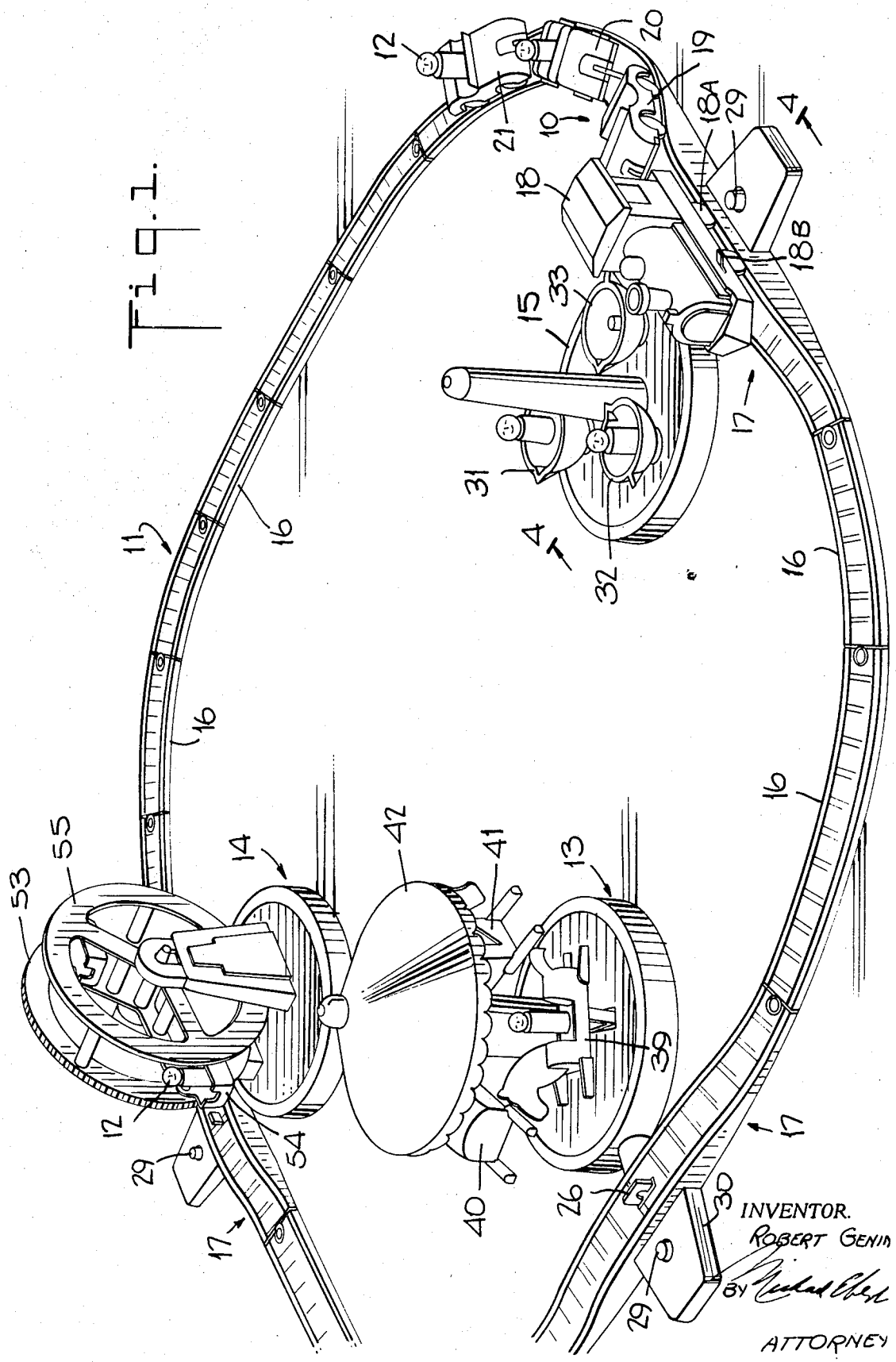
Feb. 16, 1971 R. GENIN 3,562,950

TRACK, TRAIN AND AMUSEMENT ACCESSORY MEANS DRIVEN BY SAID TRAIN

Filed April 28, 1967 4 Sheets-Sheet 1

Fig. 1.



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TRACK, TRAIN AND AMUSEMENT ACCESSORY MEANS DRIVEN BY SAID TRAIN

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Fig. 2.

