Nov. 16, 1954 W. R. SMITH ET AL 2,694,271

ANIMATED TRACKSIDE ACCESSORY FOR TOY RAILROADS

Filed March 29, 1950

2 Sheets-Sheet 1

Fig. 1

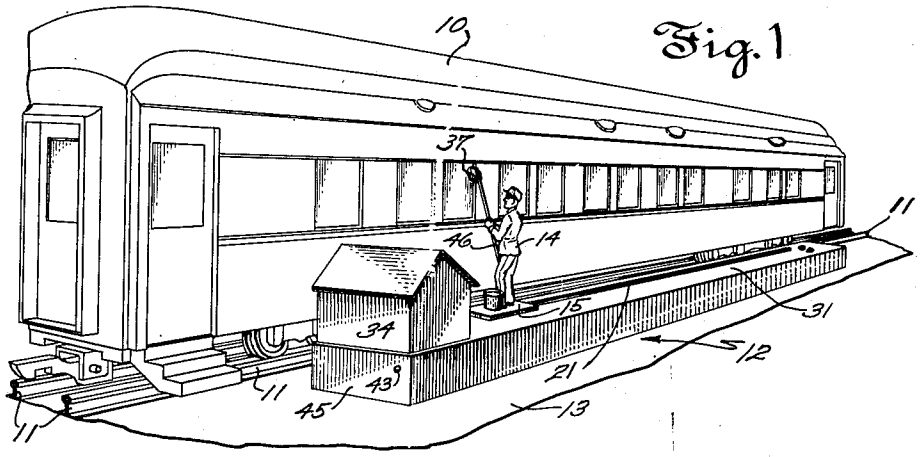


Fig. 2

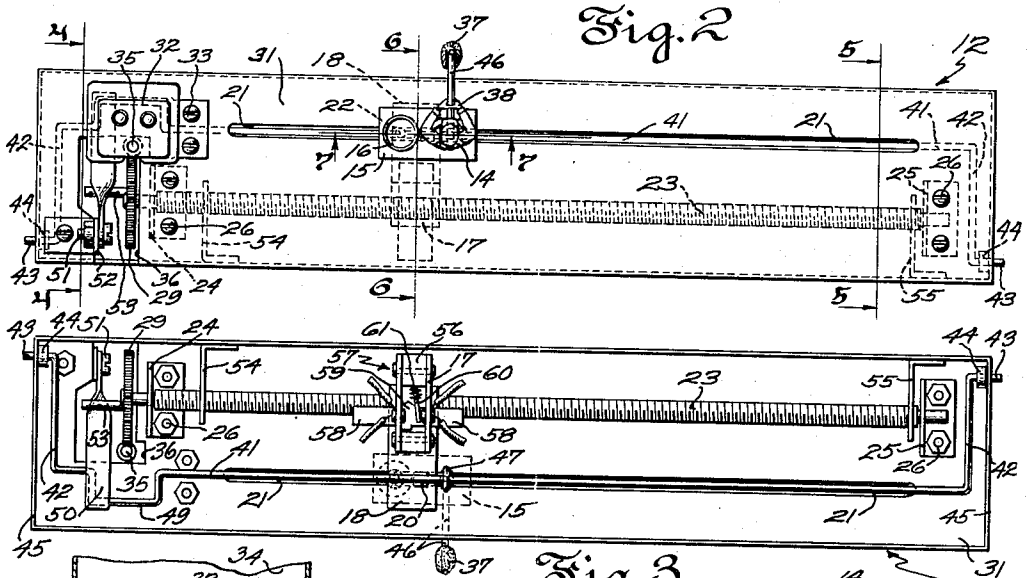


Fig. 3

Fig. 4

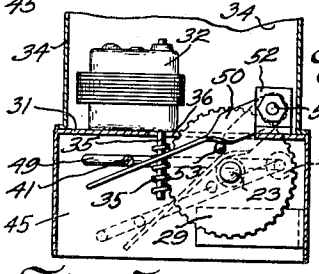


Fig. 5

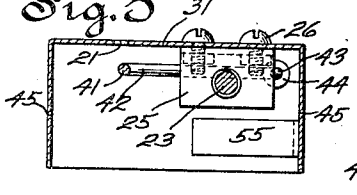


Fig. 6

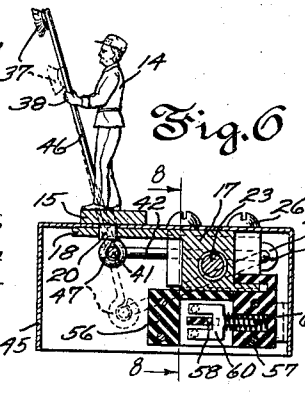
