Sept. 20, 1960 R. L. PUNSHON 2,952,941

BRAKE CONTROLLED MAGNETIC GAME

Filed May 14, 1958 5 Sheets-Sheet 1

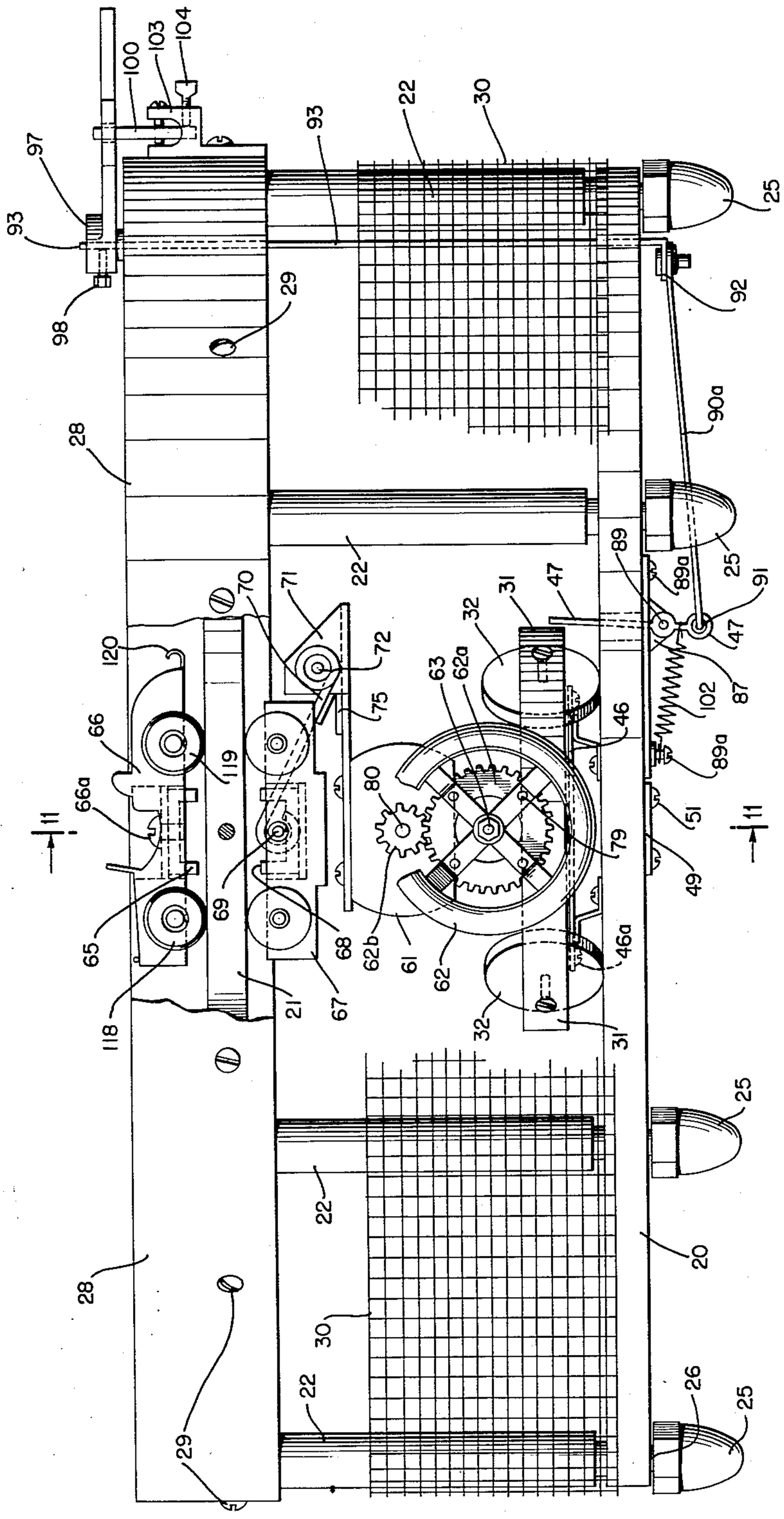