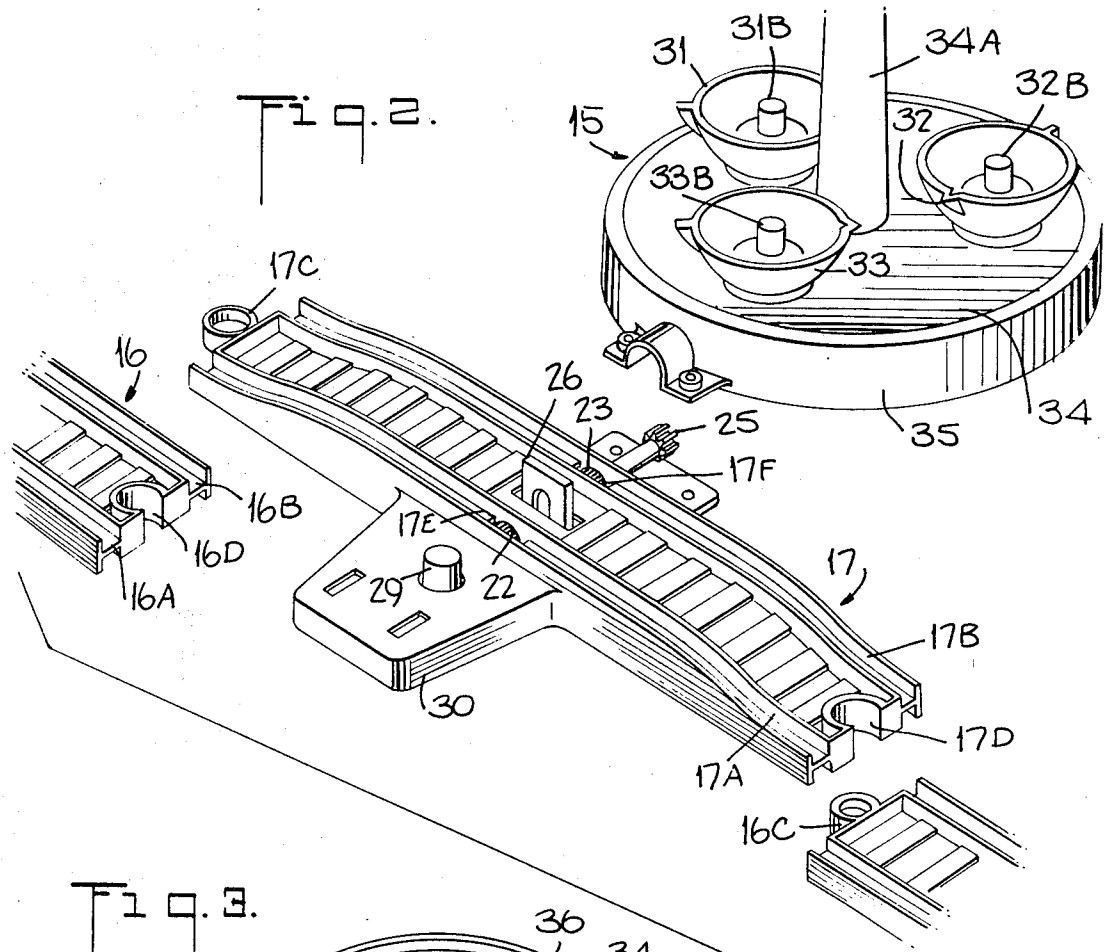
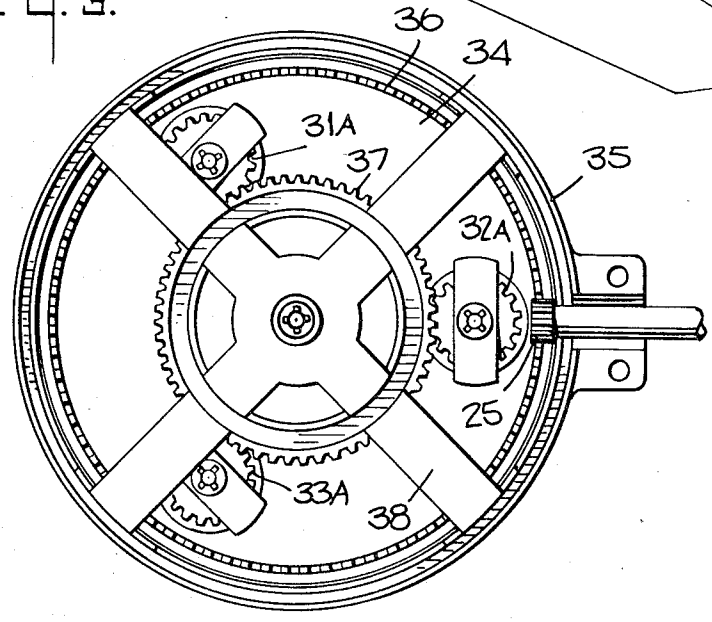


Fig. 3.



