

Sept. 7, 1965

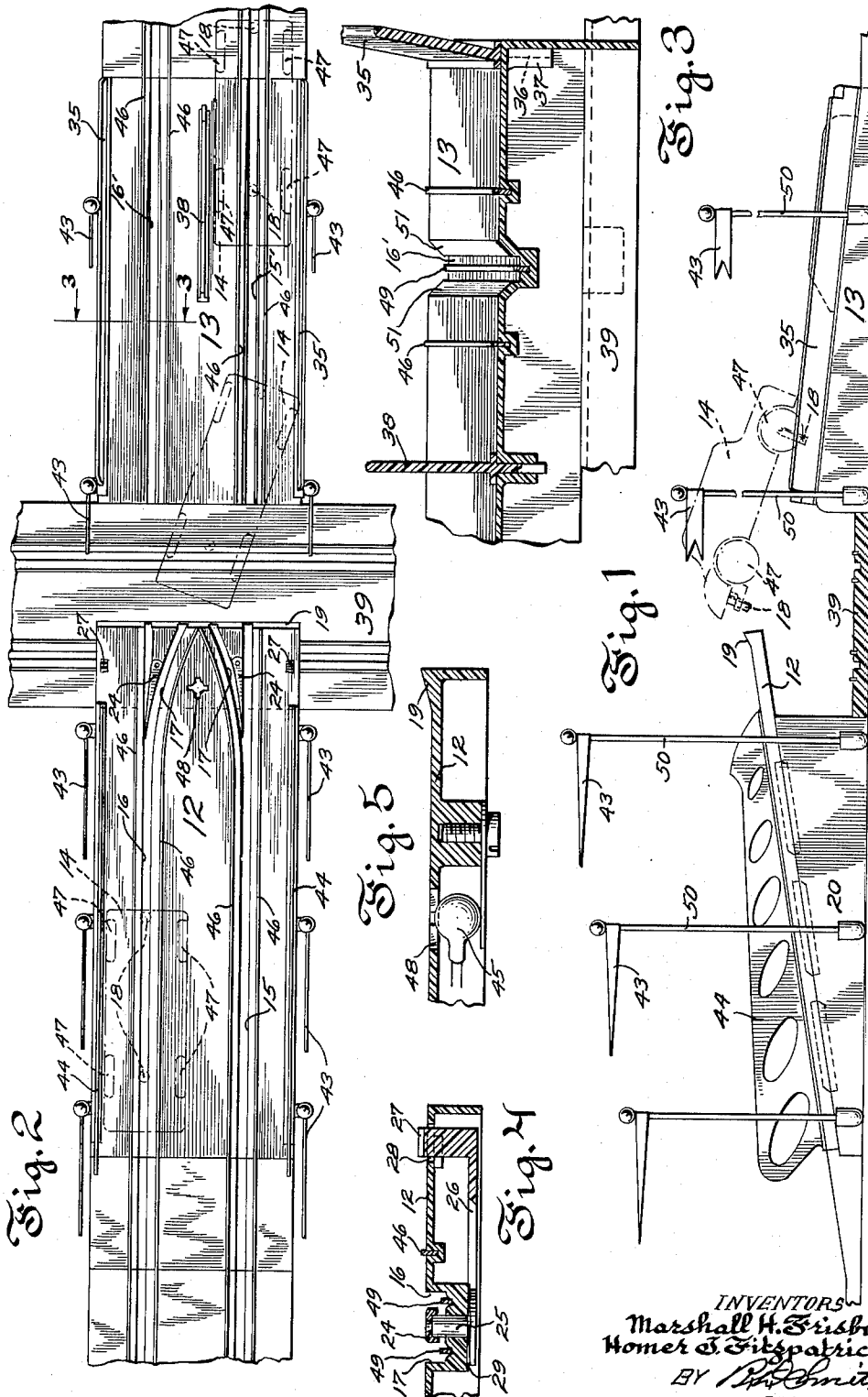
M. H. FRISBIE ETAL

3,204,574

JUMP RAMP

Filed March 25, 1963

3 Sheets-Sheet 1



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