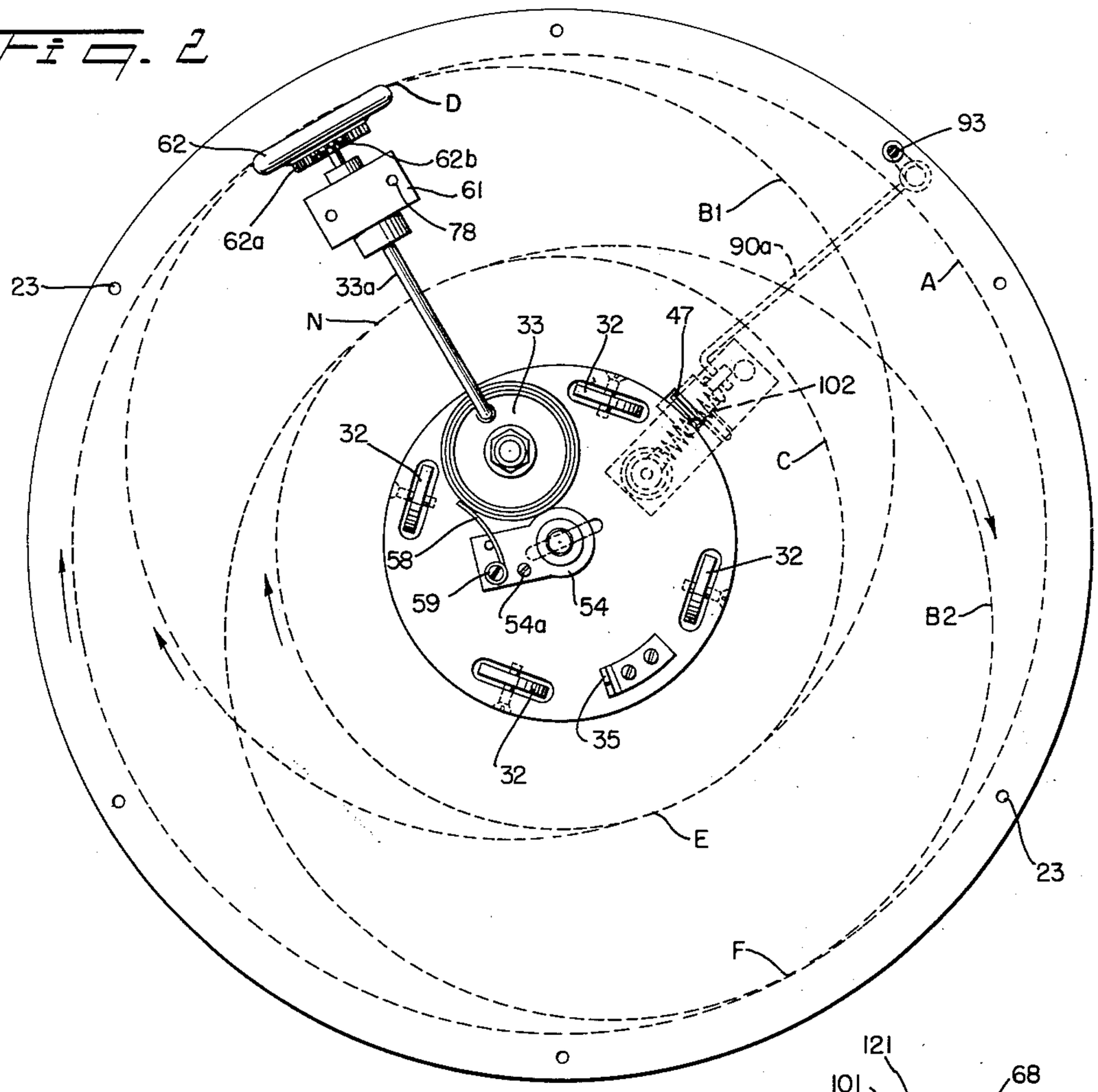
FIG. 1

Sept. 20, 1960 R. L. PUNSHON 2,952,941

BRAKE CONTROLLED MAGNETIC GAME

Filed May 14, 1958 5 Sheets-Sheet 2

Fig. 2



