March 9, 1926. 1,576,140

W. H. SCHNEIDER

TOY TRACK

Filed Sept. 11, 1925 3 Sheets-Sheet 1

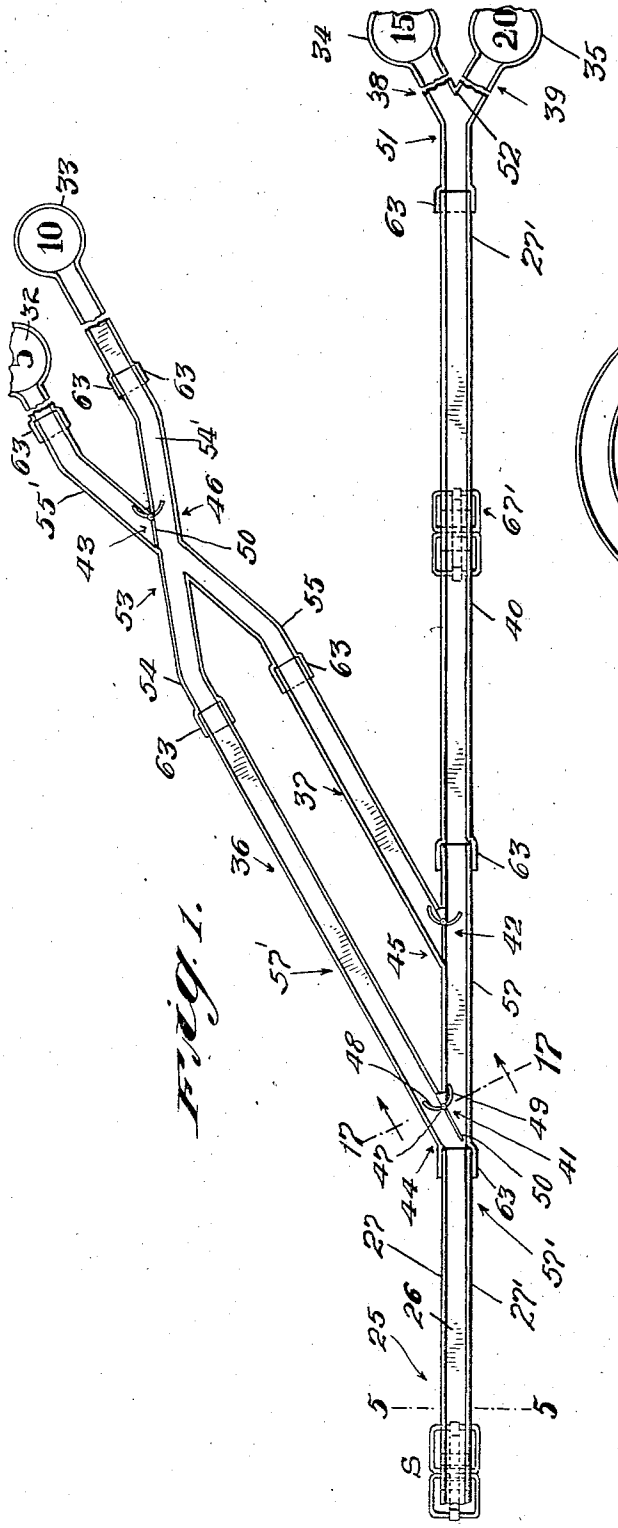


Fig. 1.

