

Dec. 3, 1968

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3,414,194

RACING TRACK

Filed Oct. 24, 1965

4 Sheets-Sheet 1

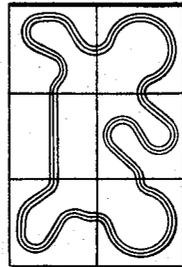
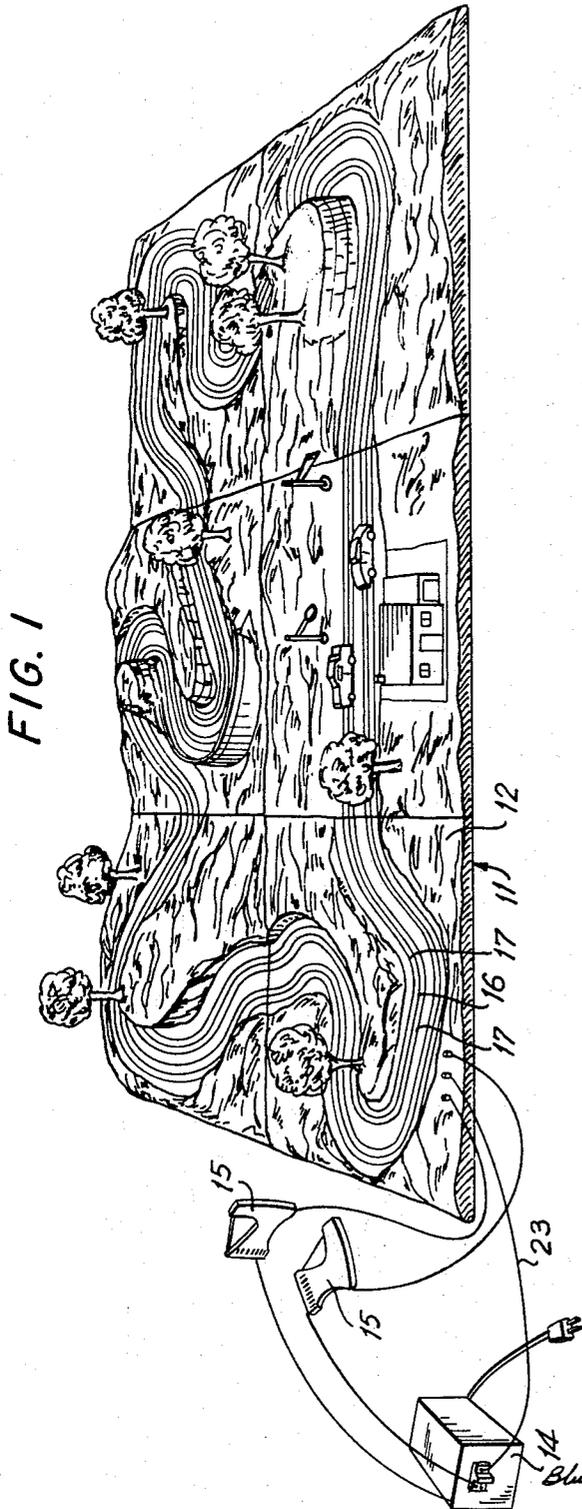