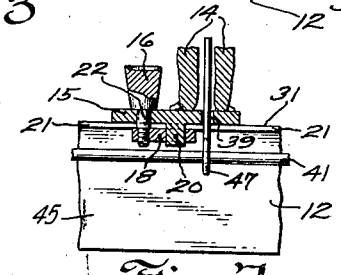


Fig. 7



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ANIMATED TRACKSIDE ACCESSORY FOR TOY RAILROADS

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Fig. 9

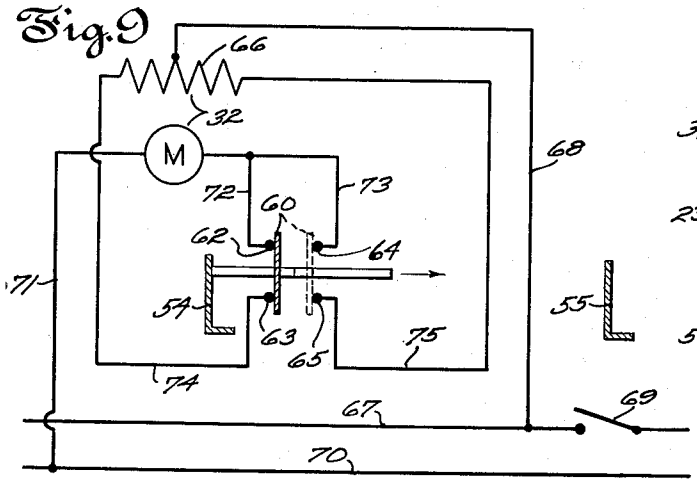


Fig. 8

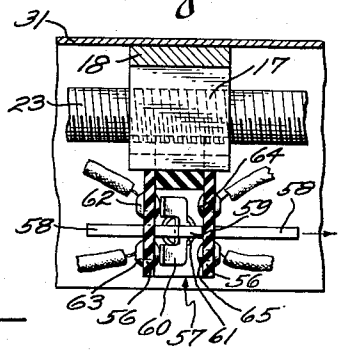


Fig. 10

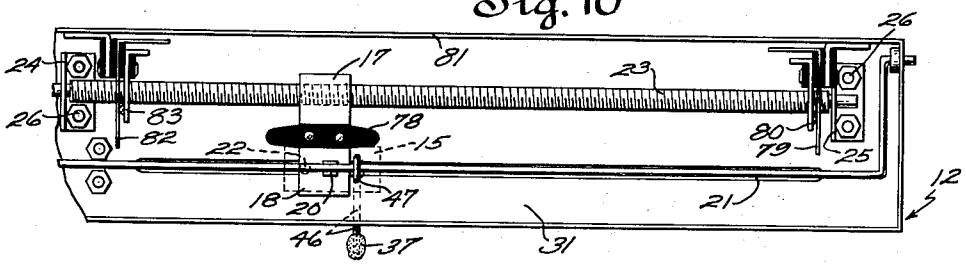
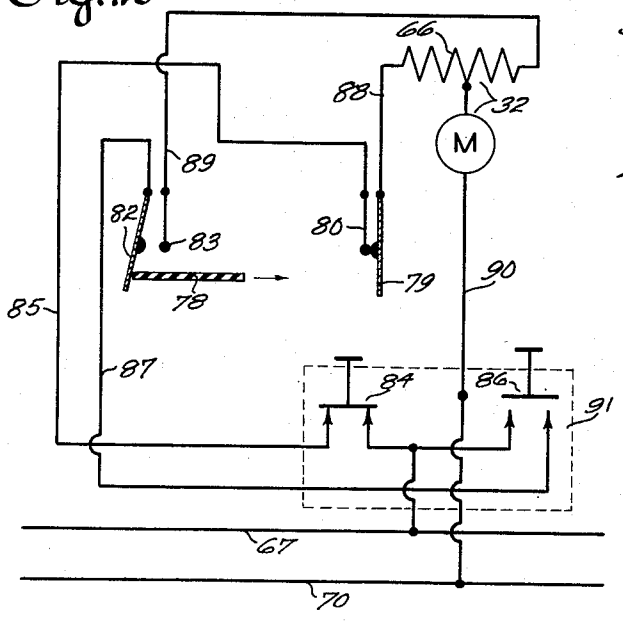