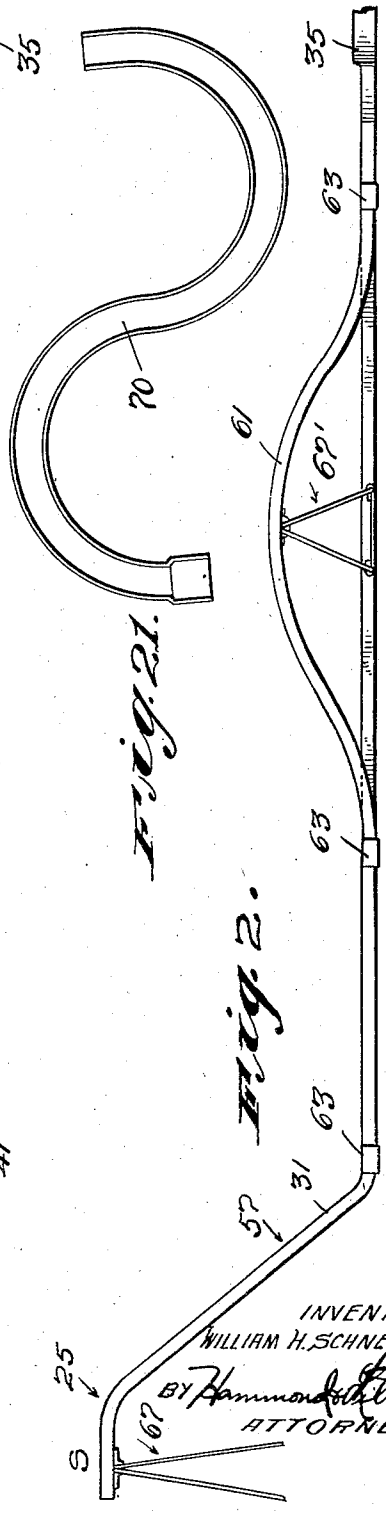


Fig. 2.

Fig. 2.

INVENTOR
WILLIAM H. SCHNEIDER
BY Hammond & Littell
ATTORNEYS

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W. H. SCHNEIDER

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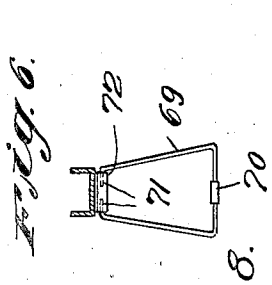


Fig. 6.

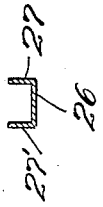


Fig. 5.



Fig. 3.

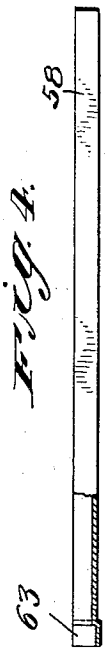


Fig. 4.

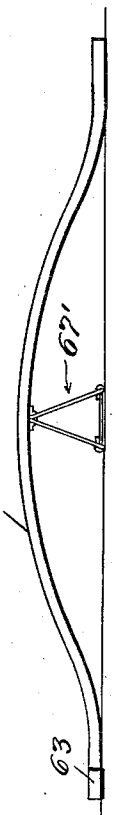


Fig. 8.

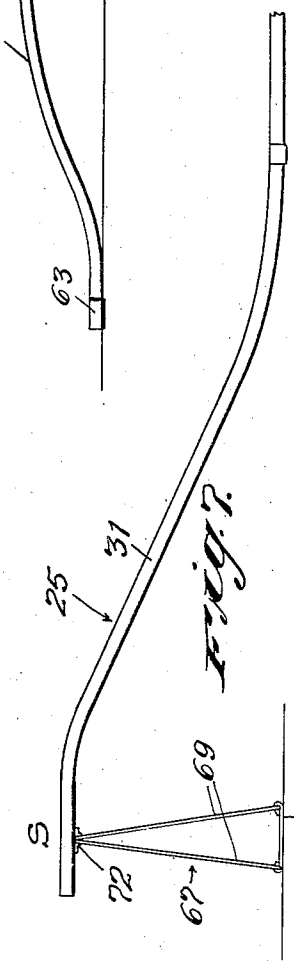


Fig. 7.