3 Sheets-Sheet 2

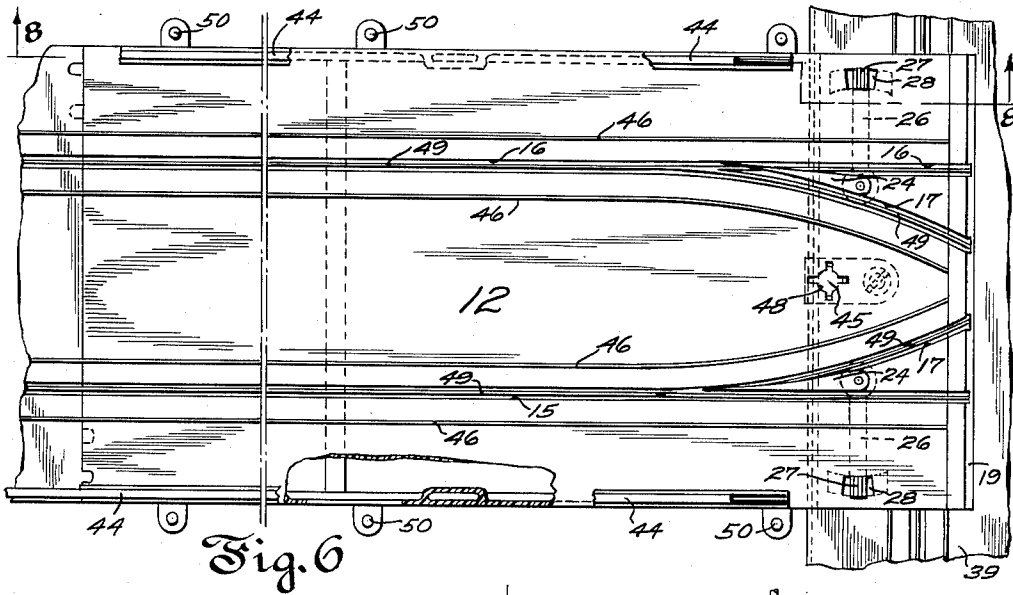


Fig. 6

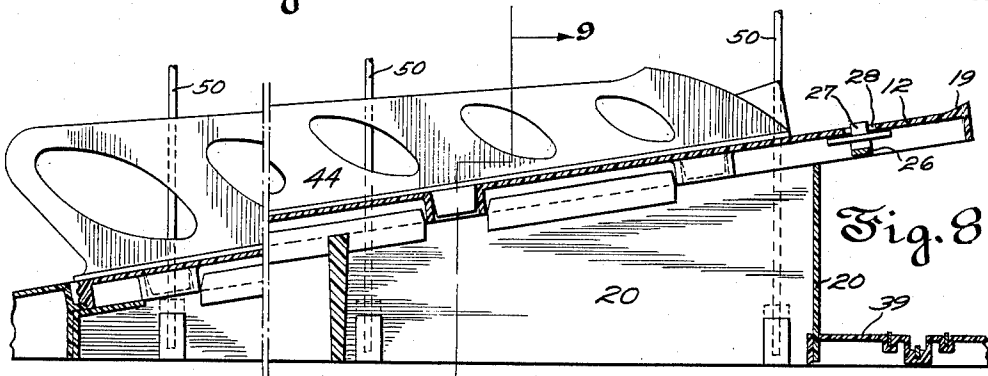


Fig. 7

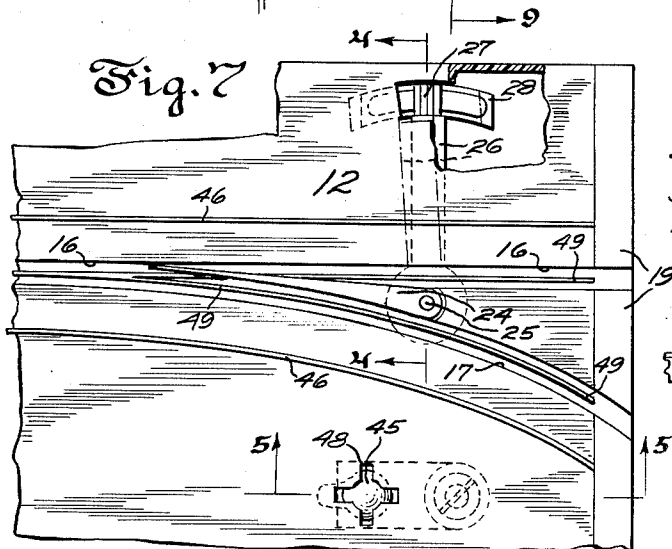