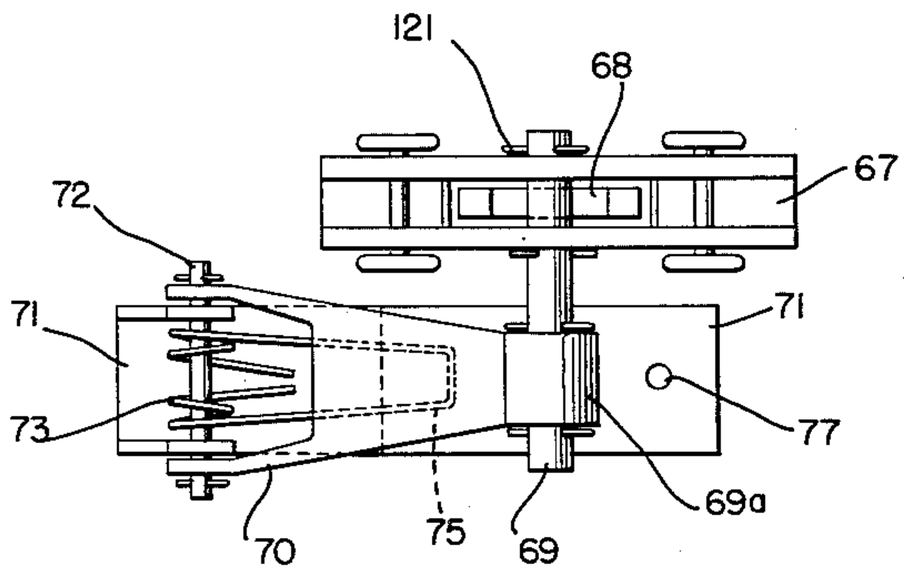


Fig. 3

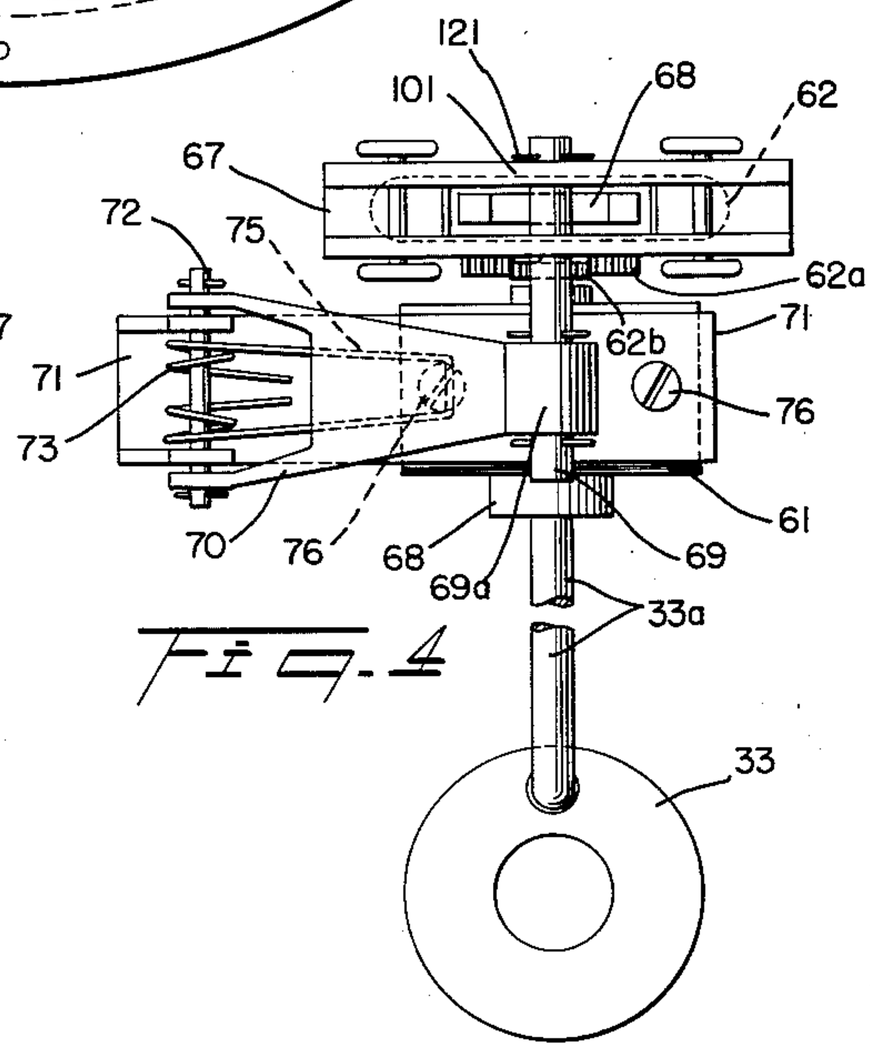


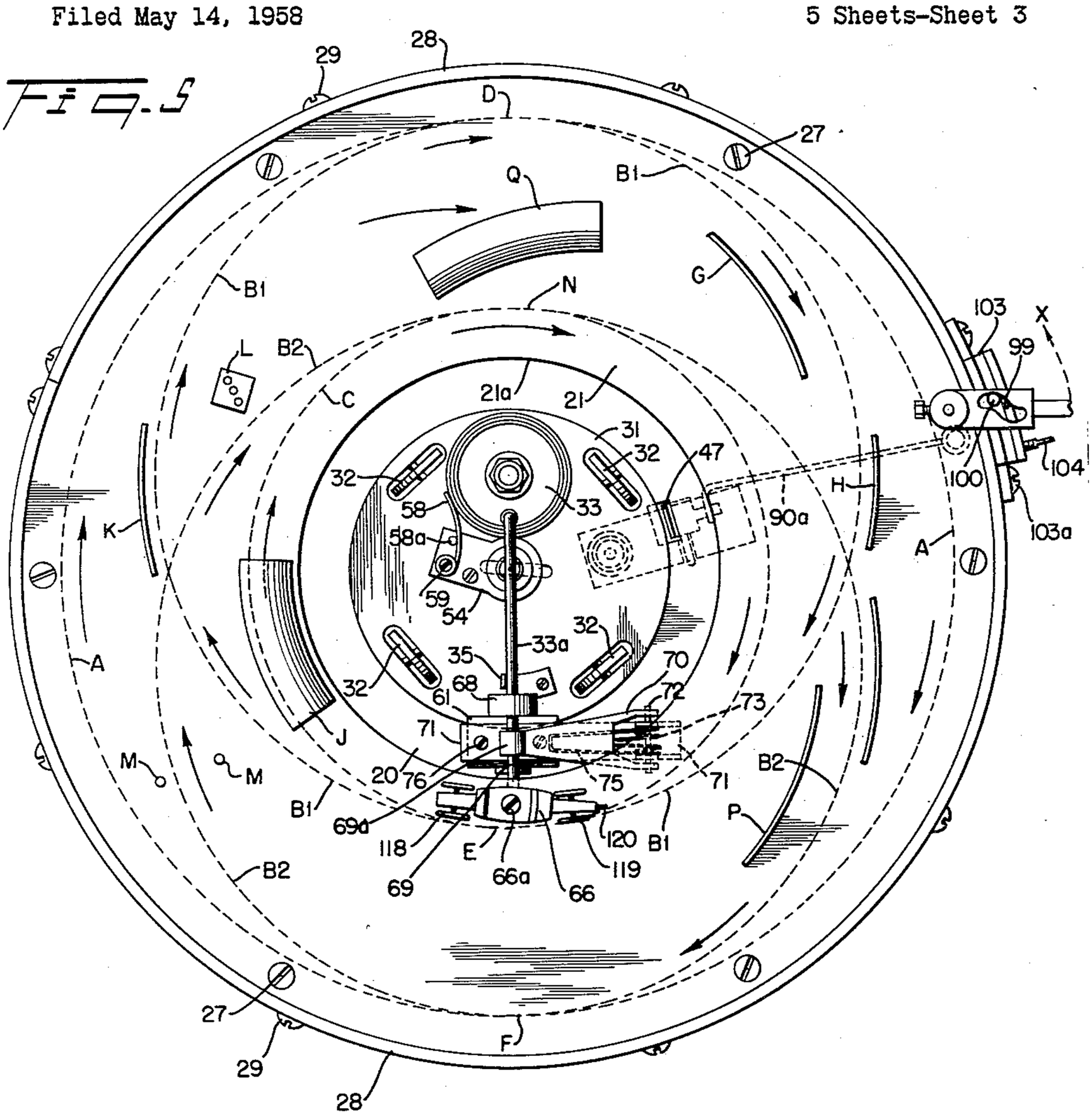
Fig. 4