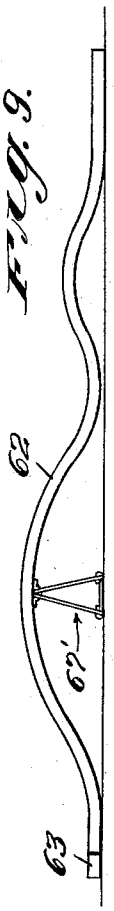


Fig. 9.

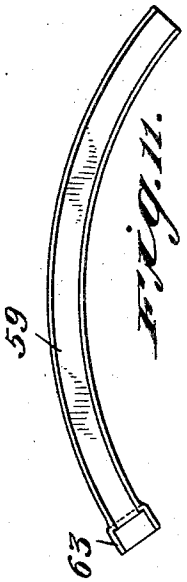


Fig. 11.

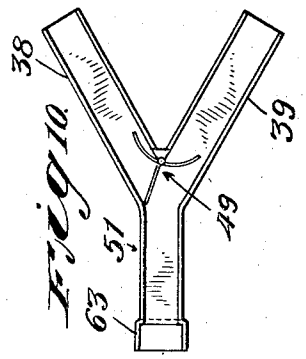


Fig. 10.

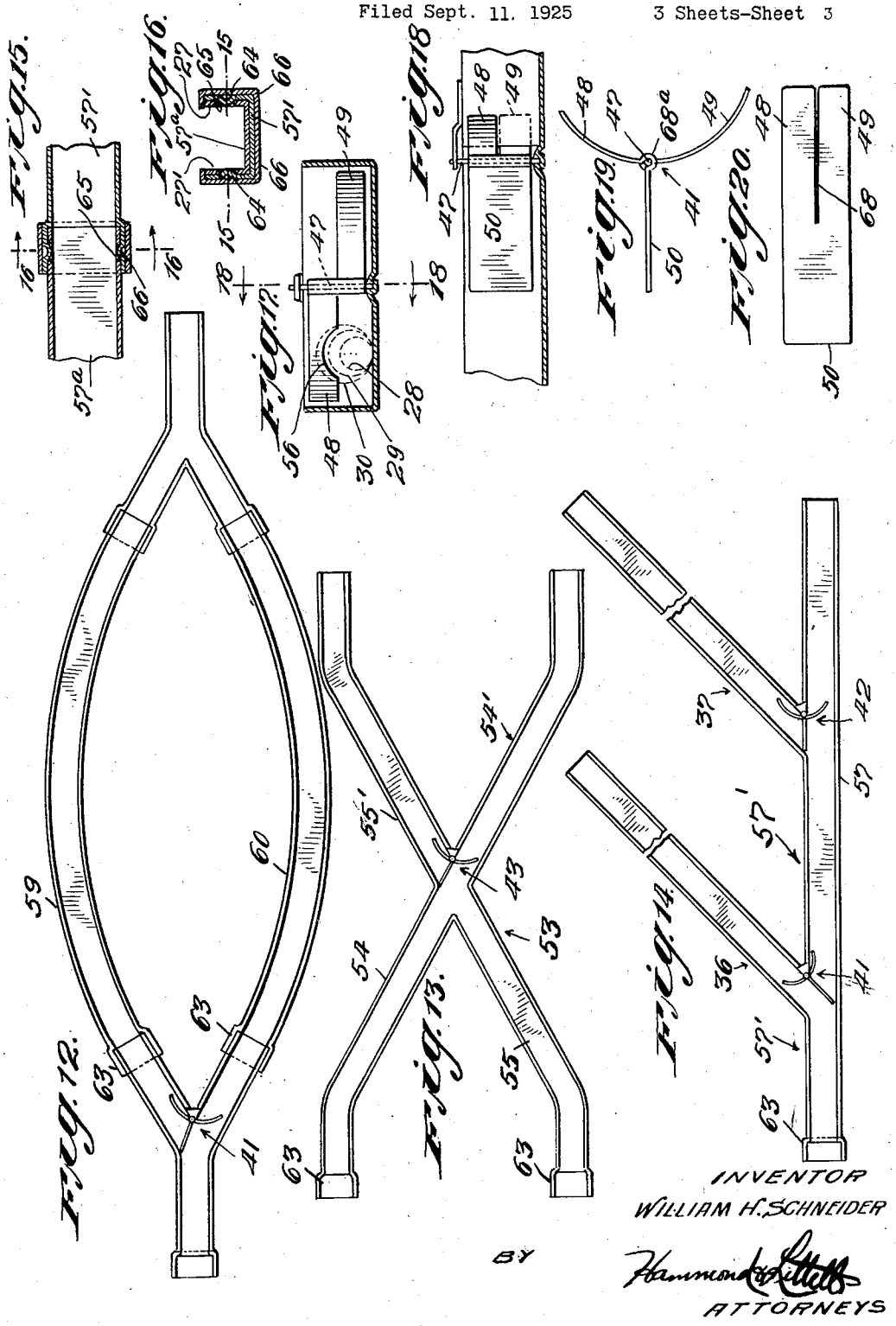
INVENTOR
WILLIAM H. SCHNEIDER
BY Hammond & Littell
ATTORNEYS