FIG. 4

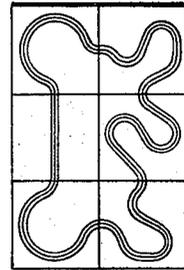


FIG. 5

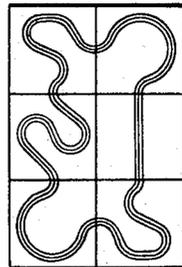


FIG. 2

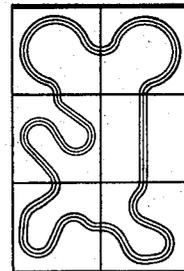


FIG. 3

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FIG. 6

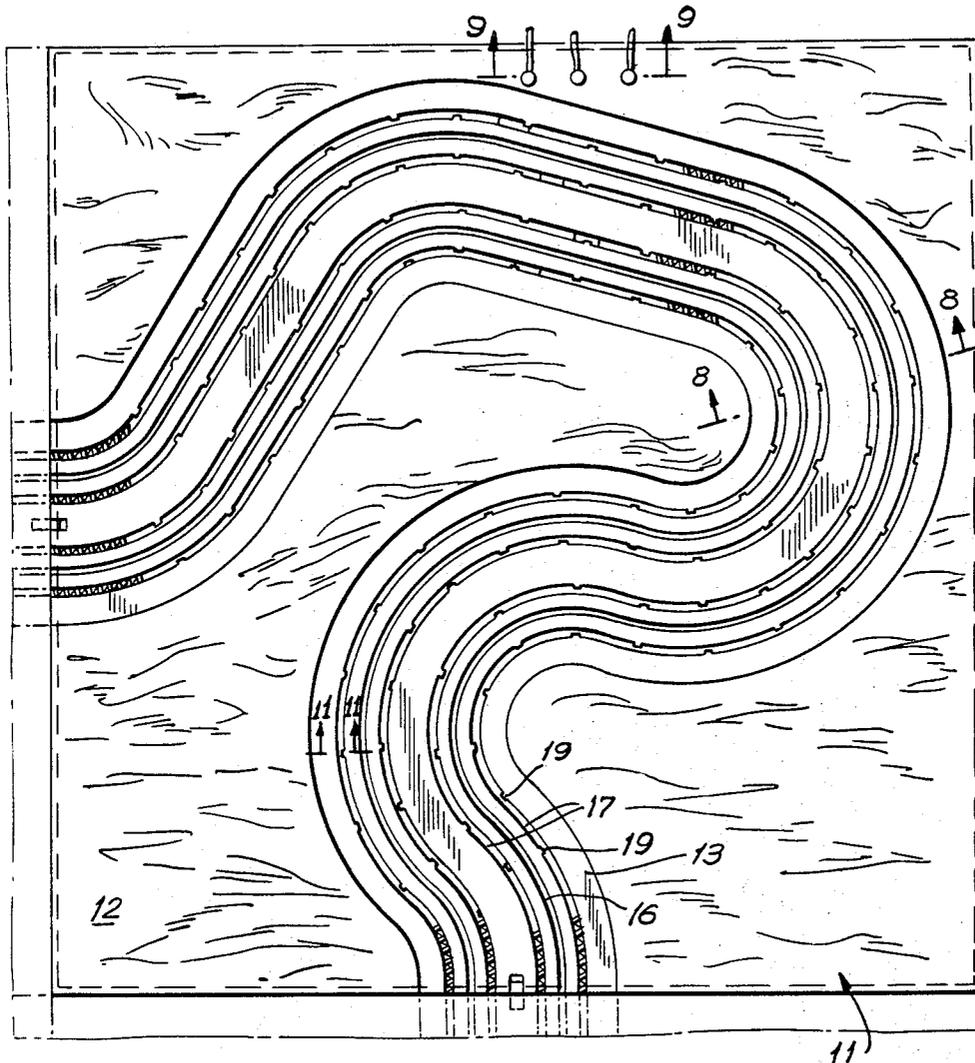
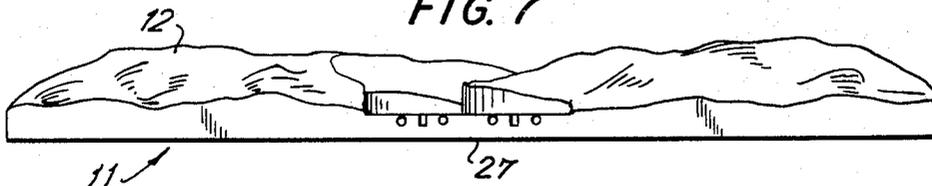