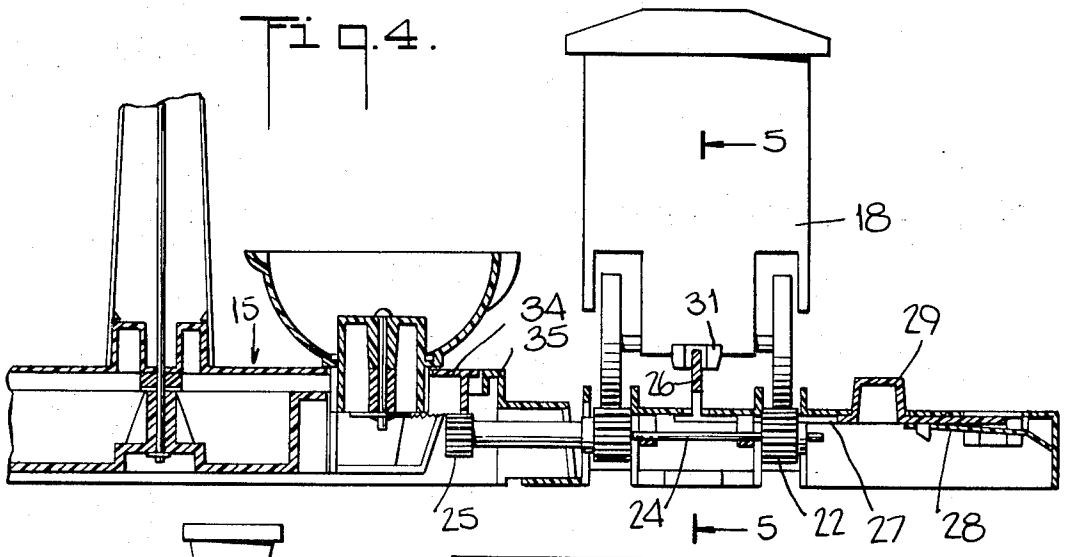
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TRACK, TRAIN AND AMUSEMENT ACCESSORY MEANS DRIVEN BY SAID TRAIN

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Fig. 4.



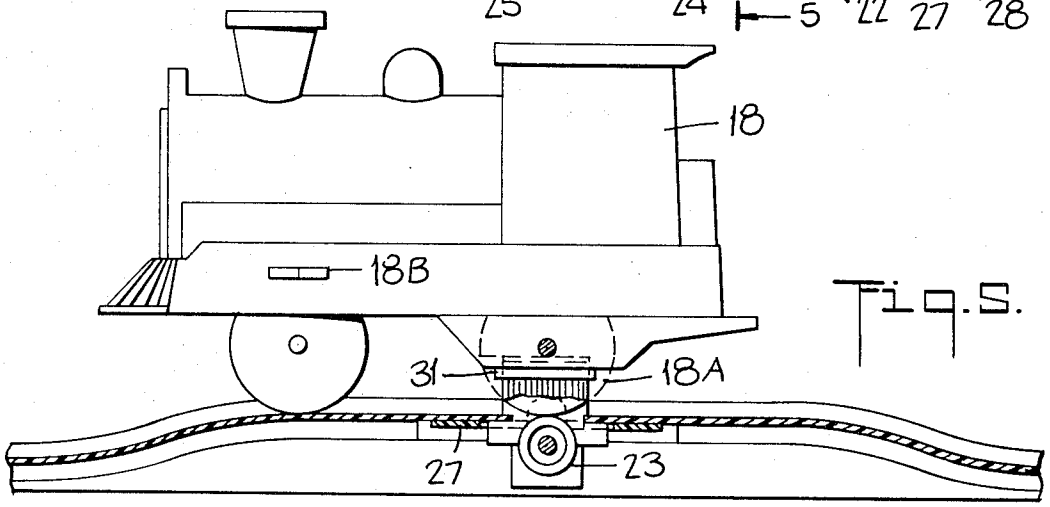


Fig. 5.