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W. H. SCHNEIDER

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INVENTOR
WILLIAM H. SCHNEIDER
BY
Hammond & Littell
ATTORNEYS

Patented Mar. 9, 1926. 1,576,140

UNITED STATES PATENT OFFICE.

WILLIAM H. SCHNEIDER, OF FREEPORT, NEW YORK.

TOY TRACK.

Application filed September 11, 1925. Serial No. 55,665.

To all whom it may concern:

Be it known that I, WILLIAM H. SCHNEIDER, a citizen of the United States, residing in Freeport, county of Nassau, State of New York, have invented certain new and useful Improvements in Toy Tracks, of which the following is a specification.

This invention relates to a toy track system which may be used for games and is herein illustrated as composed of a single track, which is channel shaped or U-shaped and has several branches to convey individual objects such as balls or marbles to various destinations or terminals, which may be in the form of receptacles having predetermined premiums to be awarded the various players.

A feature of the invention resides in the provision of means which causes the marbles, started individually from a common source, to take different courses to thus conduct them to the various receptacles. To this end switches are provided at the junctions of the various branches in the track system. Each switch is provided with a gate which closes one of the branches to conduct the marble down the open branch. The switch is mounted on a vertical pivot and includes two switch throwing arms extending laterally therefrom into the branches, so that as the marble passes the switch one of the arms is engaged thereby to throw said switch to close the branch being traversed by the marble and to open the other branch. As a result the next succeeding marble takes the course down the other branch which was previously closed. By further providing sub-branches extending from the main branches and providing switches at the junction of the sub-branches, it is practically impossible to predetermine the destination of any marble when started from the source, the course of each marble being dependent upon the setting of the switches and the setting of each switch having been brought about by the marble which has previously passed it.

To vary the paths of the marbles even to a greater extent, marbles of various sizes may be employed and the switch throwing arms on some of the switches may be placed at different heights to enable some of the marbles to pass beneath the arms so as not to shift the switch: the other marbles of larger diameter engaging said arm to throw the switch.

Another feature of the invention relates to the interchangeable sectional construction of the track system which enables it to be readily set up in any one of a large number of different combinations or be disassembled to be compacted in a suitable box or container when not in use. To this end the track is composed of sections detachably connected to each other. The sections may have various shapes such as straight, laterally curved, and vertically curved. Junction sections are also provided such as cross-overs S sections, Y sections and double spur or ladder sections. All of these sections are provided at one end with means to connect them to the end of any other section. The junction sections are provided with switches which are operated by the marbles rolling towards the switch from the front end thereof. The connecting means of said sections are so located with reference to the switches that it is possible to assemble the junction sections only one way, so as to always have the switches placed correctly in the track system, that is to say that they may be operated by the marbles.