Fig. 12



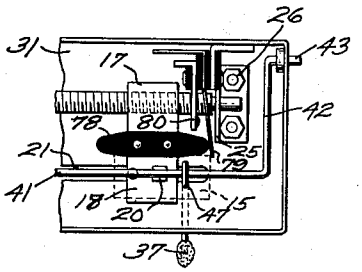


Fig. 11

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ANIMATED TRACKSIDE ACCESSORY FOR TOY RAILROADS

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Application March 29, 1950, Serial No. 152,554

4 Claims. (Cl. 46—216)

This invention relates to animated track side accessories for toy railroads designed to simulate realistically actual operations familiar in the use and servicing of toy trains. An object of the present improvements is to animate the figurette of a window washer so that he shall appear to go through the motions of washing the windows of a toy railway car.

A related object is to provide, in form to be merchandised as a self-operative, unitary toy railway trackside accessory, a motor equipped trackside platform along which the figurette will advance or make excursions while appearing to maneuver a window washing brush in realistic manner against the outside of the windows of a toy railway car standing on its tracks.

Another object is to produce animation in such a toy so quietly that mechanical noise shall not impair the illusion of an actual train window washer at work.

Another object is to produce the illusion of window washing in miniature form with the fewest and simplest possible number of movable parts of rugged nature able to withstand abuse as a plaything without breakage and capable of selling in the low range of price demanded of toys.

Another object is to effect automatic stopping of the progressive travel of the toy figure along the trackside platform when the length of the toy railway car has been traversed.

A related objected is to cause reversal of the direction of travel of the toy figure along the platform at one or both ends of its range of travel so that the figure will perform automatically one or more excursions alongside the toy car without further attention when once set in action.

A still further object is to conceal the power means by which the toy is animated so that realism of the action of the imitative workman is enhanced.

The foregoing and other objects of the invention will be understood in greater particular from the following description of a preferred embodiment of the improvements in which reference is had to the appended drawings wherein:

Fig. 1 is an overall view in perspective showing the trackside accessory properly placed in relation to the passenger car and tracks of a toy railway.

Fig. 2 is a plan view of the accessory unit alone showing the imitative tool box removed from the platform to expose the motor which animates the toy.

Fig. 3 is a bottom plan view showing the motion transmitting mechanism inside the hollow platform.

Fig. 4 is a view taken in section on the plane 4—4 in Fig. 2 looking in the direction of the arrows.

Fig. 5 is a view taken in section on the plane 5—5 in Fig. 2 looking in the direction of the arrows.

Fig. 6 is a view taken in section on the plane 6—6 in Fig. 2 looking in the direction of the arrows.

Fig. 7 is a fragmentary view taken on the plane 7—7 in Fig. 2 looking in the direction of the arrows.

Fig. 8 is an enlarged fragmentary view taken in section on the plane 8—8 in Fig. 6.

Fig. 9 is a diagram of electric circuit connections suitable for use with the structure of Fig. 3.

Fig. 10 is a view like Fig. 3 showing a modified form of circuit controlling mechanism acting automatically to stop running of the toy animating motor at predetermined limits in the course of travel of the window washing figure.

Fig. 11 shows one circuit controller of Fig. 10 when automatically acted upon to break the motor circuit.

