train, drawn by locomotive 97, approaches station 10 from right to left in Fig. 1, its opposite locomotive wheels 89 riding respectively on rails 66 and 95, and its current collector tongue 96 riding on the power or third rail 67. The contact shoe unit 70 is installed as shown in Figs. 1 and 9 at a suitable point along the stretch of track passed over by the locomotive in arriving at the station. The heavy single lines in Fig. 5 indicate electrical conductors as follows: Conductors 98 connect one side of a battery 99, or other source of electrical power such as a toy transformer, both to the power or third rail 67 and to the binding post 47. Another conductor 101 connects binding post 47 to one terminal of the motor 14 in the station 10. Another conductor 102 connects the opposite side of battery 99, or equivalent transformer, to the rail 66 and has a branch also connecting to the binding post 50. Within the station another conductor 103 connects binding post 50 with the rotating metallic cam cylinder 38 or any part in a "ground" circuit therewith, the floor portion 12, bearing bracket 34 and shaft 33 constituting such "ground circuit" if desired. Still another conductor 104 connects binding post 48 and thereby the leaf contact 42 with the rail 91 in the insulated section of track. Still another conductor 105 connects binding post 49 and hence the leaf contact 44 with the binding post clip 82 of the contact shoe unit 70, which places the last said conductor in permanent electrical connection with the contact shoe 76 through the eyelet 81 and lift spring 79. Within the station still another conductor 106 connects the binding post 49 with the other terminal of the motor 14.

Through the circuits formed by these conductors connected as described, the first effect of the engagement of contact shoe 76 by the flange of the arriving locomotive wheel 89 is to complete the circuit 99—102—66—76—105—106—14—101—98—99. This energizes the motor 14 which instantly, through worm 18, worm wheel 31, shaft 19, worm 32, worm wheel 37, and shaft 33, starts to rotate cam cylinder 38 counterclockwise in Figs. 3 and 4. At the same time the turning of said shaft 19 rotates the turntable 27 at usual phonograph turntable speed together with the disc phonograph record 29 carried thereon. Almost the instant that cam cylinder 38 begins to rotate clockwise two electrical effects take place. Recess 43 is removed from register with

the free end of leaf contact 44 so that the latter rides against and in electrical contact with the periphery of cam cylinder 38, the latter being of good electrical conductive material. This sets up and maintains for the duration of a predetermined automatic cycle of operations (represented by one complete revolution of cam cylinder 38) the following additional electric circuit 99—102—103—38—44—106—14—101—98—99. Hence when the locomotive wheels pass off from contact shoe 76, current continues to be supplied to motor 14 throughout said automatic cycle of operation.

Another of the said two effects occasioned by the beginning of rotation of cam cylinder 38 is the removal of the end of cam segment 41 from engagement with leaf contact 42 so that rail 91, in the insulated section of the track, is electrically dead-ended at the leaf contact 42, the latter now being incapable of engaging with the cylindrical periphery of cam 38. Thus when the locomotive reaches traction rails 91 and 92 in the insulated section of track it finds itself deprived of power and coasts to a standstill before its wheels have passed beyond the said insulated section of track. As the train slackens speed and coasts to a standstill in front of the station, the initial silent portion of the record sound track has passed under the reproducer needle and the recorded portion of the record begins to produce noises from the vicinity of the locomotive realistically imitating the familiar warning clang of the engine bell and hissing of air brakes as the train comes to rest. The train remains standing at the station while the phonograph reproducer continues to project further realistic sounds from the toy station such as shouted announcements by the imaginary station master as to the identity, destination and way-stations of the train with or without such advertising matter as may be desired where my invention is employed for sales effect as on a store counter. By this time cam cylinder 38 has completed about a half revolution, and cam segment 41 will have resumed engagement with the leaf contact 42 thus furnishing track current to rails 91 and 93 in the circuit 99—102—103—38—41—42—104—91 through the motor of the locomotive to 92—67—98—99 whereupon the train will resume its motion and begin to draw out of the station. At this point the phonograph needle is tracking on a portion of the record which has been recorded to produce the familiar sound of puffing of steam associated with the starting of a locomotive accompanied by sounds of the engine whistle as the train pulls away from the vicinity of the station.

The cam hump 39 now swings lever 62 counterclockwise which lifts the front trunnion 55 in its bearing slot 61 and smartly raises needle 59 which has tracked radially inward of the record (or toward the left) from its full line position to its broken line position in Fig. 3. Thereupon the reproducer head 56 is swung smartly counterclockwise by the force of its offset weight 58 and to an extent limited by the stop 51. A further small degree of rotation of the cam cylinder 38 counterclockwise causes the hump 39 to pass the follower end 64 of lever 62 so that the latter is permitted to return to its position shown in Fig. 3 whereupon the needle 59 will be lowered into playing engagement with the beginning of the silent portion of sound track 60 on the record. But by this time the record has ceased rotating because cam recess 43 has returned to register with leaf contact 44 (and before circuit becomes broken between 41 and 42). There now being no train wheels on the contact shoe 76, the motor 14 automatically stops, leaving the entire electromechanical system of Fig. 5 automatically restored to and dormant in its original condition ready to repeat its described cycle of operation including the stopping and starting of the train and the starting and stopping of the self repeating phonographic apparatus upon the approach of the same or another train at the novel sound emitting station of this invention.