Sept. 20, 1960 R. L. PUNSHON 2,952,941

BRAKE CONTROLLED MAGNETIC GAME

Filed May 14, 1958 5 Sheets-Sheet 3

Fig. 5



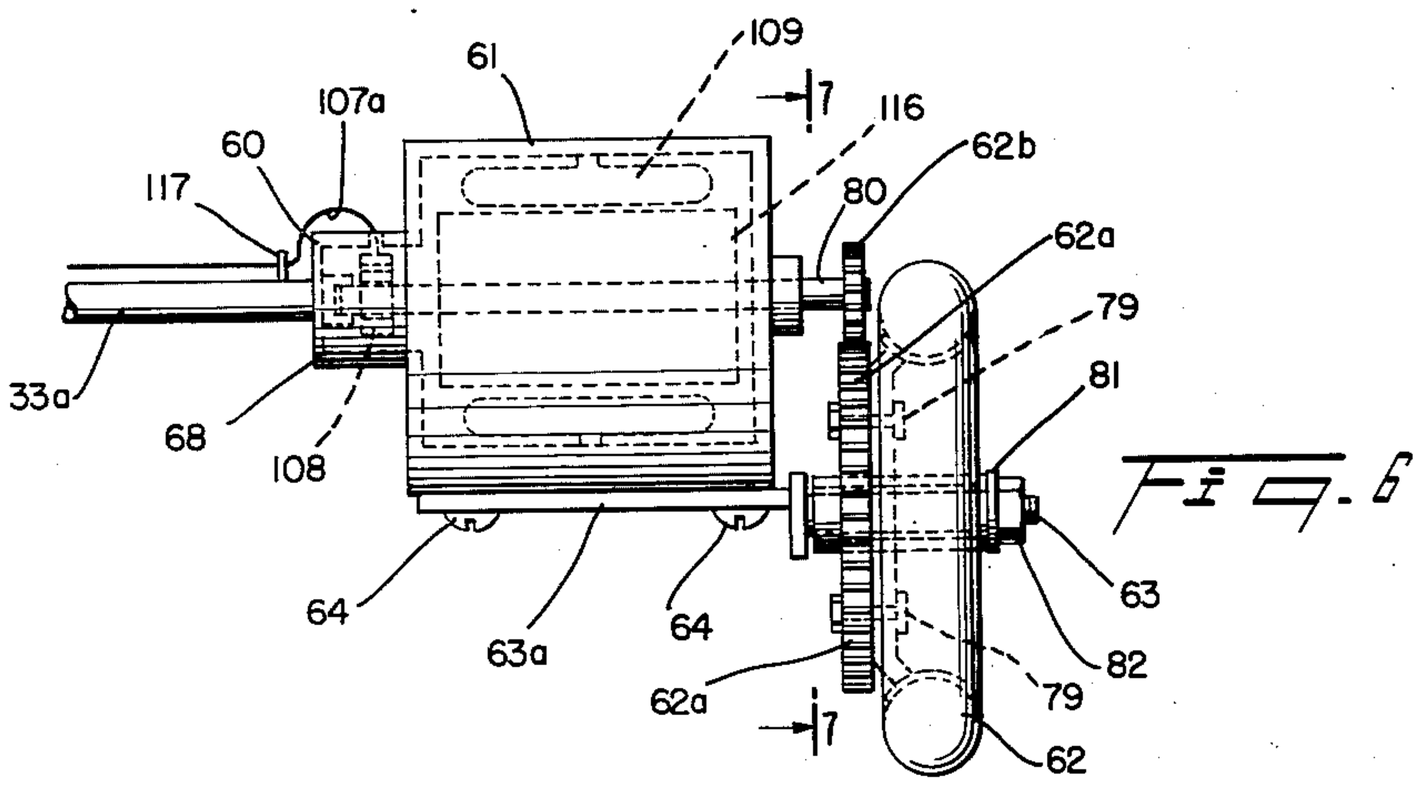


Fig. 6