Fig. 12 is a diagram of modified circuit connections suitable for use with the structure of Fig. 10.

In Fig. 1 the conventional toy passenger car **10** of a toy railway train (not shown) stands motionless on tracks **11** of a toy railroad resting on, say, a table top **13**. The trackside accessory unit embodying the present improvements includes a hollow elongated platform **12** which may be placed on such table top alongside the rolling stock of a toy train such as the passenger car **10**. The figurette **14** of a car servicing workman or window washer is integral with a slidable base plate **15** on which is fixed an imitative water pail **16**. Base **15** is slidable lengthwise along the top surface of the floor wall **31** of platform **12** and is motivated by a traveling nut **17** which has threaded engagement with and rides along a power operated screw shaft **23** in the hollow interior of platform **12**. Nut **17** includes a horizontal flange **18** closely underlying the floor wall **31** of the platform which flange is made fast to base **15** of the man figure by a connecting stud **22** rigid with pail **16** extending through and having a sliding fit in slot **21** of platform floor **31** and having threaded engagement with flange **18** so as to hold base plate **15** and said flange in fixed relation vertically spaced apart far enough to afford free but steadying engagement of the figure base plate **15** with the top surface of the platform. For added steadying connection between base plate **15** and nut flange **18** the former fixedly carries a depending lug **20** penetrating the latter.

Screw shaft **23** has ends of reduced diameter which have rotary bearing in brackets **24** and **25** respectively. These brackets are secured to the platform **12** by screws **26** and afford end thrust in both directions for the screw shaft **23**.

On one of its ends screw rod **23** fixedly carries a driven worm gear **29** which is constantly in mesh with the driving worm **30** cut on or carried by armature shaft **35** of a conventional reversable electric motor **32**. Motor **32** is preferably mounted atop the platform floor wall **31** as by screws **33** and is concealed by a hollow housing structure **34** imitative of a tool box such as commonly stands in handy locations on railway platforms for storing train servicing equipment. Motor shaft **35** extends downward into the hollow platform **12** through an opening **36**.

In addition to movements of the figurette lengthwise of the platform there takes place simultaneously up-and-down reciprocative movements of a window washing brush **37** whose elongated handle **46** has a slide bearing in the hands **38** of figurette **14**. The brush handle reciprocates loosely through an oversize hole **39** in base plate **15** of the figurette as best shown in Fig. 7, and its bottom end **47** is looped to engage swingably the elongated actuating span **41** of a bail crank **42** whose ends **43** are journaled in bearings **44** on the end walls **45** of platform **12**.

An offset jog **49** in bail span **41** is raisable and allowed to lower alternately by the oscillating movements of a stiff arm **50** which may be made of strip metal having a quarter-turn twist. Arm **50** is pivotally mounted for free swinging movement on a screw stud **51** carried by an angle bracket **52** fixed atop the platform floor wall **31** at the side of aperture **36** in the latter. Worm gear **29** carries a revolvable crank pin **53** in whose path of circular travel the freely swingable arm **50** falls.

The traveling nut **17** carries fixed thereon the insulative frame **56** of a motor reversing snap switch **57** whose operating handle **58** is guided by the switch frame **56** for lengthwise horizontal reciprocatory movement relative thereto. Handle **58** carries a contact actuating spur **59** which in passing the conductive contact plate **60** of the switch depresses the latter edgewise in a direction to compress the frame nested spring **61**. This spring causes contact plate **60** to flip with a snap motion between two circuit controlling positions when the tip of spur **59** passes it. In one of these positions contact **60** conductively bridges two circuit terminals **62, 63**. In the other of said positions it conductively bridges two other circuit terminals **64, 65**. The opposite ends of switch handle **58** project horizontally

at the sides of the switch frame and respectively encounter stationary limit stops **54** or **55** fixed on platform **12** just before the figurette **14** quite reaches the end of platform slot **21** in its opposite direction of travel alongside the railroad car.

