United States Patent

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[54] RACE GAME WITH RANDOMLY DRIVEN REEL DRIVE MEANS

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[52] **U.S. Cl.** ..... **273/86 G**
[51] **Int. Cl.** **A63f 9/14**
[58] **Field of Search** ..... 273/86 G, 86 F

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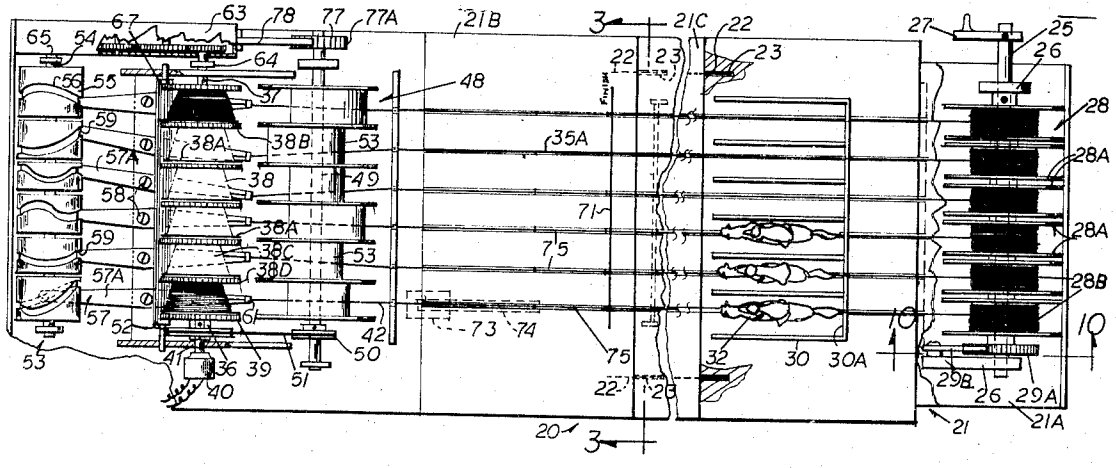
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[57] **ABSTRACT**

A racing game or amusement device in which racing figures are moved at varying rates of speed so that the arrival of a racing figure at a finish line is rendered completely unpredictable, and wherein the figures can be readily reset at a starting line in position to run another race with completely different results. The device comprises a simulated race track with a plurality of racing figures mounted for movement along the track. Each figure is independently moved in a manner to advance along the track by means of cords arranged to be simultaneously wound and unwound about complementary winding and rewinding reels located at the opposite ends of the track. The arrangement is such that the winding rate of each cord about its winding reel differs from that of the other cords; the several winding rates being completely unpredictable, so that the movement of the respective racing figures varies and the winning figure can not be determined in advance. The track includes a starting section, a finishing section, and one or more intermediate sections which can be interconnected between the starting and finishing sections.