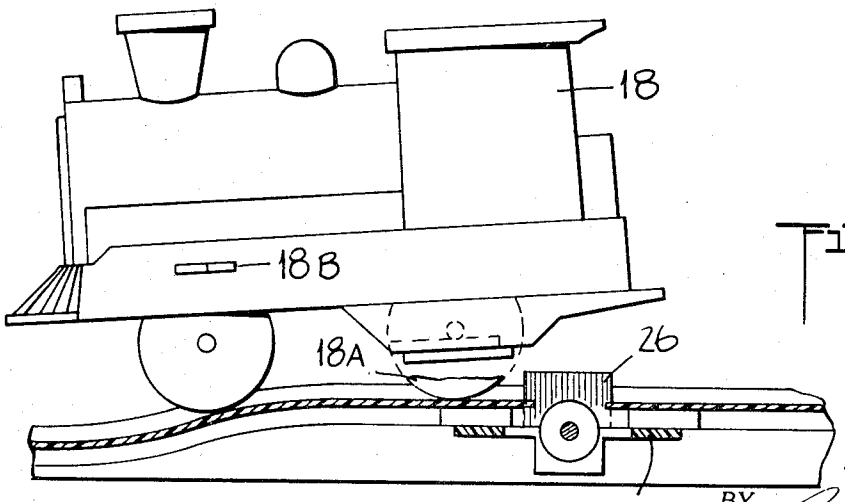


Fig. 6.

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TRACK, TRAIN AND AMUSEMENT ACCESSORY MEANS DRIVEN BY SAID TRAIN

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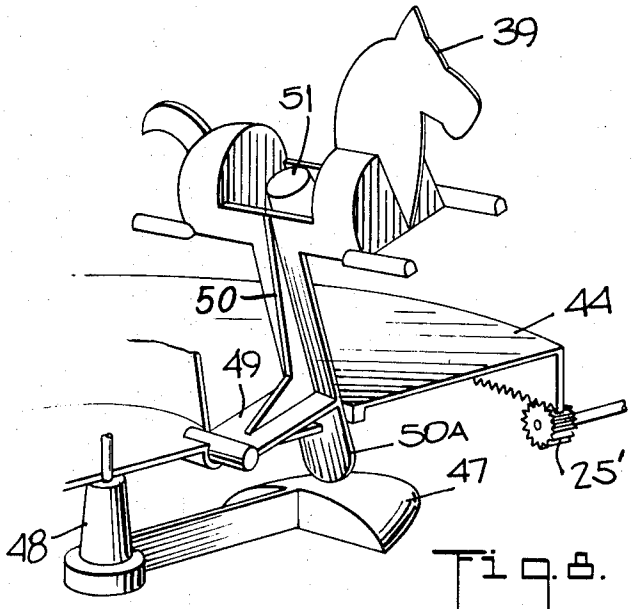


Fig. 8.

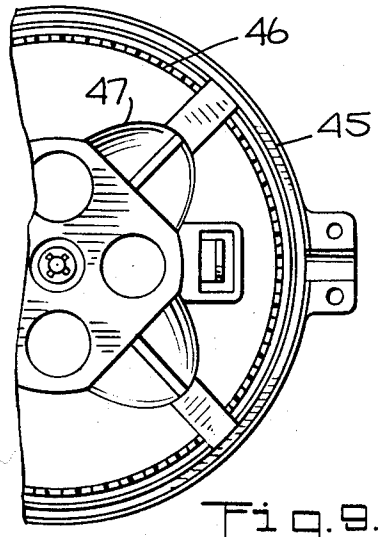


Fig. 9.

