

[54] HILL RACE TRACK

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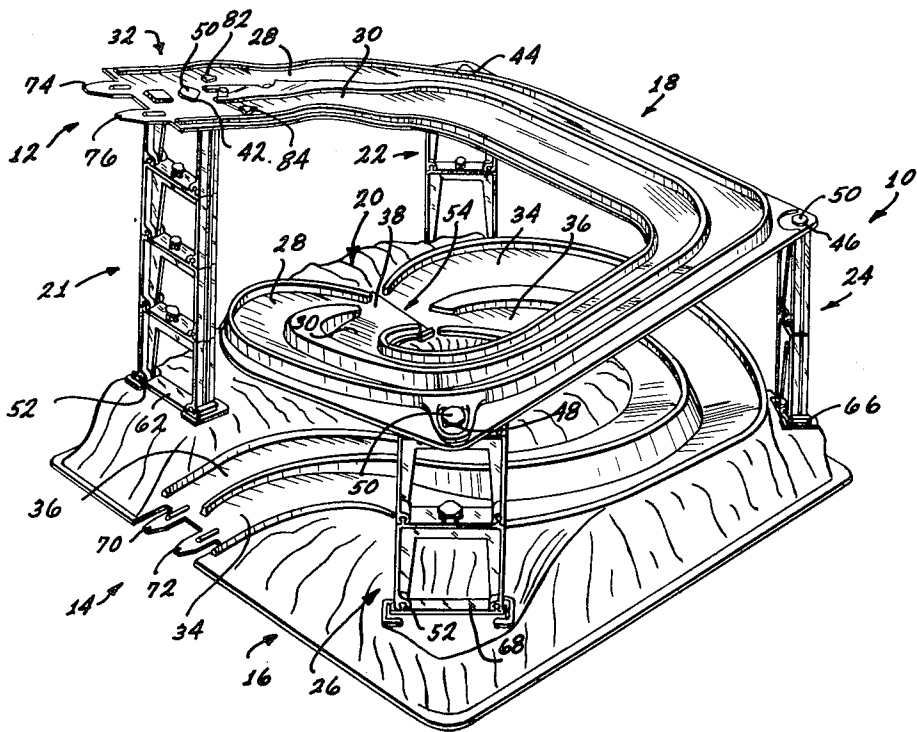
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[57] ABSTRACT

A roadway for toy vehicles which provides a tall, winding, mountain-like road with two parallel tracks, which can be stored in a box of limited height, comprising a rigid lower member forming lower portions of the tracks and a flexible upper member forming upper portions of the tracks. The upper member can be placed in a substantially flat configuration for storage, or can be placed in a largely helical configuration and supported on top of the lower member to form the upper portion of the roadway. A starting gate at the upper end of the roadway can be used to start a pair of vehicles, or can be swung out of the way to allow moving vehicles received from previous track regions to move into the mountain-like roadway without hindrance.