19 Claims, 10 Drawing Figures



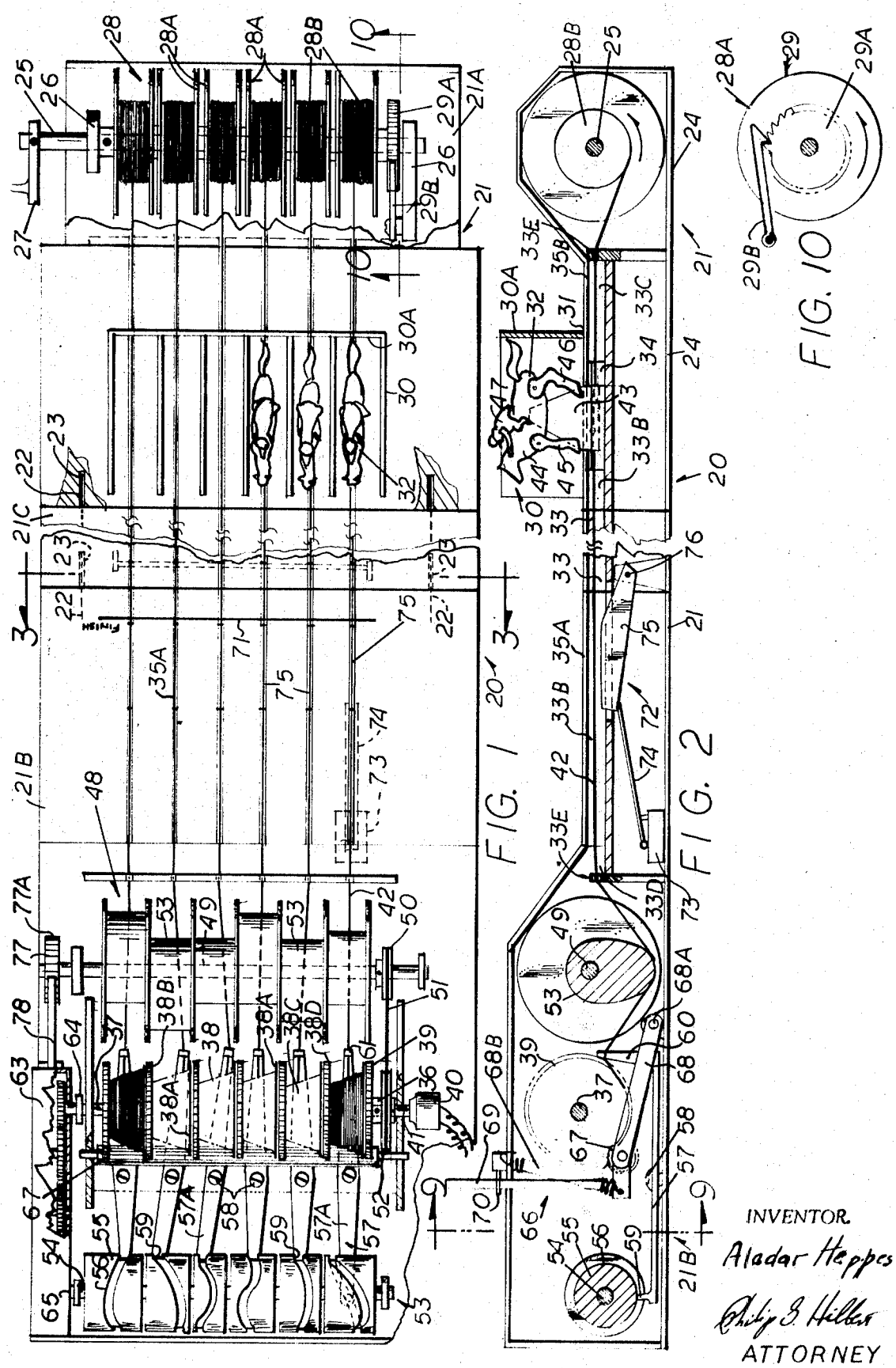


FIG. 1

FIG. 2

FIG. 10

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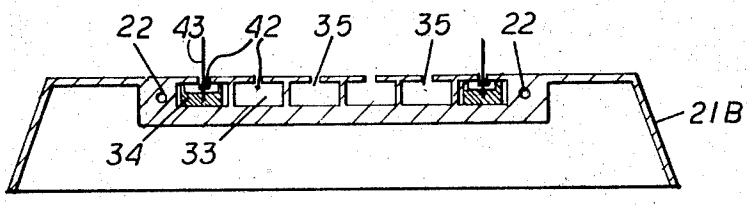


FIG. 3

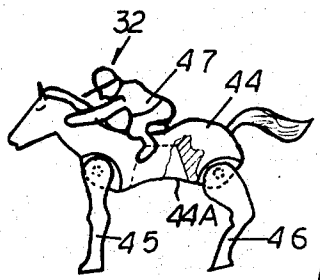


FIG. 4

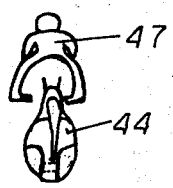


FIG. 5

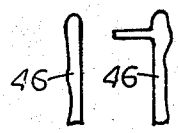
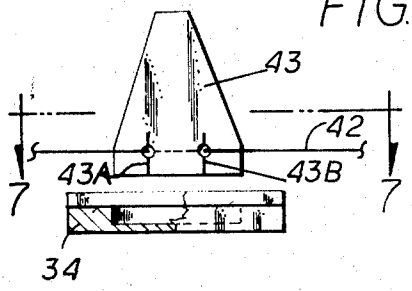


FIG. 6



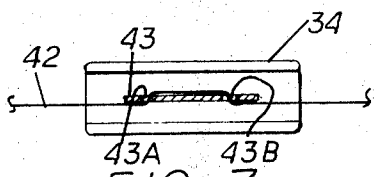


FIG 7

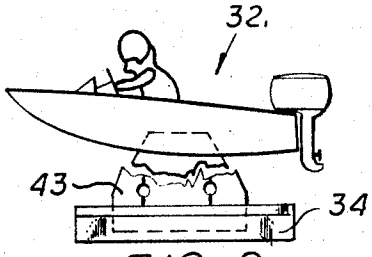


FIG 8

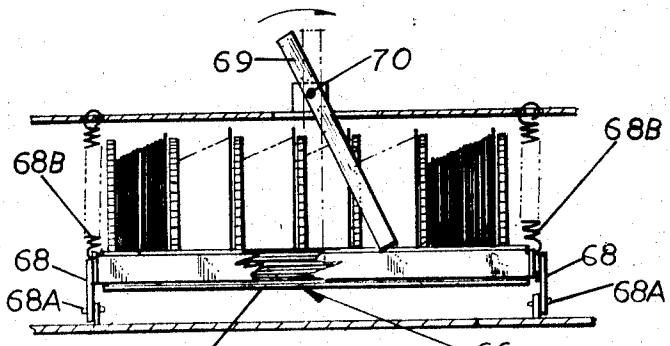


FIG. 9

RACE GAME WITH RANDOMLY DRIVEN REEL DRIVE MEANS

BACKGROUND OF THE INVENTION

Simulated racing games are known in the art. However in such known games, the movement of the racing figures along the track, is controlled at least in part by the skill of the operator.

Other simulated racing games are known where the results of any given race are unpredictable. It has been found that such games are of a complicated construction and quite expensive to fabricate.