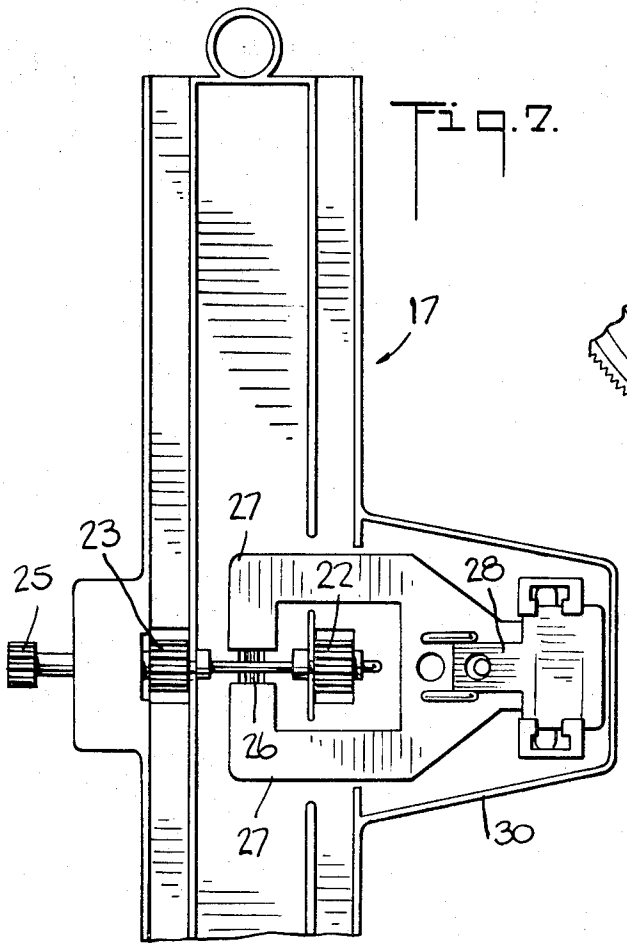


Fig. 7.

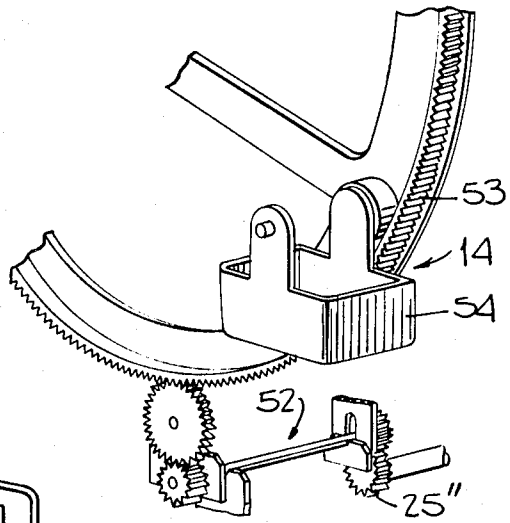


Fig. 10.

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3,562,950

TRACK, TRAIN AND AMUSEMENT ACCESSORY MEANS DRIVEN BY SAID TRAIN

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Int. Cl. A63h 33/26, 21/00
U.S. Cl. 46—243 8 Claims

ABSTRACT OF THE DISCLOSURE

An amusement park complex in which toy dolls are conveyed as passengers on a railroad train to a series of stations along the trackway, the train being caused to stop automatically at each station to permit the transfer of passengers to a ferris wheel or other amusement device located at the station, which amusement device is driven through a transmission coupling by the engine of the train whose wheels continue to turn even though movement of the train is arrested.

This invention relates generally to toy amusement parks, and more particularly to a complex constituted by a toy railroad which is adapted to convey doll-like passengers to a series of stations along the trackway, the train being automatically stopped at each station to permit transfer of the passengers to an amusement device located at the station.

A typical toy railroad is composed of a continuous trackway and a train, the train being constituted by an engine and a series of cars drawn thereby. The engine includes an electric motor and a battery for supplying power thereto as well as a control switch. When the switch is closed, the engine proceeds to pull the cars along the trackway.

Amusement park arrangements on a toy scale are also known in the form of carousels, ferris wheels, and other moving device or rides, which are motor-operated. A typical amusement park is made up of a variety of such devices, each with its own motor. Hence if a child sets up an amusement park, he must separately actuate and control each ride.

Accordingly, the primary object of the invention is to provide a toy amusement park complex which combines or integrates a toy railroad with amusement park rides, whereby the engine of the train also supplies motive power for operating these rides, and where the ride is actuated only when the train is located at the ride.

More specifically it is an object of this invention to provide a complex of the above-described type wherein the railroad functions as an excursion ride for doll-like passengers which are transported to a series of stations along the trackway, the train being stopped automatically at the station to permit transfer of the passengers to an amusement device located at the station.

A significant feature of the invention is that when the train automatically stops at a ride, it renders only that ride operative so that should the ride be in the form of a ferris wheel, the wheel proceeds to revolve and should the ride be in the form of a carousel, the turntable thereof is caused to turn.

Thus the child who plays with the amusement park complex assumes the role of master operator, the child being able to load the train with passengers, to start the train on its excursion along the trackway, to transfer the passengers from the train to the seats of the ferris wheel or other ride when the train is automatically arrested at a station, and to release the train so that it is free to continue the excursion until the next station is reached.