5 Claims, 7 Drawing Figures



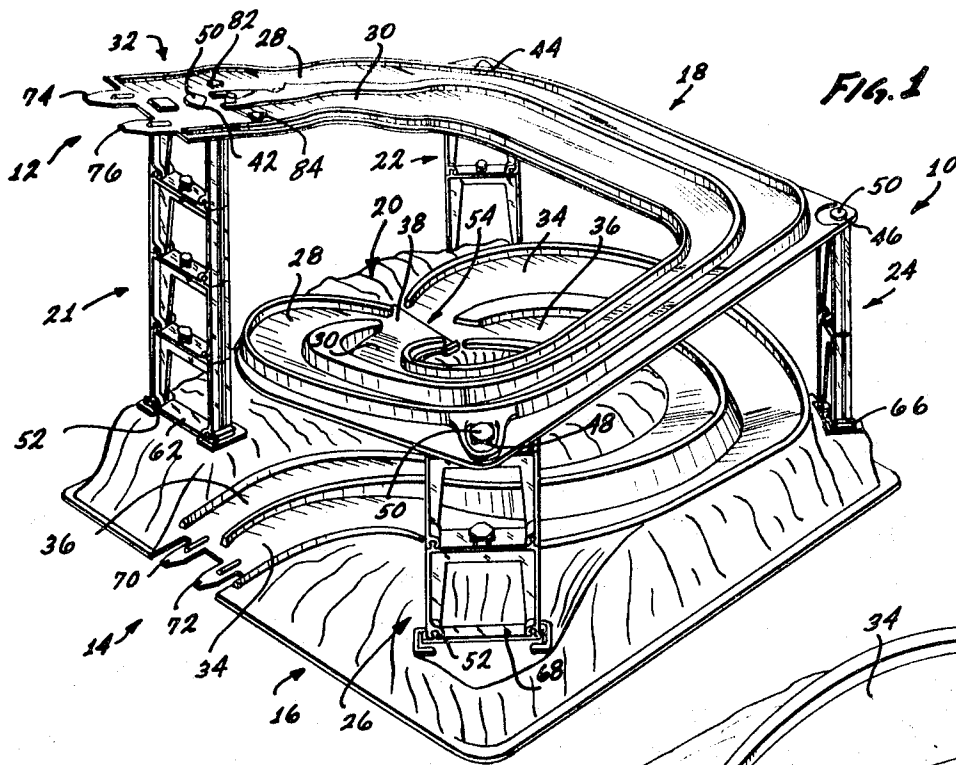


FIG. 2

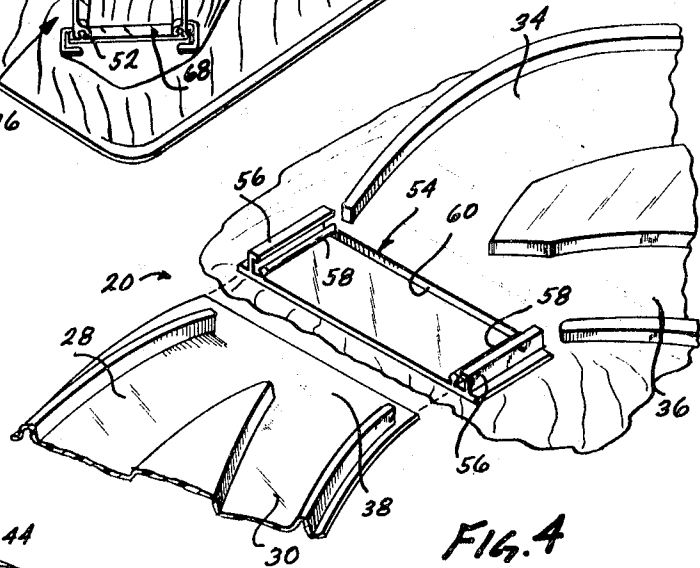
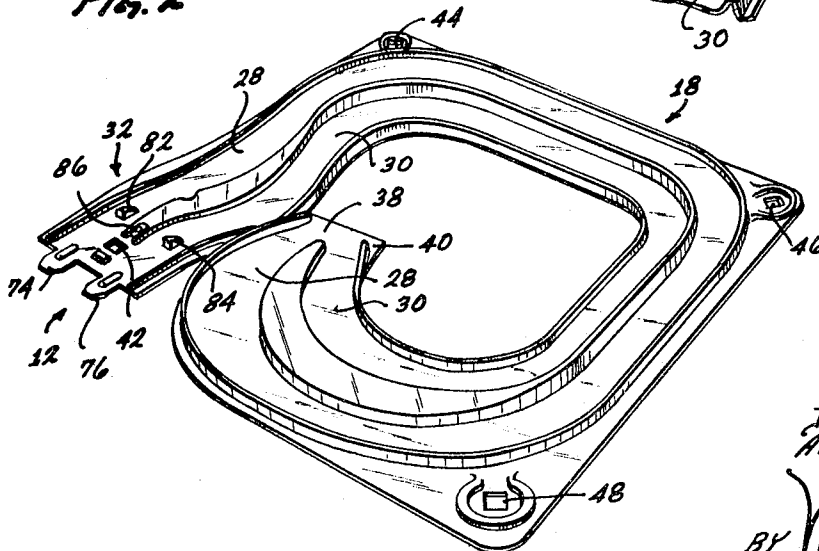