OBJECTS

It is an object of this invention to provide a simulated racing game or amusement device in which the arrival of the racing figures at a simulated finish line is rendered totally unpredictable, the result of which is not dependent upon any fixed, predetermined, predictable, mechanical movement.

Another object of this invention is to provide a simulated racing game or amusement device in which the racing figures are constructed and arranged to simulate lifelike animations and in which the length of the racing track, the set up, and the speed are proportional to the size of the racing figures to simulate realism in actual race in every manner.

Another object of this invention is to provide a simulated racing game or amusement device in which the length of the racing track may be varied at the will of the operator.

Another object of this invention is to provide a racing game or amusement device having figure moving operations which are based entirely on chance and rendered entirely unpredictable.

Another object of this invention is to provide a racing game or amusement device in which the figures may be readily reset and repositioned for repeated racing events in a simple and expedient manner.

Another object of this invention is to provide a racing game in which the respective racing figures are automatically stopped in their relative positions when the lead figure has crossed a simulated finish line.

Another object of this invention is to provide a simulated racing game or amusement device which is relatively simple in construction, economical to fabricate and is positive in operation.

BRIEF SUMMARY OF THE INVENTION

The foregoing objects and other features and advantages are attained by a game comprising a track means which includes a starting end section, a finishing end section and one or more intermediate raceway sections. A plurality of racing figures of desired configuration are arranged for random movement along the track means. Individual motivation or drive of the respective racing figures is attained by a pair of complementary winding and rewinding reels located adjacent the end portions of the track means with a flexible cord interconnected therebetween, the number of complementary pairs of winding and rewinding reels correspond in number to the number of racing figures utilized. Each racing figure is connected to its respective cord by a friction slip connection.

The respective winding reels are connected in driving relationship to a suitable motor means, which when energized will cause the winding reels to wind the cord thereon as the cord is being unwound from the rewind reels, thereby advancing the racing figure along the track at a speed corresponding to the winding rate of the cord. To randomly vary the speed at which the racing figures are linearly moved along the track a means is provided to vary or effect the winding rate of the individual cords about their respective winding reels. The manner in which the respective cords are wound about their respective winding reel is such that the rate of movement of racing figures is continuously varied so that the results of a given race are rendered totally unpredictable. Means are also provided to effect the termination of a given race when the lead racing figure has reached a predetermined point.

A means operatively associated with each cord is provided to effect or impart animation to the racing figures during the running of a particular race. If desired, sound effect means can also be incorporated in the device and rendered operative during the running of the race. To reset the racing figures to a starting position in preparation of the game for another race, the cord is rewound about the rewind reel. In the drawings:

FIG. 1 illustrates a plan view assembly of the simulated racing device having parts broken away.

FIG. 2 is a side elevation view of the racing game or device of FIG. 1 having parts shown in section.

FIG. 3 is a cross-sectional view taken along line 3—3 on FIG. 1.

FIG. 4 illustrates an exploded detail view of a racing figure.

FIG. 5 illustrates a rear view of the body of the racing Figure of FIG. 4.

FIG. 6 is a detail of construction of the racing figure of FIGS. 4 and 5.

FIG. 7 is a plan view taken along line 7—7 on FIG. 4.

FIG. 8 is a side view of a modified racing figure.

FIG. 9 is a sectional view taken along line 9—9 on FIG. 2.

FIG. 10 is a side view of a detail of construction taken along line 10—10 on FIG. 1.

Referring to the drawings, there is shown therein a racing game or amusement device **20** embodying the present invention. The racing game **20** comprises a simulated track structure **21** which includes a starting end section **21A**, a finishing end section **21B**, and one or more intermediate raceway or runway sections **21C**. The adjacent sections are each provided with complementary mating connections, as for example, pin and hole connections **22, 23**, whereby the respective sections may be detachably connected in tandem relationship. For example, the raceway section **21C** may be provided with a pair of projecting pins **22** extending beyond one end and complementary holes **23** on the other end which are adapted to be received in mating relationship with complementary pins **22** and holes **23** formed in the next adjacent track section as indicated. It will be, of course, understood that one or more raceway sections **21C** may be interconnected in tandem between the starting section **21A** and the finishing section **21B**.

The starting section **21A** comprises a base **24** having suitably mounted thereon a rewinding shaft **25** supported between spaced bearing supports **26-26**. A crank or operating lever **27** is fixedly connected to one end of the rewinding shaft **25** to effect the operation thereof, as will be hereinafter described.

A plurality of rewind reel means **28** are rotatably journaled to the shaft. Each reel **28** includes a pair of spaced flanges **28A** and a connected hub **28B**. The rewind reels **28** are frictionally mounted on the shaft **25** to be drivingly connected to the rewind shaft for rotation in one direction, and free to rotate independently of the shaft **25** and each other when rotated in the opposite direction.

Ratchet means **29** is journaled on shaft **25** adjacent one end thereof and comprises a ratchet wheel **29A** fixedly secured to the shaft for rotation therewith when said shaft is rotated by means of crank **27**. Cooperatively associated with the ratchet wheel **29A** is an operating pawl **29B** which is arranged to engage the periphery of the ratchet wheel.