Fig. 9 shows a scheme of circuit connections enabling the form of the toy shown in Figs. 1 to 8 to continue to function automatically when once put into action. Those elements represented in Fig. 9 which are disclosed in Figs. 1 to 8 are denoted respectively by like numerals. In addition there is represented the field winding **66** of the reversing motor **32** supplied at a mean point from one side **67** of the supply line through lead **68**. This supply line may be opened and closed at will to stop and start animation of the toy by throwing a manual remote control switch **68** which may be located anywhere the operator of the railway system desires. The other side **70** of the supply is connected through lead **71** to one brush of the motor. The other motor brush connects with both of circuit terminals **62** and **64** of switch **57** through leads **72** and **73**, respectively. One extremity of motor winding **66** connects to circuit terminal **63** of the switch by means of lead **74** while the motor winding opposite extremity connects to circuit terminal **65** of the switch by means of lead **75**. All of leads **72**, **73**, **74** and **75** will be flexible and preferably shall be harnessed in a unitary flexible cable (not shown) as they must be able to trail the bodily movement of switch **57** in unison with nut **17** lengthwise of the platform.

The form of the invention disclosed in Figs. 1 to 9, inclusive, operates as follows: When remote control switch **69** is manually closed to animate the toy, motor **32** will start running in one or the other direction depending on whether switch terminals **62** and **63** or switch terminals **64** and **65** are bridged by the quick action contact plate **60**. In Fig. 9 the switch handle **58** has been thrust toward the right relatively to the traveling switch frame **56** as the latter approached the stationary limit stop **54** in bodily traveling toward the left along the screw rod **23**. This has thrown switch contact **60** against circuit terminals **62** and **63** as shown in full lines in Fig. 9 so that current passes in proper direction through half the motor field winding **66** to run the motor in a rotary direction to feed nut **17** toward the right along screw rod **23**. When switch handle **58** encounters the stationary limit stop **55**, contact **60** is snapped to its broken line position **60'** in Fig. 9 and the direction of running of motor **32** then becomes automatically reversed because of current passing through lead **73** and the other half of motor winding **66**. This causes figurette **14** to reverse its direction of travel along the platform.

Whenever screw rod **23** is turning and the figurette **14** is traveling in either direction along the platform, there is constant reciprocation of the cleaning brush **37** up and down between its full line and broken line positions in Fig. 6 occasioned by the successive lifting and falling action of arm **50** caused by the repetitive camming thereagainst of the constant revolving crank pin **53** in either rotary direction. The resulting simultaneous motions of the figurette advancing along the platform and the cleaning movement of the long handled brush up and down simulate very realistically the actual appearance of a service man at work washing the car windows one at a time.

In Figs. 10 to 12 there is shown a modified form of the invention wherein it is not necessary that the motor reversing switch be mounted to travel in unison with the figurette. Here in place of carrying a complete switch such as **57**, the traveling nut **17** carries fixed thereon only a double ended thrust bar **78** of insulative material. In Fig. 11 this thrust bar is seen to have arrived at a position at the right end of its travel wherein it has pushed against a conductive spring leaf contact **79** that normally lies in circuit-making engagement with a companion contact **80** so that contact **78** is caused to separate from contact **80** breaking the circuit to motor **32** therethrough. Contacts **79** and **80** are mounted on the rear upright wall **81** of platform **12** in insulated relation thereto and to each other. The same is true of another pair of like contacts **82**, **83** in Fig. 10, stationed near the opposite end of the travel of thrust bar **78**.

The diagram of modified circuit connections in Fig. 12 denotes the above mentioned mechanical parts by like reference numerals. In addition this diagram shows a remotely located double push button control station at which there is one normally open remote control push button switch **84** which serves when manually depressed to energize only the platform carried contact **80** through a lead **85** from line **67** while another normally open remote control push button switch **86** serves when manually depressed to energize only the platform carried contact **82** through lead **87**. The other platform carried contacts **79** and **83** connect to opposite extremities of the motor field winding **66** through leads **88** and **89** respectively. A mean point in field winding **66** connects through the armature of the motor to power line **70** through the lead **90** which for convenience of wiring passes through the remote control box **91** containing the remote control switches **84** and **86**.