In track systems employing but two instead of three rails and in which current to run the train is picked up from each of the two traction rails alone by wheel trucks having conductive and insulative wheels on respectively opposite sides of the train, the rails 93 and 95 need merely be omitted and the rails 67, 92 used as a traction rail. The base plate 72 of the contact shoe 70 may be widened if necessary to span a greater space between the flanges of a two-rail track preferably maintaining the edge of shoe 76 as closely as it is shown in Figs. 9 and 10 to the rail which will correspond to rail 66 in the electrical connections of Fig. 5.

A manually operable switch 107 may be employed at some remote control station, if desired, for selectively making or breaking connection between 82 and 14. When switch 107 is open obviously engagement of contact shoe 76 by the locomotive wheels will not start motor 14 whereupon the sound effects will be omitted and the train will pass the station without stopping.

There is contemplated within the scope of this invention the use of phonographic or other kinds of sound reproducing apparatus driven by spring powered motors instead of by an electric motor, in which case the function of the circuit controller 43—44—48 may be merely to start and stop the running of the spring motor at suitable times synchronized with the travel performance of the locomotive. There is also contemplated all possible use of the elements and features of this invention with a spring motor impelled locomotive. Other forms of time giving electrical control apparatus capable of sychronizing sound effect with toy train action may be substituted for the electro-mechanical apparatus herein specifically disclosed. Because of the above and many other departures that are possible from the particular parts and arrangements herein employed to illustrate the invention the following claims will be understood as intended to cover all substitutes and equivalents which fairly come within their terms.

The structure shown in Figs. 6 to 12, inclusive, is claimed herein only in combination with, or as incorporated in a system involving some one or more of the structures shown in other figures of the drawings. The structure of Figs. 6 to 12, inclusive, is specifically claimed in the application of M. H. Frisbie, Serial No. 268,300, filed April 17, 1939.

The structure of Figs. 2, 3, 4, and 13, is specifically claimed in my co-pending application Serial No. 294,109, filed September 9, 1939.

I claim:

1. In a toy railway, pseudo sound and action synchronizing accessories for enhancing the realism with which the action of an electrically driven toy locomotive fashioned as a model of a real steam locomotive simulates the performance of the latter, including in combination with said toy locomotive, a track, camouflaged automotive

cycle performing apparatus stationed in proximity to a stretch of said track constructed and equipped to produce a program of sequential differing sounds capable of simulating such sounds as are produced by a real steam locomotive in stopping or departing at a station, means stationed and arranged within said stretch of track to be operatively responsive to the arrival of said toy locomotive thereat and further arranged and connected thereupon to initiate a cycle of sound producing operation of said apparatus, together with means sequentially to cause said toy locomotive to slow down and subsequently to speed up on said stretch of track during the production of said program of sounds, whereby said sounds will deceptively seem to be produced by the performance of said toy locomotive because of the proximity of said toy locomotive to said camouflaged sound producing apparatus.

2. In a toy railway, in combination, a stretch of toy track, a stationary track-side depot, a power impelled toy locomotive fashioned as a model of a real steam locomotive and adapted to travel toward said depot on said track, means to deprive said toy locomotive of impelling power as it approaches said depot thereby to cause the toy locomotive to slow down and come to a stop in proximity to said depot, means operatively associated with said power depriving means to produce automatically while said toy locomotive is arriving at said depot a program of sequential differing sounds simulating differing sounds produced by a real steam locomotive in coming to a stop at a depot, said sound producing means being substantially concealed within and thereby camouflaged by said toy depot whereby said sounds deceptively seem to be made by said toy locomotive.

3. In a toy railway, in combination, a stretch of toy track, a stationary track-side depot, a power impelled toy locomotive fashioned as a model of a real steam locomotive and adapted to come to a stop on said track proximate said depot, means to impart impelling power to said toy locomotive to cause the latter to restart, pick up speed and pull away from said depot, means operatively associated with said power imparting means to produce automatically while said toy locomotive is pulling away from said depot a program of sequential differing sounds simulating differing sounds produced by a real steam locomotive in picking up speed and pulling away from a depot, said sound producing means being substantially concealed within and thereby camouflaged by said toy depot whereby said sounds deceptively seem to be made by said toy locomotive.

4. Toy electric railroad apparatus, embodying in combination, a current supplied toy track, a toy locomotive on said track adapted to be impelled by said current, a sound reproducing device stationed near said track equipped and operative to produce a predetermined series of sequential differing sounds of a kind which accompany the starting or stopping of a real locomotive, a prime mover stationed near said track and device and connected to operate the latter to cause reproduction of said series of sounds, means enabling the travel of said locomotive in the neighborhood of said device to start the running of said prime mover thereby to intiate said reproduction of sounds while the locomotive is relatively near said device, and circuit controlling means stationed near said prime mover mechanically connected to be operated by the latter and electrically connected in circuit with said track in a manner sequentially to deenergize and reenergize said locomotive thereby to cause the locomotive first to stop and later to restart while it is relatively near said device and while said device is producing said series of sounds, whereby said sounds may deceptively seem to come from said locomotive.