It will be noted that the ratchet teeth of ratchet wheel **29A** and pawl **29B** cooperate in a manner such that shaft **25** rotates in a rewinding direction only; such direction being counterclockwise as viewed in FIGS. **2, 10**. If desired, ratchet wheel **29A** may be formed on the outer side thereof with a sound track in the form of grooves. A suitable stylus, connected to a sound diaphragm, not shown, may be arranged to move in the grooves to thereby reproduce desired sound effects suitably recorded therein.

Connected to the starting end section **21A** of track **21**, is a starting gate **30**, simulating actual starting gates found at horse racing tracks. Such a starting gate will include partitions to simulate stalls for the respective racing figures, hereinafter described.

The starting gate **30** is pivotally mounted along its lower rear edge, on starting end section **21A** by means of a pivot **31**. The starting gate **30** includes a rear wall **30A** against which each of the racing figures **32**, to be herein described, are abutted in order to set or align the racing figures **32** in starting position across the track **21**.

Connected to the starting section **21A** by suitable interconnectors **22**, **23** is one or more lengths of a raceway section **21C**. As shown, the raceway section **21C** may be of any desired length of one or more units which may be detachably secured together, as for example by a pin and slot connection as described. In the illustrated form of the invention it will be noted that the end of the starting end portion **21A** may be provided with suitable holes **23** adapted to receive projecting pins or connectors **22** of the raceway section **21C**. In assembling the raceway section **21C** to the starting end section **21A**, a player need only to position the pins **22** in the complementary holes **23**.

As best seen in FIGS. **1** and **3** the raceway section **21C** includes a member having formed therein a plurality of longitudinally extending channelways **33** adapted to receive the base portion **34** of a racing figure **32** as will be hereinafter described. A longitudinally extending slot **35**, coextensive to the raceway section **21**, is formed in the upper surface of the raceway section **21C** in communication with the channelway **33**. Preferably the elongated slots **35** formed in the raceway sections **21C** are disposed coincident to the center line of the respective rewind reel means **28**. In the illustrated form of the invention six such channelways **33** and associated slots **35** are provided in the raceway section **21C**, one for each racing figure. However, it will be understood that any desired number of channelways **33** and associated slots **35** may be formed in the raceway depending upon the number of figures which are desired to be raced. One or more raceway sections **21C** may be interconnected together in tandem by means of the pin and slot connection to define a track of predetermined length.

Connected to the endmost raceway section **21C** is a finishing end section **21B**. The inner edge of the finishing end section **21B** is adapted to abut the end of the endmost raceway section and connected thereto by complementary pin and hole connectors **22** and **23**. A portion of the finishing end section **21B** as well as a portion of the starting section **21A** are provided with complementary channels **33B** to form a continuation of channel **33** of the adjacent raceway section **21C**. Slots **35** also extend onto the finishing section **21B** as indicated at **35A**. On the finishing sections **21B** there is rotatably journaled in suitable end bearings a main or winding shaft **37**.

Mounted on the winding shaft **37** are a plurality of winding reels **38**. The number of winding reels **38** journaled on the winding shaft **37** corresponds in number to the number of rewind wheels **28** mounted on the starting section **21A** of the tracks **21**. Each of the respective winding reels **38** comprises a pair of spaced flanges **38A**, **38B** interconnected by a hub **38C** of nonuniform diameter. That is, the diameter of the hub **38C** varies laterally thereof. In the illustrated form of the invention a hub **38C** interconnected between the end flanges **38A**, **38B** tapers inwardly from one flange **38A** toward **38B**, i.e., hub **38C** is conical, or it may be stepped down, or made irregular. One flange **38B** of the respective reels **38** is further provided with a plurality of teeth **38D** formed on the circumferential edge thereof to define a gear drive for the respective reels **38** relative to shaft **37**. It will be understood that the diameter of the geared flange **38B** of the respective reels **38** are of uniform diameter having equal number of gear teeth spaced therearound. The respective winding reels **38** are each frictionally mounted on shaft **37** so as to be independently rotatable thereon. Preferably the friction torque of the rewind reels **28** on its shaft is substantially twice the frictional torque on the winding reels **38** and its shaft **37**. The torque differential facilitates resetting the figures as will be herein described.

A suitable motor means **40** is connected in driving relationship with the shaft **37** to effect the drive arrangement the winding shaft **37**. In the illustrated form of the invention the motor means **40** comprises an electric motor, the armature or output spindle **41** thereof is connected or coupled in driving relationship to the winding shaft **37**. The arrangement is such that whenever the motor **40** is energized, the winding shaft **37** is rotated. Mounted on the shaft to rotate therewith is a driving gear **39** by which the drive of reels **38** is effected through a clutch means as will be hereinafter described.

Stretched between and arranged to wind about the complementary pair of reels **28** and **38** is a flexible cord **42**. For example, a monofilament cord or fishing line is adapted to be wound and unwound accordingly about the respectively aligned reels **28**, **38**. As shown in FIG. **1**, the cord **42** extends from the rewind reel **28** through the associated channels **33**, **33B** of the track **21** onto the winding reel **38**. It will be noted that at the entrance and exit ends **33C**, **33D** of the channel **33**, guide means **33E** are provided to align the cord and maintain the cord **42** parallel to the associated channel.