Because of the variety of functions which are under the control of the child and the simple character of these functions, the play value of the toy is exceptionally high and rewarding.

Also an object of the invention is to provide a complex of the above described type which may readily be assembled by the child, and which may be quickly dismantled for compact storage.

Briefly stated, these objects are attained in an amusement park complex comprising a continuous trackway composed of interconnecting track sections, some of which are in the form of station sections incorporating a transmission shaft having a pair of rollers at one end adapted to engage the front wheels of the train engine, and having at the other end thereof a pinion adapted to engage the operating mechanism of an amusement device, the station section also including an upstanding latch element which engages a slot formed in the under-carriage of the train as it enters the station section to arrest the movement of the train when the rotating front wheels thereof engage said rollers, the hand wheels then functioning to drive said device. A manually operated control member is provided to depress said latch element and thereby to release said train.

The engine includes a switch to apply power from a battery to the motor thereof, the cars hooked to the engine having seats for accommodating doll-like passengers, such that when the engine is switched on, it conveys the passengers to the first station, at which point the train is automatically arrested by the latching element to permit transfer of the passengers to seats on the amusement device, which is then driven by the engine through the transmission shaft, the action continuing until such time as the child depresses the control member to release the train for movement to the next station section, where passengers may again be transferred to an amusement ride.

For a better understanding of the invention, as well as other objects and further features thereof, reference is made to the following detailed description to be read in conjunction with the annexed drawing wherein the elements are identified by **1**, **1***a* reference numerals.

In the drawing:

FIG. 1 is a perspective view of an amusement park complex in accordance with the invention;

FIG. 2 is an enlarged view, in perspective, of one station section of the trackway which is separated from the other track sections;

FIG. 3 shows the underside of one of the amusement rides, which is in the form of spinning teacups;

FIG. 4 is a transverse section taken through the station track section along the plane indicated by line **4—4** in FIG. 1;

FIG. 5 is a section through the train engine taken in the plane indicated by line **5—5** in FIG. 4, in the position where movement of the train on the station section is arrested;

FIG. 6 is the same as FIG. 5, except that the train is released;

FIG. 7 is a plan view of the station section;

FIG. 8 is a perspective view, partially cutaway of the carousel;

FIG. 9 shows the underside of the carousel; and

FIG. 10 shows a portion of the ferris wheel mechanism.

Referring now to FIG. 1, there is illustrated an amusement park complex according to the invention, the main components of the complex being a railroad train, generally designated by numeral **10**, for transporting passengers on a continuous trackway **11** to a series of three stations at which amusement rides are located. The passengers are in the form of doll-like figures **12**, a sufficient

number of figures being supplied to provide passengers for both the train and for the rides.

The trackway **11** is arranged to conduct the train to a series of stations at one of which there is located an amusement ride in the form of a carousel or merry-go-round **13**, a ferris wheel **14** being disposed at the second station and a spinning teacup ride **15** at the third. The number of stations and associated amusement devices as well as the configuration of the trackway may be varied as desired, the particular complex shown being for the purposes of illustration only.

Trackway **11** is constituted by interconnecting travel track sections **16** having various curvatures and station track sections **17**, one of which is associated with each amusement ride. As best seen in FIG. 2, each travel section includes a pair of parallel channels **16A** and **16B**, adapted to accommodate and guide the wheels of the train, a projecting tongue **16C** being provided at one end of the section which is adapted to snap into a socket **16D** formed at the other end to effect an interconnection therebetween. Similarly, each station section includes parallel channels **17A** and **17B**, a tongue **17C** and a socket **17D**. The channels of the station sections register with those of the travel sections to provide a continuous trackway.

Train **10** is composed of a locomotive or engine **18** and a series of three cars **19**, **20** and **21** hooked thereto, although in practice a greater number may be employed. The cars are designed to seat the passengers **12**, and for this purpose each car includes a small post which telescopes within the hollow body of the doll-like passenger **12** to maintain the passenger in place. Locomotive **18** includes an electric motor of suitable design which is powered by a battery. The motor is operatively coupled to the rear wheels **18A** of the engine and is manually controlled by a switch **18B**. It will be appreciated that the invention is also operable with a spring-wound motor or with an electrified trackway coupled to a power line.