FIG. 4

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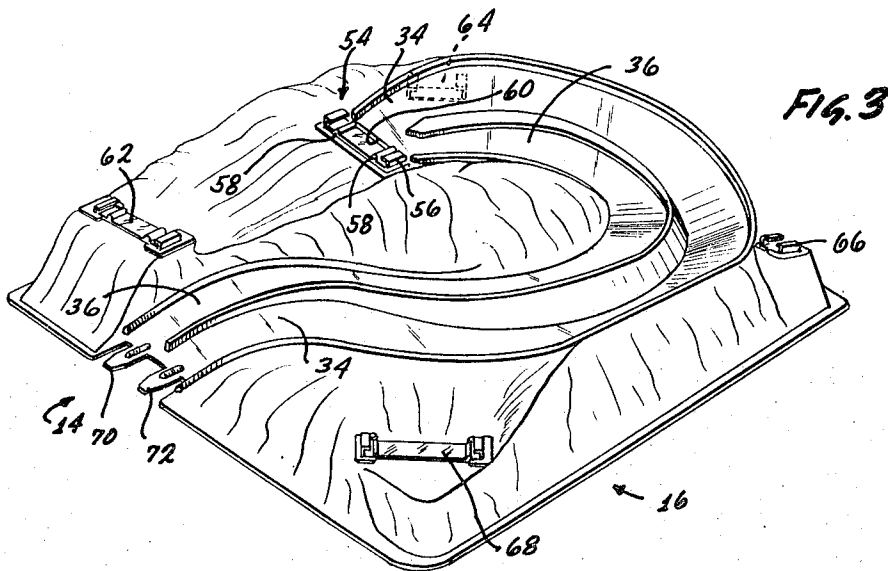


FIG. 5

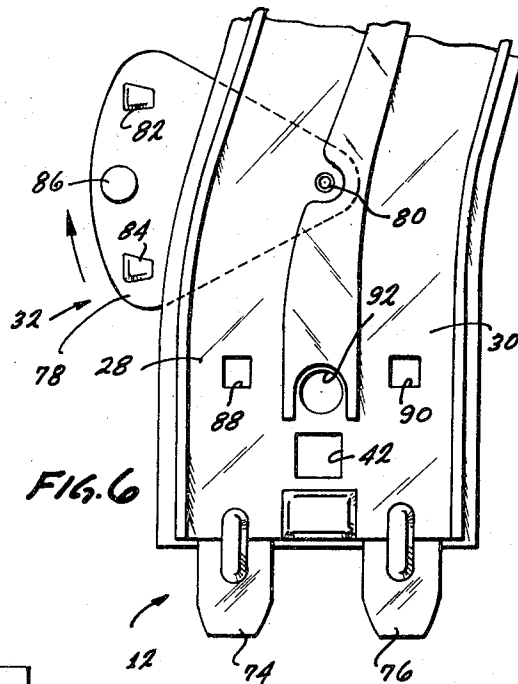
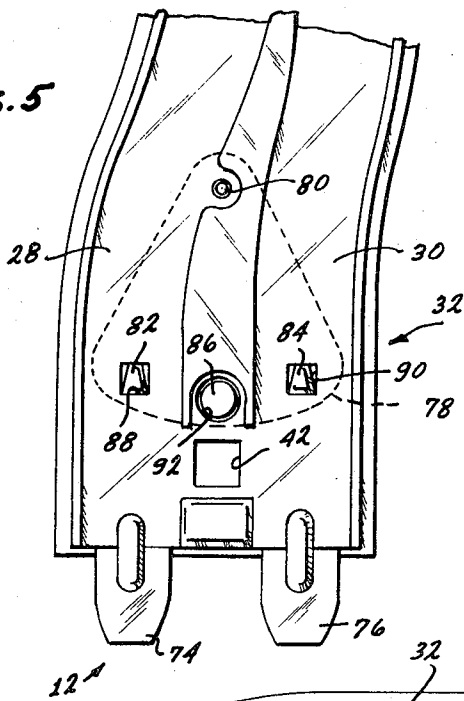