A plurality of racing figures **32** are provided, each being connected to one of the cords **42** extending between the rewind reel **28** and the winding reel **38**. Referring more specifically to FIGS. **4** to **6**, each racing figure **32** comprises a base portion **34** which is adapted to be received in a channelway **33**. Connected to the figure base portion **34** and extending upwardly through the associated slot **35** of a given channelway **33** is a pedestal means **43**. The pedestal means **43** is preferably formed of transparent material and is provided with a pair of spaced vertical slits, **43A**, **43B**, by which it may be frictionally secured in slip relationship to an associated cord **42**. As seen in FIG. **7** the cord **42** is threaded through the slits **43A**, **43B** to frictionally secure it to the cord.

The racing figure **32** may take any form, e.g., an automobile, a boat, a dog, a horse, an airplane, or any other form associated with racing. In the illustrated embodiment the racing figure **32** comprises a race horse. The body **44** of the horse is provided with a slot **44A** to frictionally receive the upper end of the pedestal. The limbs of the horse, comprising the forelegs **45** and the hindlegs **46** are pivotally mounted to the body so that each may pivot or swing relative to the body. Also a simulated figure of a jockey **47** may also be positioned on the horse body **44** and mounted thereon so that the jockey may rock relative to the horse.

The arrangement is such that the racing figure **32** will move with the cord **42** as the cord is wound and unwound about the respective reels as will be hereinafter described. Also it will be noted that figure **32** is free to slip relative to the cord **42** in the event a biasing force is applied on the racing figure, as in resetting the racing figures, as will be hereinafter described.

Also mounted on the finishing end section **21B** is an animation means **48** to impart animation to the respective racing figures **32**. As shown, the animation means **48** comprises a shaft **49**, rotatably journaled between suitable end supports. Connected to one end of the animation shaft **49** is a pulley or sprocket **50**, which in turn is connected in driving relationship by a flexible belt or chain **51** to a driven pulley or sprocket **52** secured to the main drive shaft **37**. Accordingly it will be noted that when the main drive shaft **37** is rotated upon actuation of the motor **40**, the animation shaft **49** will be driven accordingly.

Mounted along the animation shaft **49** are a plurality of eccentric cams **53**, each being mounted in an out-of-phase relationship along the length of the shaft as indicated in FIG. **1**. The arrangement is such that a portion of the cam **53** will engage the flexible cords **42**, to which the respective racing figures are secured, so that in operation, the eccentricity of the animation cams **53** will impart a vibration frequency to the flexible cord which in turn imparts animation to the racing figure being pulled by the cord during the operation of the race. The vibration thus imparted to the cord **42** will cause the legs of the horse to swing freely relative to the body.

A cam shaft **54** is also journaled on track section **21B**. On shaft **54** there are connected a series of cam means **55** to control or guide the lay of the convolutions of the cord **42** being

wound about hub 38C of the winding reels 38. In the illustrated form of the invention the cam means 55 comprises a roller having a cam groove 56. A roller cam groove 56 is associated with each winding reel 38. Also the arrangement of the cam grooves 56 is such that they are disposed in out-of-phase relationship.

Cooperatively associated with each cam means 55 is an oscillating cord guide 57. As best seen in FIG. 1 the cord guide comprises a horizontally disposed lever 57A which is pivoted to the end section 21B intermediate the ends thereof about pivot 58. One end of the cord guide 57 is provided with a cam follower 59 to follow in the cam groove 56. The other end of the lever 57 extends forwardly of the associated winding reel 38 and is provided with an upstanding portion 60 formed with a notch 61 for receiving the cord 42. It will be apparent that rotation of the cam means 55 transmits an oscillatory or lateral movement to the cord guide 57. The lateral movement of the guide 57 in turn guides the cord laterally of the hub. Because of the nonuniform diameter of the hub 38C, the rate at which the cord winds thereon will vary. Since each cam means or groove 56 is disposed in out-of-phase relationship the rate at which each cord winds upon its respective winding reel 38 will vary in an exaggerated manner with respect to one another in an unpredictable manner. Because the winding varies with each cord the linear movement of the cord 42 and the associated racing figure 32 connected varies in an unpredictable manner with respect to one another.

As best seen in FIG. 1 the drive for the cam shaft 54 is effected by a gear train or reduction gear unit 63, the input 64 of which is operatively connected to the winding shaft 37 and the output 65 to the cam shaft 54.

To effect the simultaneous drive of the respective winding reels 38 to advance the racing figures 32 along the trackway, a clutch means 66 is provided. In the illustrated embodiment, the clutch means 66 comprises an elongated clutch gear 67 journaled on a pivoting bracket 68 for movement toward the clutch driving gear 39 and the reel driving gears 38B of the respective winding reels 38. An actuator 69 is pivotally mounted to the frame of track section 21B for effecting actuation of the clutch gear 67 between operative and inoperative positions. The actuator 69 is pivotally mounted at 70 and is operative to permit movement at bracket 68 and the clutch gear 67 carried thereon into meshing and unmeshing relationship with gears 39 and 38B. When actuator 69 is moved to an operative position, the clutch gear 67 is moved into meshing engagement with the driving gear 39 mounted on the winding shaft 37. The driving gear 39 when the motor is energized in turn effects the drive of the clutch gear 67 and being in meshing relationship with each of the respective drive gears 38B of the winding reel 38, effects the drive of the latter. Accordingly the winding reels are each simultaneously driven about the winding shaft 37 to effect the winding of the respective cords 42 thereon and the advancement of the racing figures along the track accordingly. Because of the variance in the rate at which the respective cords 42 are wound upon the hubs 38C of the respective winding reels 38, the linear speed of the racing figure connected to the cord will vary accordingly.