Aside from its electrical control system, the modified toy of Figs. 10 to 12 operates mechanically like that of Figs. 1 to 8. To cause the figurette to travel, one or the other of remote control push buttons **84** or **86** must manually be held closed. In Fig. 12, switch **84** is so held by keeping its push button manually depressed. This causes motor **32** to be energized through platform carried contacts **79**, **80** even though the other pair of platform carried contacts **82**, **83** are open. This runs motor **32** in such direction that the corresponding travel of nut **17** and its carried thrust bar **78** along screw shaft **23** is toward the right. If remote control switch **84** is held closed longer than required to advance the figurette to the limit of its travel toward the right, no damage will be done by continued attempt of motor **32** to run because the motor circuit then automatically becomes broken at contacts **79**, **80** when these contacts are forced to separate by the travel of thrust bar **78**. The motor can then be restarted only in an opposite direction of running and this is done by manually closing remote control switch **86**. This switch may be held closed manually until the figurette has completed its travel along the platform whereupon platform carried contacts **82**, **83** will again become automatically opened by the opposite end of thrust bar **78**.

When thrust bar **78** is at mean points in its range of travel along the platform, both pairs of contacts **82**, **83** and **79**, **80** will be closed, making it possible at will to start the journey of the window washer in either direction depending upon which of the remote control switch buttons **84** or **86** is manually depressed.

The principles of toy construction and the animation thereof to be learned from the foregoing disclosure are embodiable in many forms and arrangements of parts differing in various particulars from those herein shown to illustrate a successful form of the invention, wherefore the appended claims will be interpreted as directed to and intended to cover all substitutes of and equivalents for the forms and arrangements of parts herein shown as come within the broadest fair meaning of the definition of the invention contained in the claims.

I claim:

1. An animated trackside accessory for toy railroads, embodying in combination, an elongated hollow structure fashioned to represent a station platform adapted to be placed alongside a toy railway track, said platform having an elevated floor wall containing a slot extending lengthwise thereof, a figurette having an impellable projection extending through said slot and fashioned to represent a window washer standing atop said platform, a reciprocative element fashioned to represent a window washing brush having a long straight handle guided by said figurette for lengthwise movement and extending through said slot, and toy animating mechanism at least in part beneath said floor wall including connections to said impellable projection constructed and arranged to cause said figurette to be impelled along said platform structure by means of said projection, said animating mechanism also including connections to said reciprocative element exclusive of said figurette constructed and arranged to reciprocate said element longitudinally through said slot relatively to said figurette.

2. An animated trackside accessory for toy railroads as defined in claim 1, in which the said animating mechanism includes a motor atop the said floor wall of the platform structure having a shaft extending downward therebelow in driving connection with that part of the said mechanism therebelow, together with a pseudo station tool box atop said platform covering and concealing said motor whereby said shaft and driving connection are concealed by said tool box and platform structure.

3. An animated trackside accessory for toy railroads

as defined in claim 1, in which the said animating mechanism includes a prime mover so operatively and impellingly related to both the said figurette impelling projection and the said reciprocative element that bodily travel of said figurette and window washing movement of the said brush representing element occur simultaneously.

4. An animated toy for simulating the operation of a window washing workman, comprising in combination, a pseudo window cleaning appliance including an upright rod simulating a reach extending handle of said appliance, a figurette having a foot portion and having a trunk portion with integral arm and hand portions in fixed relation thereto, a slide bearing comprising an opening through at least one of said hands of the figurette through which opening said rod slidably extends, a source of animating motion, connections exclusive of the trunk arm and hand portions of the figurette including a rocker pivotally connected to said rod and operatively coupling said rod to said source of motion in a manner to cause said rod to be reciprocated lengthwise upward and downward through said bearing relatively to said figurette, a floor beneath said figurette comprising a straight guideway extending in sidewise direction relatively to the figurette slidably engaged by said foot portion thereof, and movement transmitting means including a screw thread follower joined to the said figurette and a rotatable screw threaded shaft in impelling engagement with said follower connecting said foot portion with said source of motion in a manner to cause said figurette to be impelled sidewise along said guideway simultaneously with said upward and downward reciprocations of said rod.

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