Fig. 8

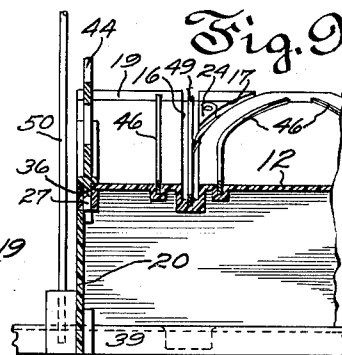


Fig. 9

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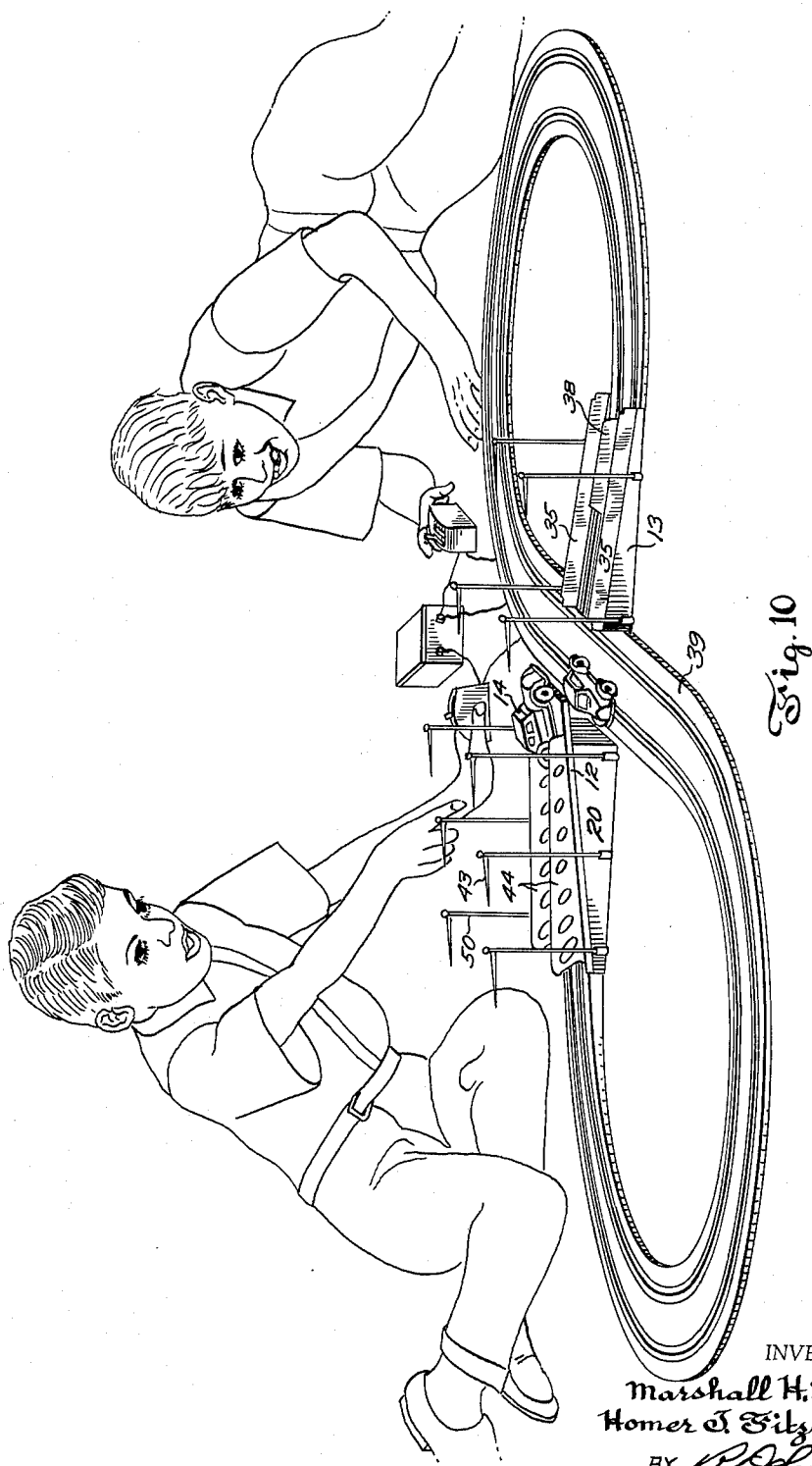