Referring to FIG. 9, the clutch gear 67 is journaled between ends of a yoke type bracket 68. The bracket is pivotally mounted about pivots 68A for carrying the clutch gear 67 toward and away from the driving gear 39 and the reel gear 38B. It will be noted that springs 68B connected between the frame of the track and the bracket 68 normally tend to urge the clutch gear 66 into meshing engagement with gears 39 and 38C. The actuator 69 is pivoted to the frame of the track so that in the vertical position, indicated in dotted lines in FIG. 9, it overcomes the bias of springs 68B to disengage the clutch gear 66. When the actuator 69 is displaced to an angular position, the springs 68B cause the bracket to bias the clutch gear 66 into engagement with driving gear 39 and gears 38B of the reels 38.

Means, generally indicated at 72, is provided for terminating a given race when one of the figures 32, i.e., the lead figure, has crossed a simulated finish line 71. Such means 72 comprises a switch 73 in circuit with electric motor 40. Switch 73 is located in track portion 21B and has a switch actuator 74 associated therewith. A knifelike operator 75 is disposed in each of the track slots 35 for movement upon engagement thereof by any of the leading figures 32. The operators 75 are pivotally mounted on a pivot rod 76 and one of the operators 75 is arranged to engage the switch actuator 74 when any of the operators 75 is depressed by the leading figure 32. This causes the microswitch 73 to be operated to deenergize motor 40, thereby stopping the movement of all figures 32 and leaving them in their several finish positions.

To reset the figures 32 at the end of a given race, the actuator 69 is moved to disengage clutch gear 67 from the reels 38, to allow the same to rotate individually for rewinding. The crank arm 27 is then rotated clockwise as viewed in FIG. 1, to rewind the cords about reels 28 and to thereby reposition the racing figures 32 in the starting gate 30. As the rewinding shaft 25 is rotated for rewinding, each figure 32 is returned to its starting position abutting the rear portion 30A of the starting gate. Because of the friction slip connection between the racing figure 32 and its respective cord 42 it will be noted that each of the rewinding reels can be rotated or driven even though the racing figure associated therewith has abutted against the rear starting gate. Thus the friction slip connection between the racing figure 32 and its driving cords enables each figure to be returned to an aligned position at the starting end, even though the figures are misaligned at the finish. Because the friction torque of reels 28 relative to their shaft 25 is greater than the torque between reels 38 and their shaft 37, the rewinding of the cord about reels 28 is rendered possible when the crank 27 is actuated. The operation of the game is as follows:

With the racing figures 32 properly aligned at the starting position, i.e., the starting gate 30, the switch energizing the motor is actuated. When the circuit to the motor 40 is closed the main drive or winding shaft 37 and associated drive gear 39 is rotated. As the clutch gear 67 is normally disengaged, the winding shaft 37 will rotate independently or without effecting the drive of the winding reels 38 thereon. Actuation of the clutch operator 69 will cause the gear clutch 66 to be moved into meshing engagement with the driving gear 39 and each of the reel gears 38B. The clutch gear 66 being disposed in meshing relationship with drive gear 39 and the driven gears 38B of the respective winding reels 38 effects the rotation of winding reels 38 causing the cords 42 to be wound upon the respective hubs 38C. The main shaft 37 being connected in driving relationship to the animation shaft 45 will also cause the eccentrics 53 being driven to vibrate the cords 42 accordingly, which in turn imparts animation to the figures 32 advancing along the trackway as the cords are wound about the reels 38. Also with the cam shaft 54 connected in driving relationship to the main shaft 37 through gear box 63 the guide arms 57 of the respective winding reels 38 are non-uniformly oscillated to guide the lay of the respective cords laterally of the hub in a manner whereby the rate of winding of each cord upon the respective winding reels is varied, thereby varying the linear movement of the cord accordingly in a totally unpredictable manner. Thus the figures 32 advancing along the track or raceway will vary to render the arrival of any particular racing figure at the finish line unpredictable and following no precise formula or system. Therefore the slippage, the cross overs, accumulation, the varying laying of the cord on the winding reels, etc. all act to enhance and/or exaggerate the unpredictable result. As the lead racing figure 32 crosses the finish line it will actuate the switch operator 75 to activate switch 72 to deenergize the circuit to the motor thereby causing each of the winding reels 38 to cease rotating. Consequently the racing figures 32 attached to the respective cords 42 will freeze or stop in the position they finish at the time the motor is deenergized or stopped. In this manner the players can tell in what order their respective racing figures ended.