Still another feature relates to spring detent means to hold the track sections together. Means is also provided to lock the detent means after the track sections have been assembled so as to prevent accidental disconnection.

To keep the cost of manufacture of the device at a minimum, the various track sections are formed of sheet metal and suitable supporting standards are formed of wire. The wire supports are detachable from the track sections and are foldable to occupy a minimum of space when not in use.

Figure 1 is a top plan of one of the many possible arrangements of the railway track system showing the various branches, and the switches at the junctions which guide the balls or marbles down the various branches to receptacles at the end of the said branches.

Figure 2 is a side elevation of the arrangement shown in Figure 1.

Figure 3 is a view of a straight track section showing one end enlarged to receive the end of the next section.

Figure 4 is a front view of the track section shown in Figure 3.

Figure 5 is a cross-section of the track section taken on the line 5—5 of Figure 1.

Figure 6 is an end view showing the detachable bracket supporting the track.

Figure 7 is a front view of the inclined portion of the track and the supporting bracket.

Figure 8 is a front view of an upwardly curved section of the track and a supporting bracket thereunder.

Figure 9 is a view similar to Figure 8 but shows a plurality of curves in the track section.

Figure 10 is a top plan view of a Y section of the track having a switch at the junction.

Figure 11 is a top plan view of a track section which is curved laterally.

Figure 12 is a top plan view showing part of the track assembled and including two Y sections and two laterally curved sections.

Figure 13 is a top plan view of a cross-over section.

Figure 14 is a top plan view of a double spur or ladder section.

Figure 15 is a sectional top plan view taken on the line 15—15 of Figure 16 and shows the detent means for holding the track sections together and the band to lock the detent means.

Figure 16 is a vertical section taken on the line 16—16 of Figure 15.

Figure 17 is a vertical cross-section of the track at the line 17—17 of Figure 1 showing the switch at one of the junctions.

Figure 18 is a vertical section taken on the line 18—18 of Figure 17.

Figure 19 is a top plan view of one of the switches.

Figure 20 is a developed view of that part of the switch, which forms the gate and the switch throwing arms.

Figure 21 is a plan view of an S section.

In the accompanying drawings:

The track system may include at its source S a track section 25, Figures 1 and 2, which is channel shaped as indicated in Figure 5 to include a floor 26 and side wall 27 and 27′ extending upwardly and at right angles therefrom. Any one of the balls or marbles 28, 29 and 30, Figure 17, may be inserted in the channel track 25 at the source S and rolled down an incline 31 where the marble attains sufficient momentum to carry it to any one of a series of destinations or receptacles 32, 33, 34 or 35 at the end of the branches 36, 37, 38, and 39 deviating from a main portion 40 of the track. These receptacles may bear designations indicating premiums to be awarded the players.

To make it impossible for a player to select any predetermined destination or in other words make uncertain the destination of the marble, switches 41, 42, and 43 may be provided at junctions 44, 45, and 46 respectively. Each switch is mounted on a vertical axis or pin 47 (Figures 1, 17 and 18) suitably secured, and the switch may be swung about its axis by any one of two switch throwing arms 48 and 49 to shift a gate 50 of said switch: said switch normally closing one of the branches at its sides. The arms 48 and 49 extend from the axis 47 into branches at either side: those of the switch 41 extend into the branches 36, 37 and 40 respectively. When a marble rolls down the incline portion 31 of the track section 25 it is guided into the branch 36 by the gate 50 of the switch. It also strikes the arm 48 so as to throw the switch about the axis to close the branch 36 and open the portion 40 of the track. The next time the marble, which may be the same one or any one of the others, is started from the source S it rolls down the portion 40 of the track and past the switches 41 and 42 throwing them to open both branches 36 and 37, The marble continues down the track portion 40 until it meets a Y section 51 where it may pass down the branch 38 or the branch 39 to the receptacles 34 or 35. The width of the track is greater than the diameter of the marble and consequently if the marble rolls down close to the wall 27′ said marble strikes slightly to one side of the apex 52 of the Y section 51 and is guided down the branch 39 of said Y section to the receptacle 35 where the player scores as many points as may be indicated in said receptacle. Similarly, it will be understood, that if the marble passes down close to the wall 27 it is conducted down the branch 38 to the receptacle 34. It will be understood that if desired a switch 49 may be provided in the Y section 51 as shown in Figure 10.