Fig. 10

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1

3,204,574

JUMP RAMP

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Filed Mar. 25, 1963, Ser. No. 267,542
8 Claims. (Cl. 104-54)

This invention relates to a jump ramp which may be incorporated in toy race games, model vehicular traffic systems and the like for imparting spectacular action to the operating performance of miniature self impelled automotive vehicles commonly guided in predetermined lanes of travel along a pseudo roadbed by means of grooves or guide rails in the roadbed.

Where plural lanes of vehicle travel are present in race track toys it has been proposed to arrange vehicle guiding grooves to extend side by side so as to provide parallel lanes and also to so direct the grooves at points that they cross and merge with one another for leading vehicles from one lane to another. An example of such arrangement of roadbed grooves is illustrated in a copending application, Serial No. 167,254, filed Jan. 19, 1962, owned by the assignee of the present application.

An object of the present improvements is to lend more excitement, uncertainty and entertainment value to the performance of a model vehicle by causing it to be catapulted by its own momentum across a gap in an otherwise continuous roadbed.

Another object is to cause the vehicle to be catapulted from a lane of travel on one side of the gap in the roadbed onto a choice of either of two continuing lanes of travel on the opposite side of such gap by controlling the direction in which the vehicle is traveling at the time it is catapulted across the gap.

Another object is to cause the vehicle to be catapulted from either of two lanes of travel at one side of the gap to either of two continuing lanes of travel receptive to the vehicle on the other side of the gap.

Another object is automatically to direct the vehicle into running engagement with a vehicle guiding slot of the roadbed after the vehicle has been catapulted across the gap therein.

These and other objects of the present improvements will appear in fuller detail from the following description having reference to the appended drawings wherein:

FIG. 1 is a view in elevation of a jump ramp embodying a successful form of the invention and indicates in broken lines a vehicle being catapulted across a gap in the roadbed.

FIG. 2 is a plan view looking downward on the jump ramp of FIG. 1.

FIG. 3 is a view on an enlarged scale taken in section on the plane 3-3 in FIG. 2 looking in the direction of the arrows.

FIG. 4 is a fragmentary view taken in section on the plane 4-4 in FIG. 7 looking in the direction of the arrows.

FIG. 5 is a view taken in section on the plane 5-5 in FIG. 7 looking in the direction of the arrows.

FIG. 6 is a contracted enlarged view like a portion of FIG. 2 confined to the up-ramp of the roadbed.

FIG. 7 is a still further enlarged view of a portion of FIG. 6 showing details of the lane switching mechanism near the jump off edge of the up-ramp that borders the gap in the roadbed.

FIG. 8 is a contracted elevational view of the up-ramp taken in section on the plane 8-8 in FIG. 6 looking in the direction of the arrows.

FIG. 9 is a fragmentary view taken in section on the

2

planes 9-9 in FIG. 8 looking in the direction of the arrows.

FIG. 10 is a perspective view of the toy in action equipped with a figure-8 layout of trackage.

The simulated roadbed structure which incorporates the present improvements comprises an up-ramp section 12 supported on a sub structure 20 and a relatively low section 13 the proximate ends of which sections are separated by a gap across which a miniature self propelled wheeled vehicle 14, such as a racing car, is to be catapulted by its own momentum in a manner to leave the up-ramp section 12 and land on the low section 13 without overturning and with continued guidance in a predetermined lane of travel as it continues on its way. One or more lanes of travel to which the vehicle is confined are determined by grooves 15, 16 or 17 in the up-ramp roadbed section 12 and 15', 16' in the low roadbed section 13 of which the grooves 15, 16 and 15', 16' are straight, laterally spaced apart and parallel, and of which the grooves 17 are branch grooves in relation to the straight grooves 15 and 16. Branch grooves 17 openly communicate with the straight grooves 15, 16 respectively at a point of mergence therewith. All of the grooves 15, 16 and 17 of the up-ramp section open freely to the gap between the roadbed sections so that no resistance is offered to the travel of the vehicle upon reaching the end of the up-ramp that borders on the gap. Each of the vehicles which is to be catapulted across the gap carries one or more depending pilot pins 18 which can track in any of the aforesaid grooves. The tread surface of the up-ramp on which the wheels of the vehicle roll may be lipped upward at 19 to fling the front of the vehicle slightly upward as its front wheels leave the up-ramp and to do likewise to the rear end of the vehicle as its rear wheels leave the up-ramp.