BRAKE CONTROLLED MAGNETIC GAME

Filed May 14, 1958 5 Sheets-Sheet 4

Fig. 7

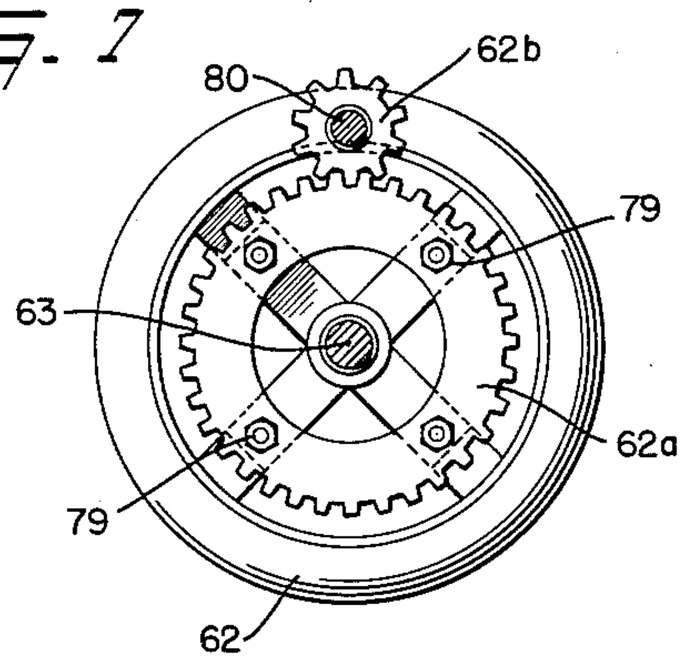
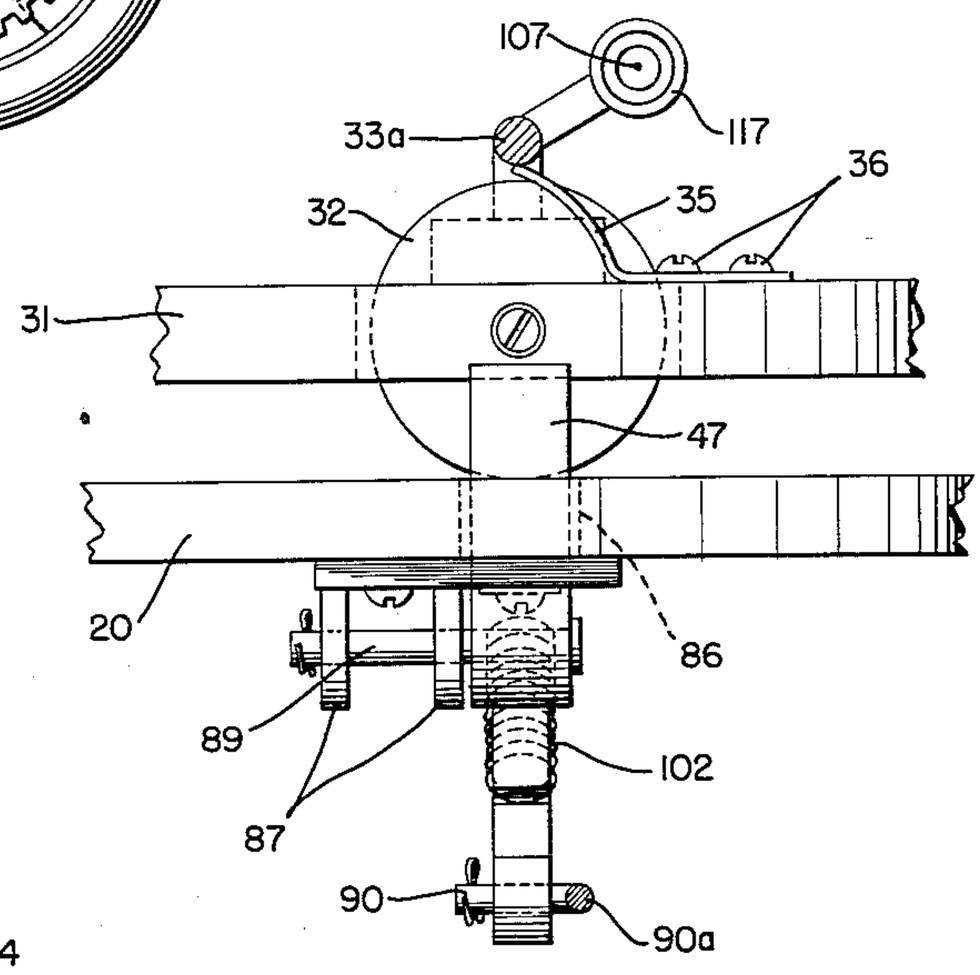