FIG. 7



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FIG. 8

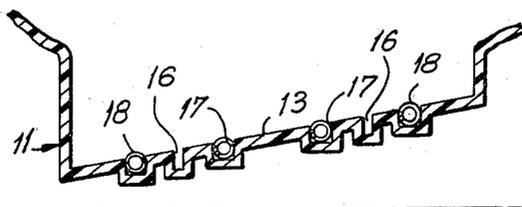


FIG. 9

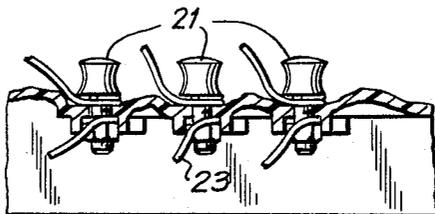


FIG. 10

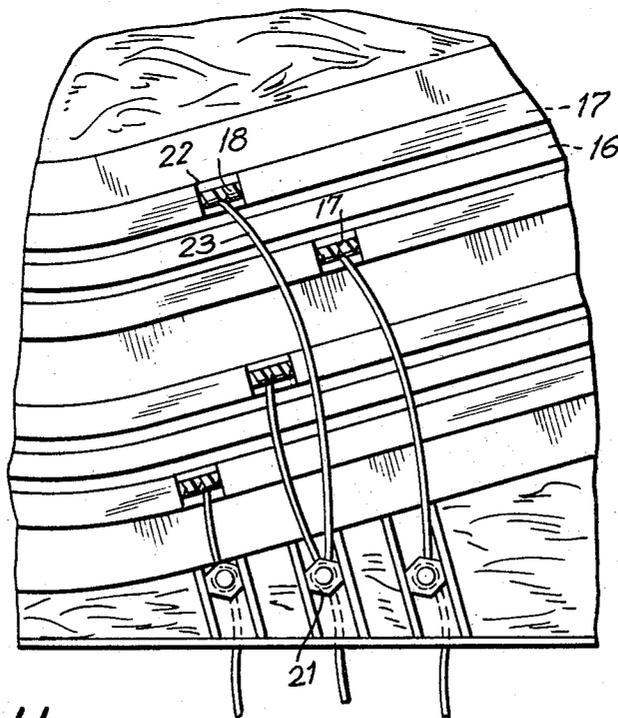
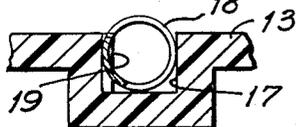


FIG. 11



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FIG. 12

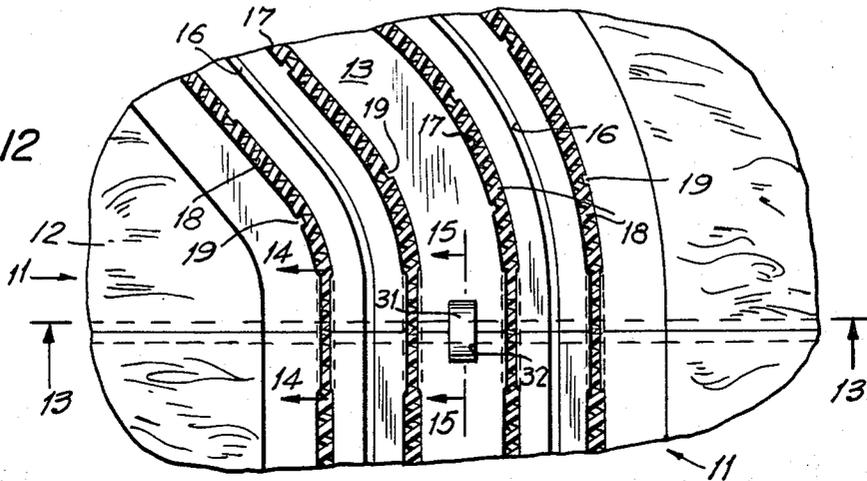


FIG. 13

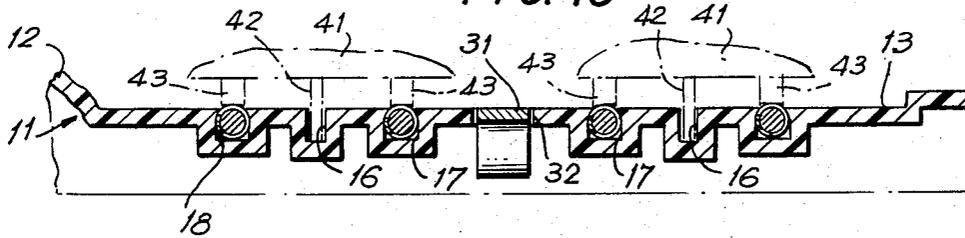


FIG. 14

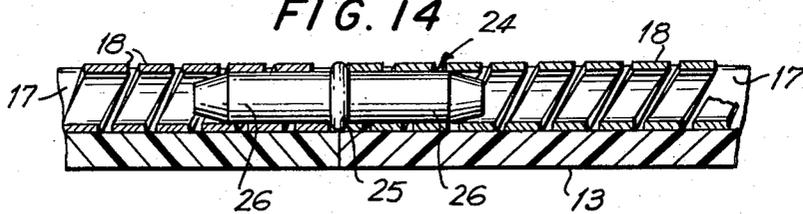
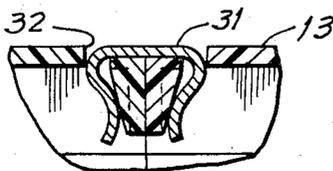


FIG. 15



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RACING TRACK

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9 Claims. (Cl. 238—10)

ABSTRACT OF THE DISCLOSURE

A racing track which consists of a plurality of track section each having a roadway portion and a terrain portion with the roadway portion terminating at two sides of the track section on center of the track section so that the track sections can be assembled together in substantially any random manner to create closed circuit courses of various configurations for a toy vehicle. Conductors are embedded in the roadway section and are preferably of a spiral configuration.