FIGS. 2 and 6 show that the branch grooves 17 deviate respectively from the straight or main grooves 15 and 16 near the jump-off end of the up-ramp section and incline toward each other as they approach and open into the gap. This causes the course of a vehicle on being transferred from the guidance of grooves 15 or 16 to the guidance of either of the branch grooves 17 just before it leaves the up-ramp to become directed somewhat crosswise the roadbed toward the opposite continuing groove 16' or 15' respectively on the low section of the roadbed, and hence the vehicle becomes catapulted across the gap in an oblique direction as indicated by broken lines in FIG. 2.

The users of the toy have it within their control to determine whether the vehicle shall leave the up-ramp in a straight course of travel in line with either of the grooves 15 or 16, or in a transverse direction of travel determined by one of the branch grooves 17. Such control is effected by switch tongues 24 each of which, as best shown in FIGS. 4 and 7, is fixed on a vertical rotatable stub shaft 25 journaled in the top wall of the up-ramp roadbed section so as to swing between positions with respect to grooves 15 and 16 respectively as shown in FIG. 2. Such shifting of a switch tongue 24 is effected by a switch throwing arm 26 that is fixed on the bottom end of the aforesaid stub shaft 25 beneath the top wall of the up-ramp section. Arm 26 carries a manually actuatable thump piece 27 that extends upward through an elongate arcuate slot 28 in the section wall and is thus accessible to be pushed back and forth by a light touch of the operator's finger tip. A spring thrust washer 29 yieldingly maintains the switch tongue in the positions to which moved.

Recalling that the vehicle 14 can be flung obliquely toward the right or toward the left as it leaves the up-ramp section 12, means are needed and provided to pre-

vent the vehicle from running off from the side of the low section 13 of the roadbed after landing thereon. Such means are herein provided by a wall or guard fence 35 upstanding from the roadbed section at each lateral edge thereof. Fence 35 is anchored removably to the roadbed by means of depending mounting lugs 36 which fit into sockets 37 formed in the side structure of the roadbed. If hurled against such guard fence the vehicle will slide along the fence and be guided thereby into alignment with the nearest guide groove 16' or 15' whereupon the pilot pin or pins 18 of the vehicle will enter the groove and thereafter track in the groove thus having its oblique direction of travel rectified into accordance with the course of the roadbed. Rebound of the vehicle after impact against the fence 35 is checked by a buffer partition 38 that upstands fixedly from the low section of the roadbed midway between the grooves 15' and 16'.

The gap between the roadbed sections 12 and 13 is shown in the drawings to be underlain by a stretch of level roadbed 39 and it will be understood that such stretch of roadbed may form part of a figure-8 circuitous layout of roadbed of which the up-ramp section 12 and low section 13 are also parts, the gap between sections 12 and 13 being the only break or interruption in the continuity of such circuitous layout.

For adding a gala or sportsman-like atmosphere to the appearance of the toy, flying pennants such as 43, decorative fencing such as 44, and one or more spot or signal lights represented by the partially shielded electric lamp 45 shining through an aperture 48 in the tread surface of the up-ramp may be provided, the whole constituting a knock-down construction that when taken apart can be compactly packaged for merchandizing and safety against breakage and put together without tools. All parts may be made of a hard plastic such as high impact polystyrene with the exception of electrical conductor strips 46 lodged in the roadbed and which in usual fashion are wiped by collector brushes (not shown) carried by the vehicle for picking up current to power the propulsion motor (not shown) which is understood to be carried by the vehicle and geared to drive the traction wheels 47 thereof. For more particulars as to the electrical equipment of the toy, reference is made to the aforesaid copending application, Serial No. 167,254. The decorative fencing 44 is mounted on up-ramp 12 by bottom edge lugs 36 fitting into sockets 37 as in the case of the guard fence 35.

