April 21, 1953 E. FIELDS 2,636,114

TOY TRACK GAME

Filed March 9, 1951 2 SHEETS—SHEET 1

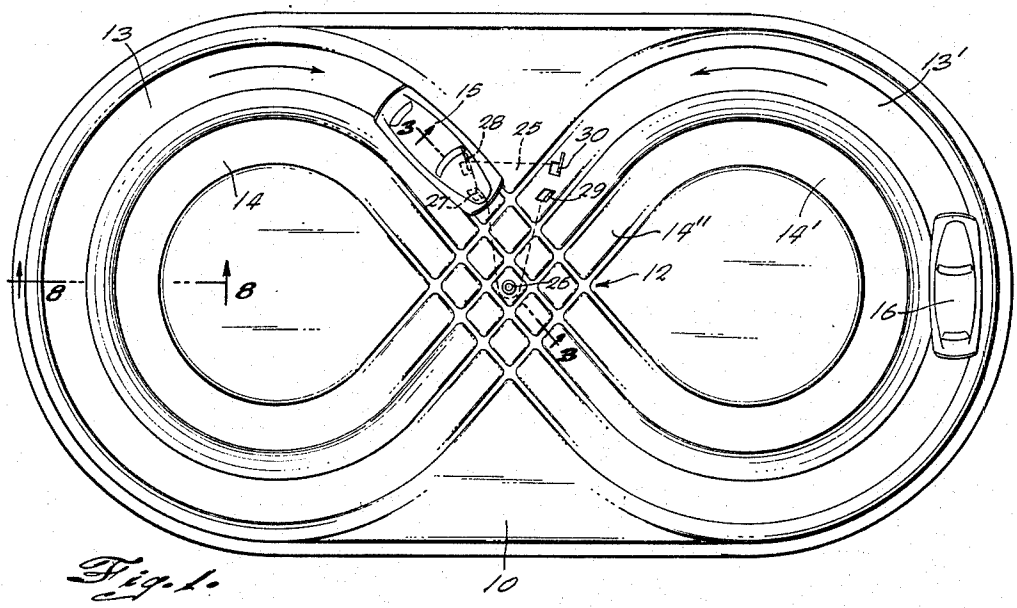


Fig. 1.

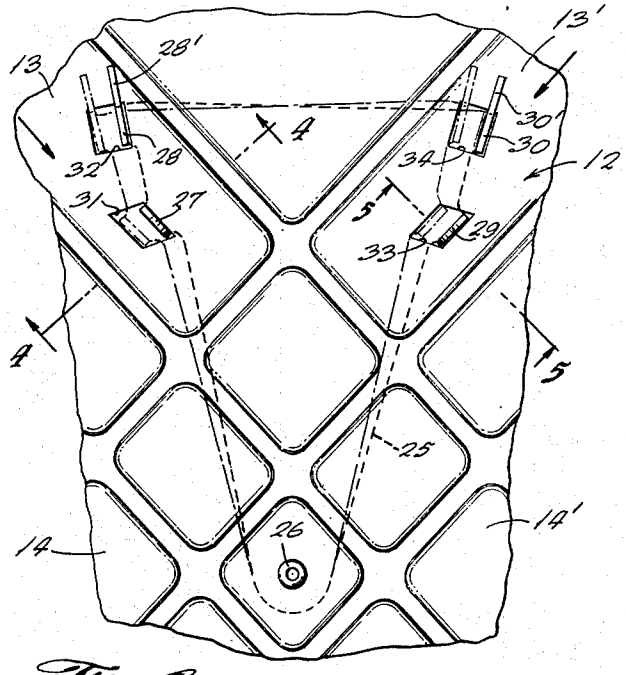


Fig. 2.

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TOY TRACK GAME

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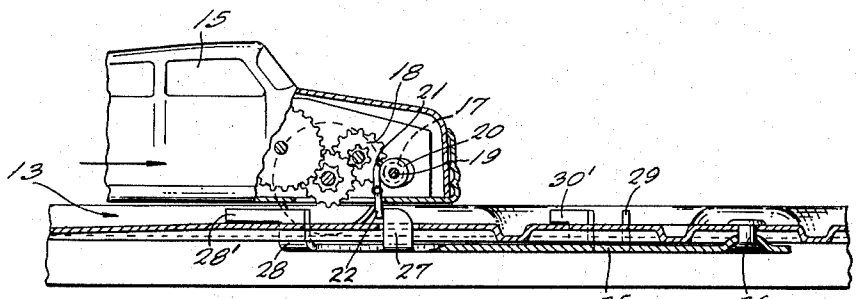


Fig. 3.