Station track section **17**, as best seen in FIGS. 2 and 7, includes a raised central portion having a pair of gaps **17F** and **17E** cut in the channels thereof, within which a pair of rollers **22** and **23** are disposed, the rollers being mounted on a transmission shaft **24** which extends laterally from the station section and terminates in a pinion **25**. The periphery of the rollers is knurled, so that when they are engaged by the rear wheels of the engine and movement of the engine is arrested, the rotating rear wheels cause the rollers to rotate, thereby turning the transmission shaft and the pinion **25**, which pinion engages an input gear in the amusement ride.

Extending upwardly from station section **17** at a position intermediate rollers **22** and **23** is a U shaped latch element **26**, the vertical arms of the latch element being attached to the horizontal arms of a bifurcated plate **27**, the base of which is connected to a flat spring **28**, the plate and spring being on the underside of the track section. Plate **27** is provided with a button **29** which projects upwardly through an opening in a side box **30** integral with the station section **17**. The spring **28** is anchored at one end within box **30** and normally maintains latch element **26** in its fully extending vertical position. When the control button **29** is depressed, it acts to deflect plate **27** and to cause latch element **26** to retract.

The undercarriage of engine **18** includes a latch socket **31**, which is centrally positioned in alignment with the latch element so that when the engine rides over the station section, latch element **26** enters latch socket **31** and further movement of the train is blocked, as shown in FIGS. 4 and 5. At this position, the rear wheels **18A** of the engine engage rollers **22** and **23** to cause pinion **25** to turn. When button **29** is thereafter depressed to retract the latch element, the train is released as shown in FIG. 6, and resumes its travel until it encounters the latch element on the next station section.

When the train is arrested at the station section at which the spinning teacup ride **15** is located, the rotating pinion **25** acts to operate these teacups to cause them to orbit and concurrently to spin. The manner in which this is accomplished can best be appreciated in connection with FIGS. 2 and 3. This ride is constituted by three teacups **31**, **32** and **33**, mounted for rotation at equispaced positions on a turntable **34**. Turntable **34** operates within a circular frame **35** and is provided with a peripheral flange gear **36**, which gear is engaged by pinion **25** so that when the engine movement is arrested and pinion **25** is caused to rotate, turntable **34** is caused to turn, thereby rotating the cups in an orbit about a center pole **34A**.

Cups **31**, **32** and **33** are mounted on vertical shafts connected to planetary gears **31A**, **32A** and **33A**, disposed below the turntable, which planetary gears engage a fixed sun gear wheel **37** supported on a spider **38** attached to frame **35**. As the turntable **34** rotates, planetary gears **31A**, **32A** and **33A** orbit about sun gear **37** and cause the cups connected thereto to spin as they at the same time revolve on the turntable about the center pole. The cups are provided with upstanding posts **31B**, **32B** and **33B**, the passengers **12** being mounted thereon.

Thus when the train enters and halts at the station section associated with the spinning teacup ride, passengers may be transferred to the spinning teacups to enjoy the ride, while replacements may be put in the cars of the train. Thereafter the control button is pressed to release the train to continue the excursion until carousel **13** is reached.

Carousel **13** is constituted by three horses **39**, **40** and **41** which are arranged to jog up and down on a rotating turntable **44**, below a conical canopy **42**, mounted on a central pole **13**. As best seen in FIGS. 8 and 9, turntable **44** is mounted for rotation within a circular frame **45** and is provided with a peripheral flange **46** having gear teeth which are engaged by drive pinion **25'** extending from the station section. Mounted on the underside of the frame is a spider having convex quadrant arms **47** and a central bearing **48** for supporting the rotary turntable.

Each of the horses, such as horse **39** shown in FIG. 8, is mounted on a lever **49** pivoted on the turntable, the lever having an arm **50**, whose lower end **50A** extends through a slot in the turntable **44** to engage the fixed convex quadrants **47** as the turntable rotates, the horse being attached to the upper end of the arm. Thus as the turntable is driven by pinion **25'**, the horses thereon rotate in an orbit about the center pole and at the same time are caused to jog up and down as the lower arm portion **50A** engages the convex quadrants **47** four times in the course of each rotary cycle. Each horse is provided with a post **51** onto which a passenger **12** may be mounted.

Thus when the train is arrested at the station associated with the carousel, passengers may be transferred to the horses to enjoy the merry-go-round. Thereafter the train may be released to travel to the ferris wheel. Ferris wheel **14**, as best seen in FIGS. 1 and 10 includes a gear train **52** for operatively coupling drive pinion **25''** to the geared wheel **53**. Bucket seats **54** having mounting posts therein for receiving passenger dolls are pivotally mounted between geared wheel **53** and a parallel wheel **55**. As the ferris wheels rotate, the pivoted bucket seats tend to swing.