Fig. 8



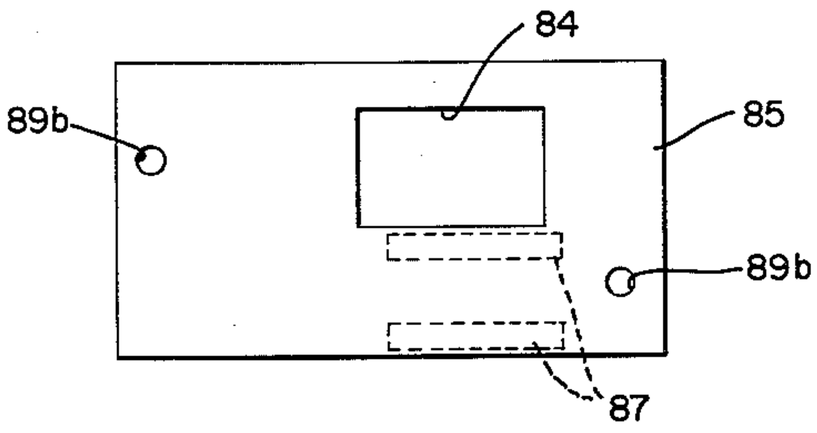


Fig. 9

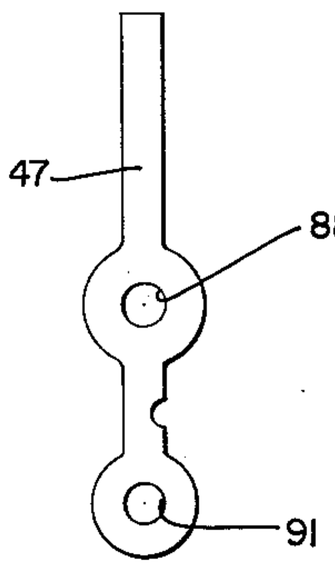


Fig. 10

Sept. 20, 1960 R. L. PUNSHON 2,952,941

BRAKE CONTROLLED MAGNETIC GAME

Filed May 14, 1958 5 Sheets-Sheet 5

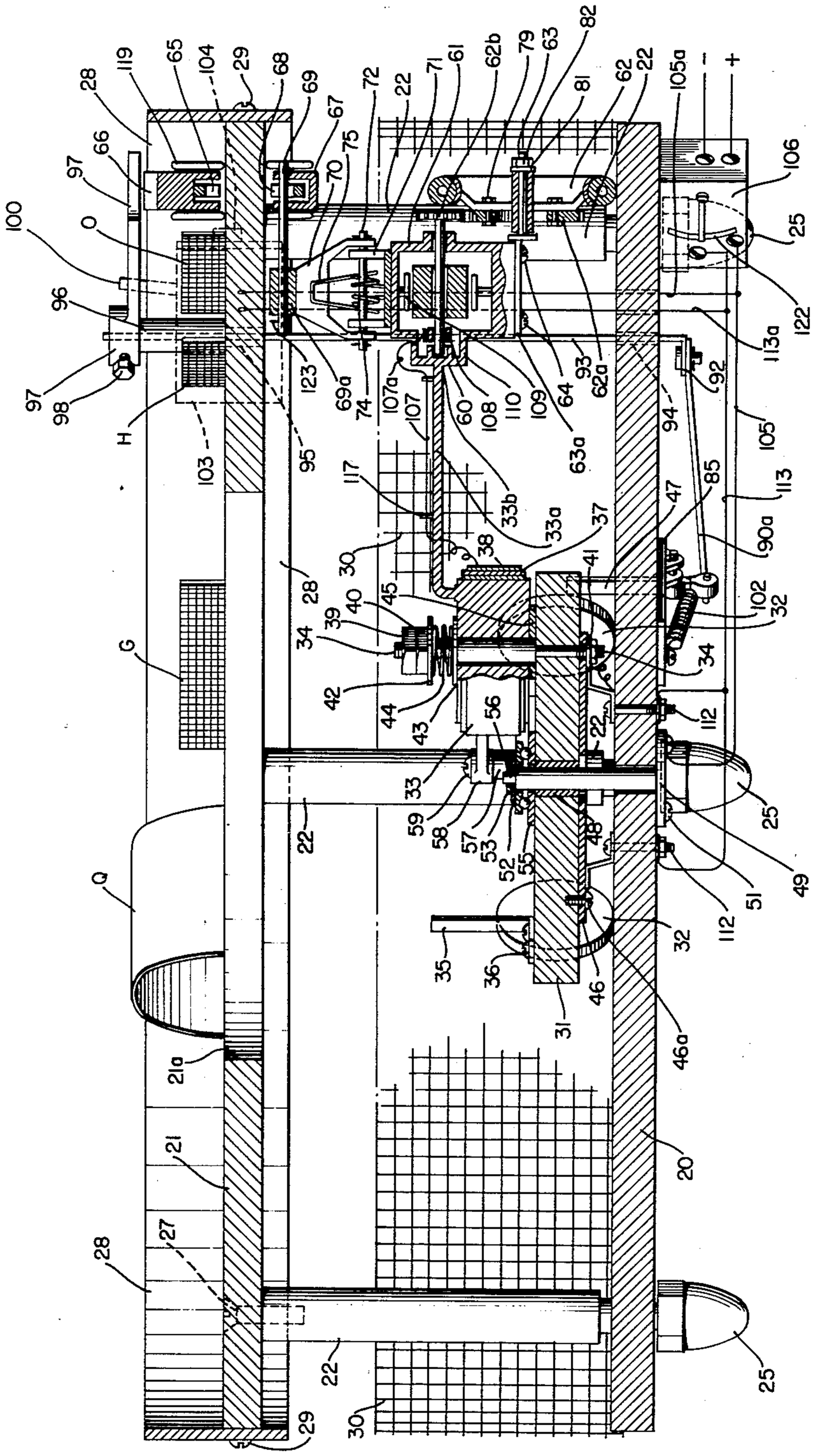


FIG. 11

United States Patent Office

2,952,941

Patented Sept. 20, 1960

2,952,941

BRAKE CONTROLLED MAGNETIC GAME

Richard L. Punshon, 2944 Retallark St., Regina, Saskatchewan, Canada

Filed May 14, 1958, Ser. No. 735,173

6 Claims. (Cl. 46—240)

This invention relates to a brake controlled magnetic game and is a continuation in part of my United States patent application for magnetic controlled toy equipment, Serial Number 601,250, filed July 31, 1956, now abandoned.

One object of my invention has been to provide a brake controlled electrical driven magnetic game of relatively simple construction, comprising a housing having a bottom floor, and a top floor having a circumferential aperture in its central portion, and said floors spaced apart by hollow pillars and secured together by bolts through the floors and pillars.

A further object has been to provide a turn table mounted on a plurality of wheels wherein the table may turn around a post in the center of a circumferential floor.

A further object has been to provide an arm integral at one end with an electrically driven motor, and having a hollow bearing integrally secured to its other end to fit and turn on a post on and adjacent the perimeter of a turn table.

A further object has been to provide a traction wheel with its axle supporting an electrically driven motor which drives a pinion gear and the pinion gear drives a ring gear which is secured to the traction wheel which when in motion travels in a circle on a circumferential floor.