This invention relates generally to a racing track and is more particularly directed to a racing track composed of a plurality of individual track sections composed of both track and terrain portions, which may be interconnected in substantially any desired random pattern to form a complete track layout which simulates a road race layout. The invention is also concerned with an improved construction of such track sections.

Slot racing has become a popular hobby which is being pursued at home as well as at slot racing centers. Various types of track systems are on the market for home use but such systems, if an attractive, realistic layout is desired, require substantial effort on the part of the hobbyist. Furthermore, once such a layout has been predetermined, a modification of the track arrangement can not easily be accomplished without substantially destroying the entire layout. In addition, most track sections are designed to be used in a horizontal plane and are not readily adaptable to the formation of hills unless a relatively large layout is to be constructed wherein the hills may have a relatively gradual incline. Accordingly, it is an object of this invention to provide a racing track assemblable of a plurality of track sections to form a complete, attractive road course.

Another object of the invention is to provide a plurality of track sections which may be randomly interconnected and which automatically align the roadways.

A further object of the invention is to provide a track section having roadways which curve in both horizontal and vertical planes and which can be inexpensively fabricated as complete track sections with terrain portions and roadway portions.

Still another object of the invention is to provide an improved construction of a track section wherein the track conductor may be sharply bent in both horizontal and vertical planes and rapidly assembled to the section.

Still another object of the invention is to provide improved means for electrically interconnecting contiguous trackway sections.

Still other objects and advantages of the invention will in part be obvious and will in part be apparent from the specification.

Generally speaking, in accordance with the invention, track sections are molded of plastic material to define both roadway and terrain portions. The roadway and terrain portions have both horizontal and vertical dimension, with the roadway being curved as desired. In such a racing track, the roadway is preferably provided with at least two tracks for race cars, each including a slot for guiding of the race cars and slots for receiving the conductors which will supply power to the race cars travelling along

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the roadway. In the preferred construction, the conductors have a generally spiral configuration so that they may be bent in any direction to conform to the roadway curvature. Each track section is adapted to be assembled to a contiguous track section with the roadway on each section terminating at two side edges of each track section, on the center line thereof, whereby, regardless of the curvature in each section, any number of sections may be interconnected to form a closed circuit and the sections may be rearranged to vary the circuit layout, as desired by the hobbyist.

The invention accordingly comprises the features of construction, combination of elements, and arrangement of parts which will be exemplified in the construction hereinafter set forth, and the scope of the invention will be indicated in the claims.

For a fuller understanding of the invention, reference is had to the following description taken in connection with the accompanying drawings, in which:

FIG. 1 is a perspective view of a racing track constructed in accordance with the invention;

FIGS. 2 through 5 are plan views of various track layouts which may be constructed from the track sections of FIG. 1;

FIG. 6 is a plan view, at a greatly enlarged scale, of a single track section;

FIG. 7 is an end elevational view of a terminal side of a track section of FIG. 6;

FIG. 8 is a sectional view, taken along line 8—8 of FIG. 6;

FIG. 9 is a sectional view, taken along line 9—9 of FIG. 6;

FIG. 10 is a partial bottom plan view of the track section of FIG. 6;

FIG. 11 is a partial sectional view, at an enlarged scale, taken along line 11—11 of FIG. 6;

FIG. 12 is a partial plan view, at an enlarged scale, of two adjoining track sections;

FIG. 13 is a sectional view taken along line 13—13 of FIG. 12;

FIG. 14 is a sectional view, at an enlarged scale, taken along line 14—14 of FIG. 12; and

FIG. 15 is a sectional view, at an enlarged scale, taken along line 15—15 of FIG. 12.

Referring now to the drawings, the racetrack consists of a plurality of assembled and interconnected track sections 11, each of which has a terrain portion 12 and a roadway portion 13. Each track section may preferably be molded of a plastic material such as by injection molding, to form a complete, one-piece unit which may be painted or decorated to simulate an actual road course with all its scenic splendor. The contours of the terrain are best shown in FIGS. 1 and 7, and roadway 13 is provided with a random, winding path with uphill and downhill portions as well as sharp curves. As is known in the slot racing art, a roadway is preferably provided with two trackways along which electrically motor driven cars may travel to simulate a road race. Current is supplied from a transformer 14 to the roadway with the speed of the individual cars being controlled by rheostats 15.