To impart animation to the racing figures **32** the animation shaft **49**, which is connected in driving relationship to the winding shaft **37**, is rotated so that the out-of-phase eccentrics **53** thereon impart a frequency of vibration to the cords **42** disposed in contact or being pulled thereunder. The vibration imparted to the cords **42** is transmitted therethrough to the figures **32** connected thereto. In the case of the horse racing figures **32** illustrated in FIG. **4–6**, the vibration will impart a swinging movement to their forelegs and hindlegs to simulate a running motion. Similar animation may be imparted to racing figures of other configurations.

To add additional authenticity to the race, sound effects may be provided. Such sound effects may be derived from a ratchet wheel **77** journaled on the end of animation shaft **49** to rotate therewith. A ratchet pawl **78** is associated with ratchet wheel **77** and which is mounted on the gear reduction box **63**. The periphery of the ratchet wheel **77** is provided with serrated edges or teeth **77A** to impart the desired frequency to the pawl **78**, the gear box **63** functioning also as a sounding means to amplify the vibration imparted to pawl **78** to thereby produce a desired sound, as for example, the galloping of horses along the track.

An alternate construction may comprise the inclusion of a sound track on the ratchet wheel **77**, which may be cooperatively associated with an stylus and diaphragm for reproducing a desired sound.

To effect the resetting of the racing figures **32** to their normal starting position, a player need only release clutch gear **67** from the reels **38** by suitable movement of actuator **69**, and to then rotate the crank **27** to effect the rewinding of the respective cords **42** onto the respective rewind reels **28**. As each of the racing figures **32** associated with the cords **42** are returned to the starting gate **30**, the abutment of such figures against the rear wall **30A** of the gate will permit the cords to slip relative thereto so that all the figures may be ultimately returned to their proper starting positions. Also, all cords **42** are retracted from the winding reels **38** and are ready for the next game. When all the racing figures have been reset in lateral alignment within gate **30**, the rewinding is discontinued.

With the horses or other racing figures **32** reset to their starting position, another race may be had by repeating the cycle of operations hereinabove described. The inherent variances in the rate of movement of the various cords **42** due to the construction of reels **38** and the amplification of such variances by the action of the cam means **55**, the results of successive races will vary in a completely random and unpredictable manner.

What is claimed is:

1. A race simulating game comprising:
- a plurality of readily detachable track sections defining a race track,
- said detachable track sections including a starting end section, a finishing end section, and at least one or more intermediate runway sections whereby the number of intermediate sections disposed between said start and finishing end sections renders the length of the race track variable,
- a plurality of racing figures mounted for movement along said track of connected sections,
- means for effecting independent drive for each of said racing figures,
- said latter means including a plurality of winding means mounted on said finishing sections, and a corresponding number of rewinding means mounted on said start section,
- a variable length cord extended between corresponding winding and rewinding means whereby said cord can be readily extended or distended to traverse the track formed of a predetermined number of sections,
- said racing figures being frictionally secured to each of said cords to slip relative thereto when a resistance to movement thereto exceeds said frictional forces therebetween,
- and means operatively associated with said winding means for independently varying the winding rates of the respective winding means in a random unpredictable manner to vary the speed at which the associated racing figure traverses said race track from the start to finish end sections.

2. The invention as defined in claim **1** and including means to impart animation to said racing figures.

3. The invention as defined in claim **1** wherein each of said track means comprises a channelway,
- an elongated slot communicating with said channelway and extending along said track means,
- said racing figure including a base portion receivable in said channelway,
- and a pedestal portion connected to said base portion and extending upwardly through said slot.

4. The invention as defined in claim **1** wherein said rewinding means includes:
- a rewind shaft rotatably journaled on said starting end section,
- a plurality of rewinding reels frictionally coupled to said shaft to rotate relative to said shaft in one direction and driven by said shaft in the opposite direction,
- and said winding means including a winding shaft rotatably journaled on the finishing end portion,
- and a plurality of corresponding winding reels mounted on said winding shaft,
- and said rewinding reels being frictionally coupled to said rewind shaft whereby the frictional coupling force of said winding reels to said winding shaft is less than the frictional coupling force between said rewind reels and the rewind shaft.

5. The invention as defined in claim **4** wherein said latter means include cam means, and guide means being responsive to said cam means to effect lateral displacement of said cord relative to the nonuniform hub of an associated winding reel means during a winding operation.

6. The invention as defined in claim **4** and including means for effecting the uni-directional drive of said rewind shaft in the rewinding direction only.

7. The invention as defined in claim **6** wherein said unidirectional drive means comprises a ratchet wheel journaled to said shaft, and
- a ratchet pawl operatively associated with said ratchet wheel to permit rotation of said ratchet wheel in the rewind direction only.

8. The invention as defined in claim **4** and including a motor means operatively connected to said winding shaft to effect the drive thereof.

9. The invention as defined in claim **8** wherein said winding reels include a pair of spaced apart flanges and a tapered hub interconnected between said flanges,
- one of said flanges having circumferentially spaced gear teeth formed thereon,
- a driving gear fixedly secured to said winding shaft,
- and a clutch gear pivotally mounted on said finishing end section for connecting said geared flanges of said winding reels into and out of driving relationship with said driving gear.