A further object has been to provide a brake controlled electric driven magnetic game wherein the player operating the game controls all the movements of the motivated traction wheel by manipulating a brake.

A further object of this invention is to provide a brake controlled game wherein the person operating the game can, by manipulating the brake of the game machine at the precise moment, cause the mechanism to change the course of a traction wheel from one circular movement to another while said traction wheel is in motion.

A further object of my invention is to provide a carriage mounted on a spring actuated hinge secured to the top of a conventional motor, and the said spring actuated hinge having one end of a bar or shaft secured to one of its ends, and the other end of the shaft to project through the body of a magnet supporting carriage, to support said carriage upward against the underside of the upper or top floor of the game housing.

A further object of my invention is to provide a magnet conveying carriage mounted on a conventional motor and sustained or supported to the underside of the top floor of the game housing by hinged spring means connecting said carriage to said top floor, all for the purpose of guiding by magnetic attraction a free moving member such as a toy car or the like positioned on the top surface of said top floor of the game housing.

A further object of my invention is to provide removable hazards such as gateways, walls, tunnels and the like to be placed on the top floor of the housing of my game in order that the player of the game may have an objective in steering toy cars and the like around and

through these hazards without missing the target aimed for.

A further and important object of my invention is that it depends on the skill used by the person operating the brake at the precise instant as to whether the free moving toy car is guided safely around or clear of the hazards or hazard.