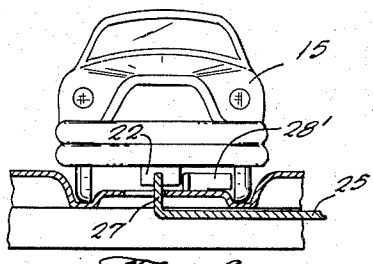


Fig. 4.

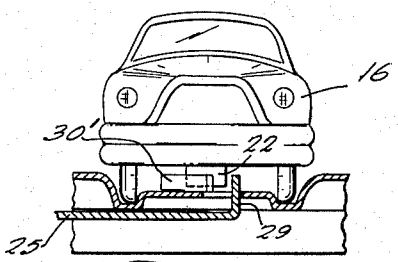


Fig. 5.

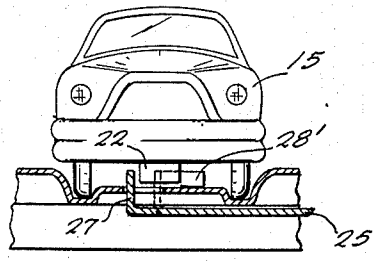


Fig. 7.

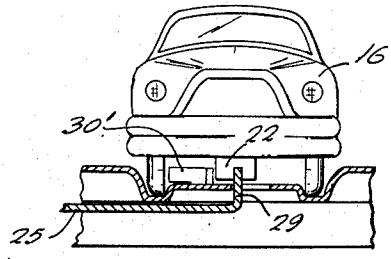


Fig. 6.

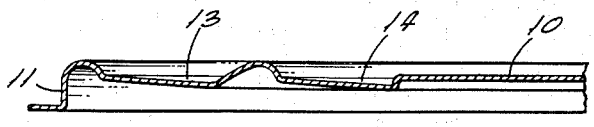


Fig. 8.

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2,636,114

TOY TRACK GAME

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Application March 9, 1951, Serial No. 214,780

7 Claims. (Cl. 246—113)

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This invention relates to a toy track game for guiding two or more self-propelled vehicles over an endless track system without mutual interference. More particularly, the invention relates to a toy track game in which two or more self-propelled vehicles traveling over an endless two-rail track system including a cross-over section are automatically and alternately stopped and released so as to avoid collisions or other interferences between the vehicles.

One object of the present invention is to provide a toy track game of the general type, above referred to, including novel and improved control means which control the aforementioned alternate stoppage and release of the vehicles in a very simple and yet efficient manner.

Another object of the invention is to provide a toy track game, the novel and improved control means of which comprise a single moving part secured to the track system so that the game can be inexpensively and conveniently manufactured.

Another object of the invention is a toy track game employing vehicles of standard design except for a single control member which serves to cooperate in the control of the alternate stoppage and release of the vehicles. The use of such vehicles further contributes to the simplicity of the manufacture of the game.

Still another object of the invention is to provide a toy track game which by reason of the intricate and surprising movements of the vehicles has a high play value and is capable of holding the attention of a playing child.

Another and further object, features and advantages of the invention will be pointed out hereinafter and set forth in the appended claims forming part of the application.

In the accompanying drawing a now preferred embodiment of the invention is shown by way of illustration and not by way of limitation.

In the drawing:

Fig. 1 is a plan view of a layout of a toy track game according to the invention.

Fig. 2 is a fragmentary view of Fig. 1 on an enlarged scale.

Fig. 3 is a section taken on line 3—3 of Fig. 1 on an enlarged scale.

Fig. 4 is a section taken on line 4—4 of Fig. 2, showing one vehicle in a position arrested by the control means.

Fig. 5 is a section taken on line 5—5 of Fig. 2, showing another vehicle just approaching the control means.

Fig. 6 shows the vehicle of Fig. 5 in a position arrested by the control means.

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Fig. 7 shows the vehicle of Fig. 4 just being released and ready for continued travel, and

Fig. 8 is a section taken on line 8—8 of Fig. 1 on an enlarged scale.