To assist in changing the course to be taken by the marble, between the junctions 44 and 45 and the receptacles 32 and 33, there is provided a cross-over section or X section 53, the junction 46 of which is formed by two tracks 54 and 55 forming continuations of the branches 36 and 37 respectively. The switch 43 is located at the junction 46 and consequently when the marble passes down the branch 36 or the branch 37 it is guided by the gate 50, of the switch 43, down the track 54′, which is a continuation of the track 54, the marble being thus conducted to the receptacle 33. In passing the switch 43 the marble closes the track 54′ and opens the track 55′ which is a continuation of the track 55 so that the next marble finds its way down the track 55′ to the receptacle 32.

To further vary the course of the marbles switch throwing arm 48 may be arranged sufficiently high on the axis 47, and may be provided with a cut-out 56, Figure 17, to enable the smaller balls 28 and 29 to pass beneath said arm to leave the switch unshifted. It will be understood that the cut-out 56 on the other arm 49 need not be provided in some instances, thus permitting only the smallest marble 28 to pass by freely,

It will further be understood that in some instances the arm 48 may be low and the arm 49 may be high and have a cut-out 56, or both arms may be high to enable the free passage of some of the marbles. Thus it will be understood that the course of the marble is partly determined by the size of the previously rolled marble, the position of the switches and the vertical location of the switch throwing arms, thereby creating considerable excitement and interest in the game on account of all the unknown factors.

To enable the track system to be readily assembled for use and to be disassembled to be stored to occupy a minimum of space, it is composed of detachable and interchangeable sections. One section 25 may include the source S and the incline 31. Another section 57′ may include a straight portion 57, Figures 1 and 14, and the branches 36 and 37. Another section may constitute the cross-over 53, Figures 1 and 13. Still other sections may include the Y section 51, Figure 10, the straight sections 58, Figures 3 and 4, laterally curved sections 59 and 60, Figures 11 and 12, vertically curved sections 61 and 62, Figures 2, 8 and 9, and S sections 70, Fig. 21.

To enable the various sections to be readily assembled each is provided with an enlargement 63 at one end to embrace, or into which fits, the end of the cooperating section. The enlargements 63 are definitely located with reference to the switch of each section having a switch thereon, so that it is impossible to assemble any section with the switch extending in the wrong direction. This is an important feature since the game device is generally used and assembled by children and the average child would not know the trouble in case a section were assembled with the switch extending in the wrong direction, in which case the device would not operate. Without this provision to guard against incorrect assembling of the device, even one who may be able to remedy the situation might set up the whole device and then find out that the switches extend in the wrong direction. This would necessitate disassembling of the device in order to correctly position the wrongly placed track section or sections.

To securely hold the track sections together there is provided detent means which may include beads 64, Figure 16, pressed outwardly from the walls 27 and 27′ of one track section, for example section 57ª. These beads 64 fit into perforations 65 in the wall of the enlargement 63 of any other track section, as for example the section 57′. The side walls of the sections 57ª and 57′ are sufficiently resilient to enable the one to be slipped into the other by springing and then snap into place.

To guard against accidental detachability of the sections from each other, there may be provided a band 66 to fit around each connection to embrace the enlargement 63 thus re-enforcing said enlargement and keeping it from spreading and consequently maintaining the connection between the track sections. When it is desired to break the connection the band 66 may be slid along the track and free of the enlargement 63. The two sections 57ª and 57′ may then be separated.