The details of the track construction may best be seen with reference to FIGS. 6 through 8. A molded plastic track section 11 is provided with a contoured roadway portion 13 having, in the examples shown, two tracks for the side by side racing of toy vehicles. Each track consists of a central slot 16 and spaced slots 17 which accommodate conductors to be hereafter described. The parallel tracks in the roadway may follow any desired path such as a straight path or a curved path of tortuous configuration. However, it is mandatory that the terminus of the roadway at two edges of the track section fall on the center line of the side and extend, at least for a short distance, per-

pendicularly from the side. Thus, the section of FIG. 6 shows a roadway having a series of sharp switchback curves which terminate along adjacent side edges of the track section on the center line of the track section with each central slot and spaced slots extending perpendicular to its proximate side. By having the roadway perpendicular to the side edge at its terminal portion, with the roadway always terminating on the center line of the side, each and every track section can be interconnected with every other track section, regardless of configuration or orientation, it being assured that the central slots and spaced slots on adjacent track sections will always be brought into alignment.

As shown in FIGS. 1 through 5, the corner track sections have the roadway ends terminate along adjacent sides, while central track sections have the roadway terminate along opposite sides. Within the limitations of appropriate use of corner or central track sections, each and every track section can be interconnected with each and every other track section to form any desired layout and, by adding additional sections, layouts of large size may be created.

Referring now to FIGS. 6, 8 and 11 through 14, spaced slots 17 form the receiving channels for conductors 18 through which current is supplied to the toy racing cars. The conductors are formed of a conducting material into a hollow, substantially spiral shaped continuous element which is light weight and readily flexible in all directions. The width of a slot 17 is substantially the same as the outside diameter of a spiral conductor 18, whereby the spiral conductor may be readily and easily assembled in the slot. Sharp curves as well as uphill and downhill sections present no difficulty because of the flexible nature of the spiral conductor. As best seen in FIGS. 11 and 13, the depth of slot 17 is slightly less than the outside diameter of conductor 18 in order that the conductor may project above the surface of roadway 13 to assure good contact with the current pickup shoe of the racing car.

Along opposite sides of slot 17, at spaced intervals, there is molded in a friction ear 19 (FIG. 11) which tends to compress conductor 18 to thereby lock it into the slot. In assembly, a continuous length of conductor 18 is laid along slot 17 and forced into the slot, following the curve thereof. Friction ears 19 lock the conductor into the slot so that it may not be readily removed therefrom.

As heretofore stated, each of the tracks receives current from transformer 14 through one of rheostats 15. Only one of the track sections shown in FIGS. 1 through 5 need be provided with means for supplying current to the conductors and such a section is shown in FIGS. 6, 9 and 10. The track section is provided with suitable binding posts 21 secured through the plastic track section with the binding posts being electrically connected to the conductors. As shown in FIG. 10, a portion of the bottom of each slot 17 is cut away as at 22 and a wire 23 is connected from each binding post to a conductor 18. The central binding post forms a common connection to two conductors 18, one for each of the tracks. Note that the two conductors commonly connected to the central binding post are like oriented with respect to right and left conductors of each track, so that the polarity of each track will be the same. The other conductor 18 of each track is connected through a wire to one of the binding posts. A remote connection is made between the central binding post and transformer 14, while each of the other binding posts is connected through a rheostat 15 to the transformer. In this manner, an open circuit through the transformer and a rheostat is formed with each track, the circuit being closed by the vehicle travelling therealong. Such toy vehicles are well known in the art. As illustrated in FIG. 13, a car 41 includes an electric motor (not shown) and pickup shoes 43 for conducting current from the track conductors to the motor. A guide pin 42 depends from the car and, by cooperation with slot 16, guides the car during its travel along the roadway. The speed of the car travelling on each track is thereby controlled by a respective one of the rheostats.

As stated, only one track section is provided with means for supplying current thereto. The conductors in each adjacent track section are electrically interconnected so that each conductor forms a continuous electrical loop when all sections have been interconnected. Such means are best shown in FIG. 14 wherein a plug 24 interconnects each mating spiral conductor at adjacent side edges to electrically connect the aligned conductors. Plug 24, fabricated of a conducting material, has a central shoulder portion 25 whose outside diameter is approximately equal to the outside diameter of conductor 18 and axially projecting outer portions 26 whose outside diameter is substantially equal to the inside diameter of spiral conductor 18. In this manner, the opposite outer portions 26 may be plugged into the aligned conductors in adjacent track sections, shoulder portion 25 serving to limit the insertion in order to assure full contact with each conductor. Plugs 24 also serve to provide a mechanical interconnection of the track sections, and additional mechanical means may be provided, if desired.