Referring first to Figs. 1, 2 and 8 in detail, the endless track system according to the invention is formed on a base plate 10 which is flanged at 11 to provide the necessary space underneath the base plate. The base plate can be made of any suitable material such as sheet metal. The track system is shown as being 8-shaped. However, various other layouts of an endless track system may also be provided. According to the exemplification of the track system, the same is formed by two symmetrical track portions joined by a cross-over section, generally designated by 12. Each track portion comprises two concentrically arranged track sections 13, 14 and 13' and 14' respectively. As will be noted, each end of both outer track sections 13 and 13', is joined to a respective end of each inner track section 14 and 14' so that two continuous runways are formed which can be conveniently traced on Fig. 1.

All the track sections are shown as two-rail tracks which can be formed in base plate 10 by any operation known for this purpose, for instance by dishing. As can best be seen on Fig. 8, the track sections are inwardly slanted to facilitate travel of the vehicles through the curves of the track system.

The vehicles are shown in form of self-propelled toy cars but it will be obvious that any other type of vehicle may also be employed. Two vehicles 15 and 16 are shown but as will be apparent from the subsequent description it is also possible to operate more than two vehicles.

Referring now to Fig. 3, vehicles 15 and 16 are of substantially conventional design, that is, each vehicle is equipped with a spring actuated motor which can be wound by a key. For the purpose of releasing and braking the car motor a control gear 17 is provided which is in mesh with one of the driving gears of the motor such as gear 18 and is seated on the same axle 19 with a brake drum 20. This drum is engageable with one arm of a two-arm lever 21 which is pivoted to the body of the car and the other arm 22 of which extends from the car body and between the two rails of the various track sections. As long as the aforementioned lever can depend freely, the car motor is released. However, when pressure is exerted against lever arm 22 in the direction of travel of the vehicle the upper arm of the lever is held against the brake drum 20 so that the car motor is stopped. The lever or at least the

arm 22 thereof has a certain transverse width the purpose of which will be apparent hereinafter.

The control means according to the invention comprise a single support member movably secured to base plate 10. This member is shown as a substantially triangularly shaped plate 25 pivoted by a pivot pin 26 to the underside of base plate 10. As can best be seen on Fig. 1, pin 26 is located substantially in the center of the entire track layout. Plate 25 supports thereon two pairs of symmetrical control elements 27, 28 and 29, 30, respectively. Elements 27 and 29 constitute stopping elements and elements 28 and 30 serve as switching elements. As can best be seen on Fig. 2, the stopping elements are disposed parallel to the direction of travel of the vehicle or transversely to the width of lever arm 22. The switching elements are disposed anteriorly to the stopping elements as seen in the direction of travel of the cars and at a right angle to the width of lever arm 22. Furthermore, the switching elements are laterally displaced relative to the stopping elements. All the four control elements protrude from plate 25 between the two rails of the respective track section. For this purpose slots 31 and 32 are provided for control elements 27 and 28 and slots 33 and 34 for control elements 29 and 30. As will be noted, both the switching elements 28 and 30 have an extension 28' and 30', respectively, disposed above the base plate for the purpose of preventing bending of base plate 25. The four slots are so slanted that the support member can perform a limited pivotal movement about its pivot pin 26.

As will be noted, the two pairs of track control elements are so placed that each pair is in a track section adjacent to the cross-over section 12 and in a different one of the aforementioned two continuous runways. Tracing of the two runways will show that there are various possible positions for the control elements. For instance, the control elements 29 and 30 may be in the track section in which they are shown and the control elements 27 and 28 may be placed in the track section indicated at 14''. It is only essential that the control elements are so arranged that vehicles may travel without interference over the two runways provided, of course, the vehicles are alternately stopped and released as will be hereinafter explained. Finally, it is not necessary that the control elements are positioned adjacent to the cross-over section, but such position will be generally preferable from a manufacturing viewpoint.

The operation of a toy track game, as hereinbefore described, is as follows:

Let it be assumed that the two cars 15 and 16 are wound and placed ready for running in the directions indicated by the arrows upon the two runways and are in the positions shown in Fig. 1. Let it be further assumed that the four control elements occupy the positions shown in Fig. 2 in full lines. Then, arm 22 of the control lever 21 of car 15 is in engagement with stopping element 27 so that car 15 is arrested as is shown in Fig. 4. When now car 16 approaches the control elements 29 and 30, its arm 22 will first engage the slanted switching element 30. As a result, arm 22 exerts a camming action upon the switching element, more particularly upon the section 39' thereof, which camming action pivots plate 25 so that all the track control elements are moved into the respective positions indicated in Fig. 2 in dotted lines. Consequently, switching element 30 now clears the path of arm 22 so that car 16 can continue its travel until its arm 22 reaches stopping element 29. Fig. 5 shows the position of car 16 in which arm 22 just has reached section 39' of switching element 30. As soon as arm 22 of car 16 reaches stopping element 29 the car is arrested since the stopping element 29 is now moved into a position facing arm 22. Fig. 6 illustrates the arrested position of car 16. It will be noted that Fig. 6 shows the same position of the control elements in relation to car 16 as does Fig. 4 in relation to car 15. The pivotal movement of plate 25 also places stopping element 27 into a position in which it clears arm 22 of car 15 while the switching element 28 is moved into a position ready for camming. Fig. 7 illustrates the position in which stopping element 27 is moved out of the way of arm 22 of car 15. This car is now released and it will travel over cross-over section 12, inner track section 14' and outer track section 13 until it again reaches the stopping position in which it is shown on Fig. 1. As soon as car 15 reaches this position, arm 22 of its control lever pivots support plate 25 back into the position in which all the four track control elements occupy the positions shown in Fig. 2 in full lines. Consequently, car 16 is now released and the previously explained cycle is repeated.

It will be apparent from the previous description that more than two cars or other self-propelled vehicles can be controlled by placing the same at properly selected intervals upon the track system. Furthermore, it is also possible to provide a second set of four control elements.

While the invention has been described in detail with respect to a certain now preferred example and embodiment of the invention it will be understood by those skilled in the art after understanding the invention, that various changes and modifications may be made without departing from the spirit and scope of the invention, and it is intended, therefore, to cover all such changes and modifications in the appended claims.

What is claimed as new and desired to be secured by Letters Patent is:

1. In a toy track game of the type in which at least two self-propelled vehicles are arranged to travel over an endless two-rail track system including a cross-over section, each of said vehicles having a control element depending from the vehicle body between the two rails of the track system, and in which control means alternately stop and release the said vehicles, the provision of improved control means comprising two pairs of control elements, one element of each pair constituting a stopping element and the other a switching element, and a supporting member for the said four elements pivotally mounted on said track system substantially level therewith and in a position in which the two elements of each pair protrude between the two rails of different branches of the endless track system, said track control elements being arranged on the support member in relative positions in which each switching element is anterior in the direction of travel of the vehicles and in which always the switching element of one pair is in a position engageable with the vehicle control element and the stopping element of the said pair in a release position and the switching element of the other pair in a non-engageable position and the stopping element of the said pair in a stopping position, whereby a moving vehicle approaching one of said pairs of control

elements and engaging the respective switching element moves the support member into a position in which the stopping element of the same pair is placed in its stopping position, and the switching element of the other pair in its engageable position and the stopping element of the latter pair in its release position, thus arresting the said approaching vehicle and releasing a vehicle stopped by the stopping element of the respective pair.

2. A toy track game as defined in claim 1, wherein said track system is in form of two curved open track portions, each of said track portions comprising an inner and an outer track section, each end of the inner sections being joined by said cross-over section with the respective end of an outer section, thereby forming two continuous runways each constituted by the inner section of one track portion and the outer section of the other track portion.

3. A toy track game as defined in claim 2, wherein the said endless track system is substantially 8-shaped, the outer and inner sections of the two track portions being substantially concentrically arranged, and wherein one pair of said track control elements is disposed in one of said continuous runways and the second pair in the other runway.

4. A toy track game as defined in claim 3, wherein each pair of said control elements is disposed in an outer track section adjacent to said cross-over section, the said cross-over section joining the two portions of the 8-shaped track system, and wherein said support member is pivoted to the center of the 8-shaped system.

5. A toy track game as defined in claim 1, wherein said support member is pivoted to the

track system, and wherein the switching element of each pair is slanted relative to the direction of travel of the vehicle and disposed in a position in which the control element of a moving vehicle slidably engages the respective switching element and pivots the support member into a position in which the engaged switching element clears the path of the respective vehicle control element and in which the other track control elements are moved from one of the aforesaid respective positions into the other aforesaid respective positions, whereby the approaching vehicle is arrested and the other vehicle is released.

6. A toy track game as defined in claim 5, wherein each switching element is laterally displaced relative to the respective stopping element as seen in the direction of the vehicles.

7. A toy track game as defined in claim 1, wherein said track system is formed on a base plate, and wherein said support member is plate-shaped and pivoted to the underside of said base plate, the said base plate having slots therethrough from which said track control elements protrude between the two rails of the respective tracks, the edges of the base plate defining the said slots limiting the pivotal movements of the support member.

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