FIG. 6

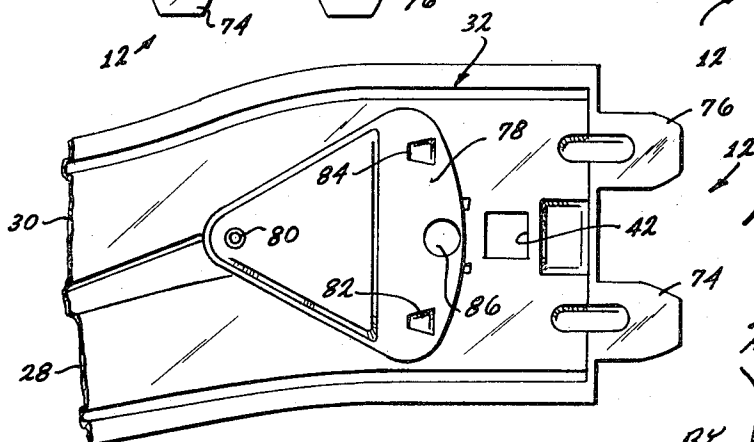


FIG. 7

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HILL RACE TRACK

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to toy vehicle apparatus.

2. Description of the Prior Art

A popular type of toy is an unpowered vehicle which can move down a long incline track to gain substantial speed for moving along the rest of the track layout. In order to impart substantial speed to the vehicles, the inclined roadway portion must provide a large descent. However, the packaging of a roadway with a tall descending portion can be difficult, inasmuch as bulky packages can hamper distribution and excessively raise the retail price of the roadway. One type of apparatus which allows the rapid setting up of a tall descending roadway, but which also can be compactly packaged, includes flexible tracks and a clamp for holding one end of the track on a table top or the like. While such apparatus allows for the economical production and marketing of roadways with large descending portions, the long, straight descending portion can be relatively uninteresting. Furthermore, the roadway can be set up only in a long room because the descending track portion extends straight along a substantial distance until it reaches the floor area.

OBJECTS AND SUMMARY OF THE INVENTION

An object of the present invention is to provide a roadway with a tall descending portion, which takes up a minimum of floor space, yet which can be stored in a relatively compact package.

Another object is to provide an economical and highly interesting roadway for racing a pair of vehicles.

In accordance with the present invention, an interesting and easily stored roadway for toy vehicles is provided which allows the vehicles to descend a substantial height to gain substantial speed. The roadway comprises a rigid lower roadway member forming a spiralling lower track section, and an upper roadway member which can form a spiralling upper track section that connects with the lower track section. The upper roadway member is flexible for placing in a storage configuration wherein all track portions lie in substantially the same plane, and a use position wherein the member is held in substantially a helix over the lower roadway member, by several supports.

In one embodiment of the invention, the upper and lower roadway members have a pair of parallel tracks for racing two vehicles down the roadway. A crossover is formed where the members join, so that a vehicle started on an inner spiralling track moves to an outer spiralling track. This allows both vehicles to traverse about the same length of track so that neither vehicle has an advantage in racing toward the bottom of the roadway. A starting gate is provided at the upper end of the roadway, the gate including a member for starting a pair of vehicles simultaneously. The member is mounted so it can be pivoted out of the way in those cases where the upper end of the winding roadway is to receive moving vehicles without impeding them.

The novel features of the invention are set forth with particularity in the appended claims. The invention will best be understood from the following description when read in conjunction with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of an assembled roadway constructed in accordance with the invention;

FIG. 2 is a perspective view of the upper roadway member of the roadway apparatus of FIG. 1, in a flat, storage configuration;

FIG. 3 is a perspective view of the lower roadway member of the roadway apparatus of FIG. 1;

FIG. 4 is a partial perspective view of the crossover region in the roadway of FIG. 1;

FIG. 5 is a partial plan view of the starting area of the roadway of FIG. 1 in an orientation for starting vehicles;

FIG. 6 is a view similar to that of FIG. 5, but with the starting apparatus moved out of the way; and

FIG. 7 is a bottom view of the apparatus of FIG. 5.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

FIG. 1 illustrates an embodiment of the invention in an assembled configuration at 10 for guiding toy vehicles along a roadway that winds downwardly along a tall descent, so that vehicles started at the starting region 12 gain considerable speed by the time they leave the exit region 14. The roadway is composed of a rigid lower roadway member 16 and a flexible upper roadway member 18, which are connected in series at 20 to form the complete roadway.

The upper roadway member 18 is held in place above the lower roadway member by four support members 20, 22, 24 and 26. The roadway includes two tracks which, in the upper roadway member are formed by track sections 28, 30, and in the lower roadway member are formed by track sections 34, 36. The tracks extend substantially parallel to each other and are laterally spaced so that they are always approximately at the same level. A starting gate 32 is provided at the starting region or upper end 12 of the roadway, so that a pair of vehicles can be released at the same time to traverse the entire roadway in a race toward the bottom. A track section with a finish gate or the like can be connected to the exit region or bottom end 14 to determine which of the vehicles is fastest.