Such additional mechanical means may take the form of a spring clip 31 having outer ends extending through suitable apertures 32 in track sections 11.

As shown in FIG. 7, roadway portion 13 may be, in effect, carved out of the terrain portion 12 and may travel up along the mountainous portions and around sharp bends and banks, all for the purpose of simulating actual road racing conditions. As stated, the roadway may follow any desired path within the four corners of a track section but must terminate at two opposed or adjacent edges at the center lines thereof and perpendicular thereto. Additionally, for complete interchangeability, the level of the roadway must be the same at the terminus at each side of each section. By the level is meant the vertical height of roadway 13 above the bottom edge 27 of the track section at a terminal side. Furthermore, it is desirable that the level of the terrain at each of the roadway sides be symmetrical about the center line of the side and the same as the other sides for the mating of terrain surfaces when the sections are randomly joined.

It will thus be seen that the objects set forth above, among those made apparent from the preceding description, are efficiently attained and, since certain changes may be made in the above construction without departing from the spirit and scope of the invention, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

It is also to be understood that the following claims are intended to cover all of the generic and specific features of the invention herein described, and all statements of the scope of the invention which, as a matter of language, might be said to fall therebetween.

What is claimed is:

1. A racing track comprising a plurality of track sections, each of said track sections formed as a multi-sided base section having a terrain portion and a roadway portion, said roadway portion being within said terrain portion and separated therefrom by generally vertical walls throughout substantially the entire length of said roadway portion, said roadway portion terminating at two of said sides and being continuous therebetween, said roadway portion having a relatively smooth upper surface adapted to support toy cars for travel therealong, means defining at least one slot along said continuous roadway surface, conductor means on said roadway surface on opposite sides of said slot means, the center line of said roadway portion being coincident with the center line of said sides at the terminus of said roadway portion, said base sections being assembled in side by side abutting relationship to form said raceway track, each terminus of a roadway portion on one of said base sections being in alignment with a terminus on a mating base section, whereby said track sections may be assembled in different patterns to form closed circuit racing track.

2. A racing track as claimed in claim 1, wherein the

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center line of the terminal portion of each of said roadway portions is perpendicular to its respective side, at least for a short distance inwardly of said side.

3. A racing track as claimed in claim 1, wherein the level of the upper surface of each of said roadway portions at the terminus thereof is identical whereby, on assembly of said track sections to form said racing track, the surfaces of said roadway portions will be in vertical alignment at the joining sides, regardless of the orientation of said track sections.

4. A racing track as claimed in claim 3 wherein the levels of the upper surface of the terrain portion along each side is symmetrical about the center line of the side and is the same as the levels along at least one other side.

5. A racing track as claimed in claim 4 wherein the terrain levels along every side are identical.

6. A racing track as claimed in claim 1 and further including means for electrically interconnecting said conductor means between mating track sections.

7. A racing track as claimed in claim 1 wherein said conductor means comprises means defining conductor receiving slots parallel to and on opposite sides of said one slot, each of said conductor slots extending into said roadway surface and having side walls and a bottom wall, and a hollow spiral conductor carried by said conductor slot, the distance between said side walls being substantially equal to the outside diameter of said spiral conductor, the distance between said roadway surface and said bottom wall being less than the outside diameter of said spiral conductor.

8. A racing track as claimed in claim 7 and further including means for interconnecting aligned spiral conductors on mating track sections, said means comprising a cylindrical plug having a central shouldered section and

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two outer sections, the outside diameter of said central shouldered section being approximately equal to the outside diameter of said spiral conductor, the outside diameter of said outer sections being approximately equal to the inside diameter of said spiral conductor.

9. In a track section, the combination of a base member having a top surface, means defining a slot in said top surface, said slot having side walls and a bottom wall, and a hollow spiral conductor in said slot, the distance between said side walls being approximately equal to the outside diameter of said spiral conductor, the distance between said top surface and said bottom wall being less than the outside diameter of said spiral conductor and a plurality of friction ears projecting from one or the other of said side walls into said slot along the length thereof, said friction ears engaging said spiral conductor to secure same to said slot.

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