In operation let it be assumed that the gap between the elevated roadbed sections occurs at the crossing point of the lanes of travel in a figure-8 layout of an otherwise continuous roadbed of which the lane determining grooves on the level underlying roadbed section 39 are continuations of the grooves 15, 15', 16 and 16' on the elevated roadbed sections 12 and 13. Thus a vehicle if it happens to be passing the gap while traveling on the underlying roadbed 39 will be jumped over by another vehicle that can simultaneously leap across the gap at the higher level of the gap.

If the lane switching tongue 24 is thrown to a position corresponding to that shown at groove 15 in FIGS. 2, 6 or 7, a vehicle going from left to right in FIG. 2 will climb the up-ramp 12 and leave the lip 19 of the ramp in a straight course of travel so as to land on and continue along the aligned lane of travel on low roadbed section 13, whereupon the pilot pins 18 of the vehicle that had been tracking in groove 15 will now track in groove 15' as the vehicle continues along the race track.

If the lane switching tongue 24 is thrown to a position corresponding to that shown at groove 16 in FIGS. 2, 6, or 7, the vehicle traveling from left to right in said figures and tracking in groove 16 will have its course diverted so as to track in groove 17 of the branch lane just before the vehicle arrives at the jump off point at the lip 19 of the up-ramp. This will cast the vehicle diagonally in an oblique direction across the gap in the roadbed from the lane of groove 16 on the up-ramp 12 to the different lane

of groove 15' on the low roadbed section 13. The vehicle will thus be caused to impinge against the guard fence 35 and prevented from rebounding too far laterally toward groove 16' by the buffer wall 38 whereupon the pilot pins 18 of the vehicle find their way into tracking relation to groove 15' aided by the beveling of the edges of the groove as at 51. (See FIG. 3.) This same beveling is provided in groove 15'.

The drawings in some instances show an electrical conductive strip 49 lodged in the insulative material of the roadbed at the bottom of the grooves 15, 15', 16, 16' and 17. The aforesaid copending application illustrates in detail how the vehicle may collect propulsion current from 49 together with one or both of the conductive strips 46 which is a feature that is not germane to the present improvements.

The appended claims are drawn to these and other variations of the exact constructions herein described and illustrated if coming within a broad viewpoint of the invention as defined by the claims.

What is claimed is:

1. In a race track or similar toy, roadbed simulating structure for causing a self propelled model vehicle to be catapulted by its own momentum across a gap in the roadbed comprising, a course of model roadbed interrupted by a gap therein and including an up-ramp section of said roadbed having a terminal edge bordering one side of said gap and a relatively lower section of said roadbed separated from said up-ramp section by said gap and bordering the side of said gap opposite said up-ramp terminal edge, said up-ramp section having a groove adapted to be tracked by a model vehicle whereby to establish a lane of travel for the vehicle leading to said terminal edge, said groove in said up-ramp section being deflected obliquely to the course of said roadbed and opening into said gap whereby to permit the vehicle to leave said up-ramp terminal edge and be trajected by its own momentum in an oblique direction across said gap from one side of said up-ramp section to the opposite side of said lower roadbed section, and guard means including walls upstanding from said lower roadbed section spaced apart crosswise the roadbed to form a vehicle guiding passageway on said lower roadbed section positioned to be receptive to a vehicle catapulted thereon in said oblique direction from said up-ramp section of the roadbed and operative to rectify the oblique travel of said vehicle into accordance with the course of said roadbed.

2. In a racetrack or similar toy, roadbed simulating structure for causing a self propelled model vehicle to be trajected by its own momentum across a gap in the roadbed comprising, a course of model roadbed interrupted by a gap therein and including an up-ramp section of said roadbed having a terminal edge bordering one side of said gap and a relatively lower section of said roadbed separated from said up-ramp section by said gap and bordering the side of said gap opposite said up-ramp terminal edge, said up-ramp section having a main groove coursing along said roadway to said gap and a spur groove angularly divergent from said main groove, both of said grooves opening into said gap and adapted to being tracked by said vehicle leading to said terminal edge, whereby a vehicle tracking in said spur groove is trajected across said gap from said up-ramp section onto said lower roadbed section in an oblique direction with respect to the course of said roadbed, and guard means including walls upstanding from said lower roadbed section spaced apart crosswise the roadbed to form a vehicle guiding passageway on said lower roadbed section positioned to be receptive to a vehicle trajected thereon from said up-ramp section of the roadbed and operative to rectify the oblique travel of said vehicle into accordance with the course of the roadbed.