10. The invention as defined in claim **8** and including a switch means operatively connected in circuit with said motor,
- a switch actuator operatively associated with said switch means disposed in the path of each of said racing figures whereby said motor is deactivated when any of said racing figures effects the operation of said actuator to immediately stop the action of all the racing figures as the first figure crosses a simulated finish.

11. The invention as defined in claim **1** wherein the means for independently varying the winding rates of the respective winding reels comprises a cam means rotatably journaled on said finishing end portion,
- and a guide means responsive to the movement of said cam means to effect lateral displacement of said cord along the tapered hub of an associated winding reel.

12. A race simulating game comprising:

means defining a race track including a starting end section, a finishing end section, and an intermediate runway section,

each of said sections being separate, readily detachable sections, a plurality of racing figures,

means for effecting the independent movement of said racing figures,

said moving means including a rewind shaft and a plurality of rewind reel means mounted on said rewind shaft,

means for frictionally mounting each of said rewind reel means for independent rotation on said rewind shafts on said starting end portion,

means for effecting the uni-directional drive of said rewind shafts and associated rewinding reel means in the rewind direction only,

a winding shaft and a plurality of winding reel means mounted on said winding shaft on the finishing end section,

means for frictionally mounting said winding reel means for independent rotation on said winding shaft,

a flexible cord connected between corresponding winding and rewinding reel means for winding and unwinding said cord therebetween,

said winding reels being frictionally coupled to the winding shaft with a frictional force less than the frictional coupling force of said rewind reels and their rewind shaft,

said racing figures being connected to said cord for movement along said track as said cord is wound and unwound about said reel means,

said figures being frictionally secured to said cord to slip relative thereto when a resistance to the movement of said figure exceeds the frictional force between said figure and its associated cord,

a drive means operatively connected to said winding reel means to effect the winding of the cord thereon to advance said associated racing figure along said track means,

and means operatively associated with said winding reels for varying the winding rate of the cord upon the respective winding reel means to randomly vary the linear movement of an associated racing figure along said track means in an unpredictable manner.

13. The invention as defined in claim **12** wherein each of said winding reel means includes a hub of identical nonuniform diameter.

14. The invention as defined in claim **12** and including movable guide means operatively associated with each of said winding reel means to laterally guide said cord about the nonuniform hub of the associated complementary reel means.

15. The invention as defined in claim **12** and including a clutch means interconnecting the drive means with the respective complementary reel means.

16. The invention as defined in claim **12** and including a means operatively connected to said rewind reel means to reset the racing figures to their starting positions after each race.

17. The invention as defined in claim **12** including an electric drive motor operatively connected to said winding shaft to effect the drive thereof, and a clutch means for connecting said winding reels in driving connection with said winding shaft when said motor is actuated to effect the operation of said racing figures.

18. The invention as defined in claim **17** wherein said latter means includes a driving gear connected to said winding shaft,

a complementary driven gear operatively associated with each of said winding reel means,

a longitudinally extending clutch gear pivotally mounted on said finish end portion,

and means for effecting the movement of said clutch gear into and out of engagement with said driving and driven gears.

19. A race simulating game comprising:

a plurality of readily detachable track sections defining a race track,

said detachable track sections including a starting end section, a finishing end section, and one or more intermediate runway sections whereby the number of intermediate sections renders the length of said track variable,

a plurality of racing figures mounted for movement along said track,

means for effecting independent movement of said racing figures at variable, random, unpredictable rates of speed,

said latter means including a rewinding shaft rotatably journaled on said starting end section,

a uni-directional drive means operatively connected to said shaft to effect the drive thereof in the rewinding direction only,

a plurality of rewind reels frictionally journaled on said rewind shaft to rotate independently of said shaft in the unwinding direction,

a winding shaft rotatably journaled on the finishing end section,

a corresponding number of winding reels frictionally coupled to said winding shaft to rotate relative to said shaft,

said winding reels being frictionally coupled to said winding shaft with a frictional force which is less than the frictional force coupling said rewind reels to said rewind shaft,

a flexible cord interconnected between corresponding winding and rewinding reels,

said racing figures being frictionally secured to their respective cord to permit slippage therebetween to slip relative thereto when a resistance to the movement of said figures exceeds the frictional force therebetween,

an electric motor drivingly connected to said winding shaft,

a driving gear journaled on said winding shaft to rotate therewith,

said winding reels including a geared flange and a tapered hub about which said cord is wound and unwound,

the tapered hub of each winding reel being similarly constructed,

a clutch gear pivotally mounted on said finishing end section for selectively coupling said motor into and out of driving relationship with each of said winding reels,

cam means operatively associated with each of said winding means,

guide means operatively connected with said cam means to laterally guide said cord about the hub of an associated winding reel to vary the relative linear speed of the figure attached to said cord,

said cam means being connected in driving relationship to said winding shaft,

means operating on said cords to impart a frequency of vibration thereto to impart animation to the racing figures attached thereto,

a switch connected in circuit with said motor,

a switch actuator disposed in the path of each of said racing figures adjacent the finishing end portion whereby the motor is deactivated when contact is made by the first of said racing figures reaching the finishing end section thereby halting all of the respective game figures in their relative race ending positions.

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