5. Toy electric railroad apparatus as defined in claim 4 together with a hollow structure having an exterior appearance simulating some conventional track-side structure and arranged to enclose and substantially conceal and thereby camouflage said sound reproducing device.

6. Toy railroad apparatus, embodying in combination, an electrified toy track, a track-side toy depot, a toy locomotive powered to ride along said track in the neighborhood of said depot by means of track conducted current, a sound reproducing device in said depot equipped and operative to produce a limited program of sequential sounds simulating differing sounds commonly heard at a real railway depot upon the arrival and departure of a train, an electrically driven prime mover in said depot connected to actuate said device, means controlled by the arrival of said locomotive at a predetermined point in the neighborhood of said depot and operative to start the running of said prime mover, and a circuit controller in said depot operable by said prime mover and electrically connected to cut off the supply of current by which said locomotive is powered and to thereafter govern the supply of electric current both to said prime mover and to said track.

7. Toy railroad apparatus, embodying in combination, an electrified toy track, a toy locomotive powered to ride along said track by means of track conducted current, a sound reproducing device besides said track equipped and operative to produce a limited program of sequential sounds simulating differing sounds which accompany the starting and/or stopping of a real steam locomotive, an electrically driven prime mover connected to actuate said device, means enabling the arrival of said locomotive at a predetermined point to start the running of said prime mover, and a circuit controller operable by said prime mover and electrically connected to govern the supply of electric current both to said prime mover and to said track.

8. A toy electric railway system including in combination, toy track structure including electrically conductive rails, a toy locomotive having a conductive traction wheel electrically in circuit with one of said rails, an electric circuit terminal device stationed in mechanical association with said track structure in a manner to be conductively contacted by said traction wheel during the passing of said locomotive thereby to complete an electric circuit, apparatus at the side of said track adapted to produce noises characteristic of railway operation while said locomotive is passing said apparatus, means to conceal the presence of said apparatus at the track side whereby said noises will appear to be produced by said locomotive when the latter is near said apparatus, and an electrically controlled prime mover stationed near said track mechanically connected to motivate said apparatus and electrically connected in said circuit thereby to be energized by the passing of said locomotive for operating said apparatus, together with circuit controlling means stationed near said track constructed and impelled by said prime mover in a

manner sequentially to cut off and later restore electric current to said track rails.

9. In a toy electric railway system for toy trains, the combination with two electric track rails one of which has a normally live insulated section, of a source of electric current, a phonograph including a record carrier, an electric motor connected to rotate said carrier for producing sound from said record, an electrical controller impelled by said motor, an electrical contact device associated with one of said track rails in a manner to be engaged by toy trains in passing, a first electric circuit containing in series relation said current source said track rail said contact device and said motor, a second electric circuit containing in series relation said current source said motor and said controller, and a third electric circuit containing in series relation said current source said controller said insulated section of one of said track rails and the other of said track rails, in which system said first and second circuits are normally open while said third circuit is normally closed, said contact device is constructed and arranged when engaged by a passing toy train to close said first circuit as a means of initiating a succession of changes in all of said circuits and said succession of changes includes next opening said third circuit and closing said second circuit next closing said third circuit and finally opening said second circuit.

10. In a toy electric railway system, the combination with rails of an electric track having an insulated section, of an electric locomotive riding on and propelled by current derived from said rails, a source of current supply connected to said rails, a phonograph including a reproducible record of sounds characteristic of the stopping and/or starting of a railway train, an electric motor connected to rotate said record for producing said sounds, a first electric circuit normally open including said motor and said current source, a second electric circuit normally open including said motor and current source, an electrical contact device spaced along said track away from said insulated section toward an approaching locomotive and associated with one of said track rails in a manner to respond to the passing of said locomotive in a manner momentarily to close one of said circuits to start said motor, an electrical circuit controller responsive to the running of said motor and thereby rendered operative to close the other of said circuits, whereby said motor continues to run while said locomotive is traveling after having passed said contact device, and a third circuit governed by said circuit controller and normally closed thereby including said insulated track section and said current source.

11. In a toy electric railway system, the combination defined in claim 10 in which the said electrical controller is constructed and arranged first to open and later to close said third circuit thereby temporarily to cut out current to said insulated track section for temporarily arresting the said locomotive thereon and later to reopen one of the other said circuits after a predetermined period of running of said motor thereby automatically to stop the production of sound by said phonograph record after said locomotive has resumed its travel.

WILLIAM R. SMITH.

CERTIFICATE OF CORRECTION.

Patent No. 2,247,418. July 1, 1941.

WILLIAM R. SMITH.

It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction as follows: Page 5, second column, line 40, claim 7, for the word "besides" read --beside--; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 5th day of August, A. D. 1941.

Henry Van Arsdale,
Acting Commissioner of Patents.

(Seal)