When the roadway apparatus is in the assembled configuration of FIG. 1, it has a large height that allows vehicles to gain considerable speed. However, the roadway can be disassembled into a substantially smaller height. Such disassembly is accomplished by unfastening the four support members from the upper and lower roadway members and allowing the upper roadway member 18 to assume the substantially flat configuration of FIG. 2. The entire apparatus, including the lower roadway member 16 shown in FIG. 3, the upper member 18, and the four support members, can be packed in a box which is only slightly higher than the lower roadway member 16. This member 16 has a height only about one-third that of the assembled roadway apparatus, so that the packaged roadway can be stored and shipped at minimum expense. The lower roadway member has a substantially four-sided perimeter for easy storage in a rectangular box, and the upper roadway member has a perimeter substantially matching that of the lower member so that it also can be easily stored in the box.

If two vehicles which were started on the outer and inner track sections 28, 30 of the upper roadway member were to continue along these tracks all the way to the bottom at 14, the vehicle on the inner track would usually win because it would have a smaller track length to traverse. In order to equalize the track lengths, a crossover is provided at 20 wherein vehicles on the outer track section 28 of the upper roadway member switch over to the inner track section 36 of the lower roadway member, while vehicles on the inner track section 30 of the upper member cross over to the outer track section 34 of the lower member. As shown in FIG. 4, the upper roadway member has a lower end constructed so that vehicles leaving the outer track section 28 enter the inner track section 36 of the lower member, while vehicles leaving the inner track section 30 are directed into the outer track section 34 of the lower member. A substantially flat roadway surface 38 connects all four track sections at the crossover region. Thus, if two vehicles on tracks 38, 30 should reach the crossover at the same time, they would crash into one another. However, this is unlikely to occur if two vehicles of about the same speed are started at the starting gate 32, since the vehicle on the inner track section 30 has a shorter path to the crossover and will pass through before the vehicle on the other track section 28. The use of a crossover region where all four tracks are at the same plane allows for a very simple construction of the roadway.

Both the upper and lower roadway members 16, 18 may be constructed by vacuum forming of a thin plastic sheet. As

shown in FIG. 2, the spiralling of the upper member 18 results in one end portion 40 lying radially within another portion near the beginning of the track at 12. The non-overlapping configuration allows the upper roadway member 18 to be formed by vacuum forming a square sheet of plastic to form the tracks and other parts and then cutting the sheet to the outline of the upper member as shown in FIG. 2. Only the center part and a small peripheral portion of the sheet from which the part is cut, are wasted. Furthermore, the configuration of the upper roadway member 18, which obviates overlapping of portions 12 and 40, allows the member to lie very flat for storage.

The upper roadway member 18 has four coupling apertures 42, 44, 46 and 48 for coupling to the four support members, to enable the upper member to be supported in a substantially helical or spirally inclined configuration over the lower roadway member 16. In addition, the lower end 40 of the upper roadway member is formed for direct connection to the lower roadway member. Each of the apertures 42-48 is designed to receive a land 50 at the top of a support member, the support member being formed so that the land 50 can be inserted and then rotated 45° so that it cannot be pulled out.

The support members also have grooves 52 at their bottoms for joining to coupling members on the bottom roadway member 16. The joining of the lower end 40 of the upper roadway member to the lower roadway member is accomplished in the manner indicated in FIG. 4. The lower member has a coupling 54 which includes a lip member 56 with an overhanging flange or lip, and an opposing member 58 on either side thereof. The lower end 40 of the upper roadway member has thin flat flanges on either side which can be received between the lips of members 56 and the opposing members 58 so the lower end of the upper roadway member can be inserted until it abuts a stepped portion 60 at the beginning of the lower roadway tracks. The upper roadway member is formed so that when it is held by the four support members, the lower end 40 tends to be pushed toward the stepped portion 60, and therefore the lower end is held securely in place. Four other coupling members 62, 64, 66 and 68, identical with the coupling 54, are mounted on the lower roadway member by adhesives after the lower member is vacuum formed. The coupling members 62-68 are used to couple to the bottom of the support members 20-26 which hold the upper roadway member in place.