3. In a racetrack or similar toy, roadbed simulating structure as defined in claim 2, together with a switch tongue shiftable between positions relative to the said

grooves operative to direct the vehicle into the said spur groove and to block the vehicle from entering said spur groove respectively.

4. In a racetrack or similar toy, roadbed simulating structure as defined in claim 2, together with counterparts of the first said main and spur grooves disposed to establish on the said up-ramp section two additional lanes of travel for model vehicles approaching the said gap, said counterparts of the said spur grooves converging toward each other as both spur grooves approach the said gap, whereby vehicles can be catapulted from either side of said up-ramp section diagonally across said gap to the opposite side of the said lower roadbed section.

5. In a racetrack or similar toy, roadbed simulating structure for causing a self propelled model vehicle to be trajected by its own momentum across a gap in the roadbed comprising, a course of model roadbed interrupted by a gap therein and including an up-ramp section of said roadbed having a terminal edge bordering one side of said gap and a relatively lower section of said roadbed separated from said up-ramp section by said gap and bordering the side of said gap opposite said up-ramp terminal edge, said up-ramp section having a groove adapted to be tracked by a model vehicle whereby to establish a lane of travel for the vehicle leading to said terminal edge, said groove in said up-ramp section opening into said gap whereby to permit the vehicle to leave said up-ramp terminal edge and be trajected by its own momentum across said gap, together with a stretch of roadbed extending crosswise past said gap interrupted structure at a lower level than either the said up-ramp section or the said lower roadbed structure and underlying said gap, whereby a vehicle trajected across said gap may pass over a vehicle traveling or standing on said crossing stretch of roadbed.

6. In a model racetrack or similar toy the combination of, a model vehicle having a body equipped with traction wheels and carrying a pilot member near the forward end of said vehicle depending therefrom for guiding the body of the vehicle along predetermined lanes of travel, roadbed simulating structure presenting a substantially even tread surface sufficiently wide from side to side of the roadbed to afford at least two of said lanes of travel for said vehicle, said surface containing a groove tracked by said pilot member extending at least in part in an oblique direction with respect to said sides of the roadbed where-

by a vehicle travelling on said tread surface can swerve from side to side of the roadbed, said structure comprising discontinuous roadbed sections on relatively higher and lower levels respectively and separated lengthwise of the roadbed by a gap in said tread surface across which said vehicle traveling in a lane on the higher of said sections can be trajected from said lane through the air in said oblique direction and continue its travel in a relatively offset lane on the lower of said sections.

7. In a model racetrack or similar toy the combination defined in claim 6, in which the lower section of the said model roadbed has a relay groove disposed to receive and be tracked by said pilot member of the trajected model vehicle after the latter lands on said lower roadbed section, said relay groove having beveled lateral edges to provide wider receptivity to said pilot member of the model vehicle.

8. In a racetrack simulating toy including automotive model vehicles, a figure-8 shaped layout of simulated roadbed providing an endless course of vehicle travel and including stretches of said roadbed respectively on relatively high and relatively low levels extending in mutually crossing relation at the center of said figure-8 layout, said high level stretch of roadbed being interrupted by a gap directly over said low level stretch of roadbed at said center of the figure-8 formation, whereby a model vehicle traveling on said high level stretch of roadbed can catapult across said gap over another model vehicle traveling on said low-level stretch of roadbed simultaneously.

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Examiners.

UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 3,204,574

September 7, 1965

Marshall H. Frisbie et al.

It is hereby certified that error appears in the above numbered patent requiring correction and that the said Letters Patent should read as corrected below.

In the grant, lines 2 and 3, and line 13, and in the heading to the printed specification, lines 4 and 5, name of assignee, for "A. C. Gilbert Company", each occurrence, read -- The A. C. Gilbert Company --.

Signed and sealed this 15th day of March 1966.

(SEAL)

Attest:

ERNEST W. SWIDER

Attesting Officer

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Commissioner of Patents