When dismantled, the complex consists of the elements of the train, the various track and station sections and the amusement rides. These components may be compactly packaged. To assemble the toy, all the child need do is to interconnect the track sections, and place the rides so that their input gears mesh with the drive pinions of the station sections. The train is then put together by hooking the cars onto the engine, the train being placed on the trackway with the wheels thereof in the guide channels. The engine switch is turned on, and the train then enters the station to activate the associated ride.

The child may add and remove passenger dolls in the course of the excursion, as suits his fancy, and he may maintain any one ride in operation as long as he wishes, the child acting as the master operator of the amusement park.

What I claim is:

1. A toy railroad complex comprising:

(a) a trackway composed of interconnected travel and station sections, all of said sections having a pair of channels therein to guide the wheels of a train, each of said station sections including a pair of rollers disposed at a fixed position in a gap in said channels, which rollers are in a position to be engaged by the wheels of said train and are mounted on a transmission shaft extending laterally from said station section and terminating in a pinion, and a retractable latch element, said latch element being disposed between said channels and having a retracted position which offers no interference with said train and an extended position, and means independent of said rollers to operate said latch element,

(b) a wheeled train adapted to travel on said trackway and including an engine having a pair of driven wheels and means, separate from said wheels, engaged by said latch element in its extended position on any one of said station sections to halt said engine at a position at which said driven wheels engage said rollers to operatively couple said engine to said pinion, and

(c) accessory means associated with each station section to be operated by said halted engine, said accessory means including an input gear which intermeshes with said pinion to cause said halted engine to operate same.

2. A complex as set forth in claim 1, wherein said latch element is vertically supported on a spring mounted plate disposed horizontally below the station section, said plate having a button which, when pressed, causes deflection of the plate and retraction of the latch element to release said train.

3. A complex as set forth in claim 1, wherein said engine is a locomotive having a battery-operated motor coupled to the rear wheels of the locomotive, said rear wheels being mounted on an undercarriage having a socket to receive the latch element and thereby arrest movement of the engine.

4. A complex as set forth in claim 1, wherein one of said accessory means is a ferris wheel having bucket seats pivotally mounted between a pair of vertically mounted wheels, one of said vertically mounted wheels having a peripheral gear, and a gear train operatively coupling the geared wheel to the pinion.

5. A complex as set forth in claim 1, wherein one of said accessory means is a carousel including a turntable which is operatively coupled to said pinion, and a plurality of horses mounted on said turntable, each horse being supported on a pivoted lever having an arm which periodically engages a series of fixed convex members below said turntable as the turntable rotates to cause said horses to jog.

6. A complex as set forth in claim 1, wherein one of said accessory means is composed of a turntable operatively coupled to said pinion, and a plurality of teacups supported for rotation about said turntable, each cup being connected to a planetary gear which engages a fixed sun gear below the turntable to cause said cups to spin as they orbit on the turntable.

7. A complex as set forth in claim 1, wherein each of said accessory means is an amusement ride having posts for supporting doll-like passengers further including doll-like passengers for said train and said rides, said passengers being in the form of hollow cylinders which are mounted on supporting posts on said train and said rides.

8. A toy railroad complex comprising:

(A) a trackway composed of interconnected travel and station track sections, all of said sections having a pair of channels therein to guide the wheels of a train, at least one said station section having roller means including at least one roller disposed at a fixed position in a gap in one of said channels, which roller is in a position to be engaged by one of the wheels of said train and is mounted on a transmission shaft extending laterally from said station section and terminating in a pinion, a retractable latch element mounted at said one station, said latch element being disposed between said channels and having a retracted position which offers no interference with said train and an extended position, and means independent of said roller to operate said latch element,

(B) a wheeled train adapted to travel on said trackway and including an engine having a pair of driven wheels and means engageable by said latch element in its extended position to halt said engine at a position at which at least one of said driven wheels engages said roller means to operatively couple said engine to said pinion and at which the other of said driven wheels is maintained free of contact with its respective track section channel, and

(C) accessory means associated with said one station section to be operated by said halted engine, said accessory means including an input gear which intermeshes with said pinion to cause said halted engine to operate same.

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U.S. Cl. X.R.

46—204, 216; 74—13; 104—53; 272—31