The roadway apparatus is designed for connection in series with additional track members of a track layout. Generally, additional pairs of track sections are connected at exit region 14, and a pair of track coupling 70, 72 are provided at the lower end 14 to facilitate such coupling. In a similar manner, a pair of couplings 74, 76 are provided at the upper end 12 to enable connection to a pair of tracks. In many cases, the upper portion 12 is not coupled to other tracks, but instead, vehicles are initially started there. The starting gate 32 which is shown in greater detail in FIGS. 5-7 enables the simultaneous starting of two vehicles on the tracks 28, 30. The starting gate 32 comprises a member 78 pivotally mounted on the under side of the upper roadway member at 80. The member 78 is substantially a flat sheet of flexible material, with a pair of stops 82, 84 formed on either side, and a starting button 86 formed between them. The roadway member has a hole 88, 90 formed in each track section to receive the stops, and a hole 92 formed in a region between the tracks for receiving the starting button 86. When two vehicles are placed on the tracks 28, 30 in front of the stops 82, 84, they are held in place until the button 86 is depressed. Both vehicles then start down the roadway at the same time. When the roadway is used by connecting the upper end 12 to additional track members, it is desirable to maintain the stops away from the tracks so that vehicles received at 12 can move smoothly down the roadway. To move the stops out of the way indefinitely, the member 78 is deflected down until the stops 82, 84 and button 86 clear the bottom of the roadway member, and the member can be

pivoted to the side to the position shown in FIG. 6. At this position, the button and stops are securely held away from the tracks.

Thus, the invention provides a tall downwardly winding roadway for racing a pair of toy vehicles, which can be economically produced and stored, and which is capable of highly versatile use.

Although particular embodiments of the invention have been described and illustrated herein, it is recognized that modifications and variations may readily occur to those skilled in the art, and consequently, it is intended that the claims be interpreted to cover such modifications and equivalents.

We claim:

1. A roadway for toy vehicles comprising:

means forming first and second substantially parallel and laterally spaced tracks, said tracks formed with an inclined spiralling portion, and forming a crossover at a central region of said inclined spiralling portion to transfer vehicles on the radially outer and inner tracks above said crossover to the radially inner and outer tracks, respectively, below said crossover, the path length for a vehicle from the top of the innermost track, through said crossover and to the bottom of the outermost track along the spiralling portion being approximately equal to the path length for a vehicle from the top of the outermost track, through said crossover and to the bottom of the innermost track along the spiralling portion, whereby to provide a fairer race for a pair of vehicles racing each other along said roadway.

2. The roadway described in claim 1 wherein:

said inner and outer tracks lie at substantially the same level at said crossover and are oriented to direct vehicles from said inner and outer tracks across the paths of vehicles from said outer and inner tracks respectively; and including

starting gate means positioned along said tracks above said crossover, for starting a pair of vehicles at positions substantially laterally even with each other, whereby to cause the vehicle on the inner track to normally cross the crossover before the vehicle on the outer track.

3. A roadway for toy vehicles which can be connected in a track layout comprising:

roadway means forming a pair of tracks, including means at an up-track end for connection in series with a pair or track sections of said layout and holes in each track for receiving a stop; and

a member mounted beneath said tracks, including a pair of stops for projecting through said holes to prevent vehicles from moving along said tracks and starting means for simultaneously depressing said stops to allow vehicles to start moving along said tracks, said member mounted for movement between a first position wherein said stops normally project through said holes and a second position wherein said stops are indefinitely retained away from said holes, whereby to selectively start vehicles at said stops or allow moving vehicles received at the up-track end to continue unimpeded along said tracks.

4. The roadway described in claim 3 wherein:

said member is constructed of flexible material and is pivotally mounted on said roadway means to allow depression of said member below said tracks and pivoting to a position at the side of said tracks.

5. The roadway described in claim 3 wherein:

said roadway means includes a portion between said tracks with a button-receiving hole; and

said starting means comprises a button for projection through said button-receiving hole when said stops project through said holes in said tracks, and said member is constructed of flexible material and is pivotally joined to said roadway means portion between said tracks for pivoting to a position wherein said stops and button lie at the side of said roadway member.

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