The various track sections are made of sheet metal to minimize the cost of manufacture. To this end each switch is also formed of a single piece of sheet metal, the blank of which is as indicated in Figure 20, and which is slit at 68 to form the two arms 48 and 49. The arms are bent in opposite directions to form eyes 68ª to receive the pin 47.

Supporting standards 67 and 67′ are provided for the track sections 25 and 61 respectively. Each of these standards includes two wire open loops 69 pivoted on a sheet metal base 70 and having at their upper extremities inturned ends 71, Figure 6, to engage in an eye formed by a bracket 72 secured to the track section. To detach the standard it is merely necessary to spring the upright arms of the loop 69 away from each other until the ends 71 are clear of the bracket 72. The loops 69 may then be swung downwardly to flatten out the standard so that it may occupy a minimum of space when packed in a box with the track section.

While I have illustrated and described various preferred forms of embodiment of my invention, it will be understood that many modifications and changes may be made therein and different parts added without departing from the spirit of the invention, or the scope of the appended claims.

Claims:

1. A toy track system including a single channel track, said track being composed of successive sections detachably connected to each other, each section having an enlarged end to fit around the end of the next succeeding section to form a connection, the corresponding inner surfaces of both sections being flush, spring detent means to secure the sections together, and a band to embrace the detent means to prevent springing thereof to avoid accidental disconnection of said sections.

2. A toy track system including a single track having a U-shaped cross-section to guide an object in transit, a Y in said track, two branches extending from the Y, and a switch pivoted at said Y, said switch including an arm to form a gate to close one branch of the Y to conduct the object down the other branch, and two switch operating arms, one extending into each branch to be

engaged by the object as it passes to operate the switch to close the branch being traversed by the object and open the other branch.

3. A toy track system including a track, a junction in said track, two branches extending from said junction, and a switch pivoted at said junction said switch being shiftable and effective, depending upon its position, to conduct an object in transit on said track down either branch, and operable by the object to set the switch so that the next succeeding object is conducted down the other branch.

4. A toy track system including a single channel track, a junction in said track, branches extending from said junction, and a switch at said junction, a vertical pivot about which the switch may swing, arms extending from opposite sides of the switch, and a gate to close said branches one at a time to cause a ball in transit over said track to roll down the open branch, said arms to be engaged by the ball to throw the switch, one of said arms being located sufficiently high to permit balls of smaller diameter to pass beneath it without throwing the switch.

5. A toy game including a track including a main portion, branches extending from said portion, switches at the junctions formed by the main portion and the branches, terminal receptacles at the end of each branch, the main portion being inclined downwardly so that a marble or other ball-like object may roll down said incline to attain sufficient momentum to carry it to any one of the receptacles, and means on said switches to be engaged by the rolling object to shift the switch to automatically set it for the next succeeding object.

6. A toy track system composed of detachable sections including a section having a plurality of branches, a switch at the junction of the branches of the branch section, each section having means at one end to engage the end of the next succeeding section, said means being so located on that end of section with respect to the switch thereon that it can only be connected with its cooperative section to always have the switch operative.

7. In a toy track system, a plurality of branched channels, a switch for closing said branches, including an integral gate section and a pair of operating arms, said integral arms surrounding the pivot for swinging said switch.

8. A toy track system comprising a plurality of detachable sections of U-shaped channel track, including an inclined section, branched, cross-over and Y-sections, each branch terminating in a receptacle, said track adapted to conduct a ball or the like from the top of the inclined section to one of said terminal receptacles, said branched, Y and cross-over section acting to vary the path of said ball.

9. A toy track system composed of detachable sections including a section having a plurality of branches, a switch pivoted at the junction of the branches of the branch section, means projecting from said switch into the open branch of said section in the path of an article passing into said branch whereby the passage of an article throws the switch, each section having means at one end to engage the end of the next succeeding section.

In testimony whereof I have affixed my signature to this specification.

WILLIAM H. SCHNEIDER.