A further object of my invention is to provide an electrical motivated magnetic game which can be entirely manipulated by skillful use of a brake lever only, to cause a motor driven traction wheel supporting a motor and magnet to travel in three different circles wherein the brake lever can be manipulated by precise coordination of the hand and eye of the operator to cause said motivated traction wheel and motor with magnet to change its course of circular travel from one circle to another circle of a different circumference while in revolutionary movement.

A further and important object of my invention is that the construction of the game may be modified to effect cheap manufacture by constructing most of the parts of the mechanism of plastic masonite, wood or other non-magnetic materials.

Other objects and advantages inherent in my invention will be apparent from the following description of an embodiment thereof and the appended drawing wherein—

Figure 1 is a horizontal view in elevation with parts cut away to allow visualization of mechanism within the housing.

Figure 2 is a top plan view of the bottom floor of the game housing illustrating the turn table, commutator and arm to motor and traction wheel, and brake assembly in dotted lines.

Figure 3 is a top plan view of the spring actuated hinge connected to the magnet conveying carriage by a bar or shaft.

Figure 4 is a top plan view of the spring actuated hinge secured to the top of the motor, also illustrating the hinge bar or shaft in assembly with the spring actuated hinge and the magnet conveying carriage, also illustrating the commutator arm and bearing and the traction wheel in dotted lines, and a view of the ring gear and pinion.

Figure 5 is a top plan view of the top floor of the game housing illustrating the toy car on the top floor, and the turn table and commutator assembly attached to motor and the spring actuated hinge are seen on the bottom floor viewing down through the large circumferential aperture in the top floor.

Figure 6 is a horizontal view of a conventional motor mounted on my axle shaft, and illustrating the ring gear being attached to the traction wheel, and the pinion gear attached to the motor armature shaft.

Figure 7 is a view in elevation taken on the line 7—7 of Figure 6 illustrating the inside of the traction wheel and ring gear being bolted together, also illustrating the pinion and the sectioned traction wheel axle shaft and motor armature shaft.

Figure 8 is a rear view of the brake assembly attached to the underside of the bottom floor, also illustrating the upper end of the brake lever contacting the periphery of the turn table, also a view of one of the turn table wheels, and an illustration of the commutator arm passing over the slip spring, and a view of the electric current conducting wire being threaded through an eye which is welded to the commutator arm.

Figure 9 is a top plan view of the brake assembly supporting plate.

Figure 10 is a vertical view in elevation of the brake lever.

Figure 11 is a horizontal section taken on the line 11—11 of Figure 1 illustrating in part the total mechanism of the invention.

Construction

Like reference numerals refer to like parts throughout the specification and drawings.

Referring to the drawings, a brake controlled magnetic game according to my invention comprises a housing illustrated in Figures 1, 5 and 11 wherein the mechanism of the brake controlled game is illustrated.

The housing of the game seen in Figure 1 has two circumferential floors, a bottom floor **20**, and a top floor **21**, the bottom and top floors **20** and **21**, are spaced apart by a plurality of hollow pillars **22** equispaced adjacent the perimeter of the floors **20** and **21**, and the top floor **21** has a plurality of countersunk apertures **23** equispaced adjacent its perimeter to receive the taper headed bolts **24**, the bolts **24** project down through the apertures **23** and through the hollow pillars **22** and through apertures **26** equispaced adjacent the perimeter of the bottom floor **20** and screw into legs or feet **25** of the housing floor **20**, and in Figure 5 is seen that the heads of the bolts **24** are slotted, designated by **27** to receive a screw driver to hold them from turning while turning up the feet **25** to secure the entire housing in fixed position. There is a narrow wall **28** projecting above and around the top floor **21** to prevent toy cars and the like from falling off while the game is in operation, and the wall **28** is secured around the edge of floor **21** by a plurality of screws **29**. There is a section of wire screen **30** illustrated on the housing in Figure 1 which wire screen is intended to go around the housing for appearance and to allow circulation of air for cooling the motor, and any suitable method of securing the screen **30** to the housing may be used.

Referring to the sectional view **11** which illustrates a part of every part of the mechanical mechanism of the game machine, and the parts claimed to be as new invention are: a turn table **31** and turn table wheels **32**, and an integral commutator bearing **33** and arm **33A** rotatably mounted on a vertical axle **34**, and a slip spring **35** is secured to the top side of the table **31** by screws **36**. The commutator is composed of the bearing **33** having a circumferential or cylindrical or Bakelite insulator sleeve **37** pressed around its periphery to prevent electricity passing from the brass shell or sleeve **38** across to the bearing **33**, the brass sleeve **38** is pressed around the outer circumference of the insulator sleeve **37**, the parts **33**, **37** and **38** are called the commutator, and the commutator is rotatably mounted on the vertical axle **34**, the axle **34** is turned or machined down at its ends to leave a spindle and shoulder at each end of the axle in order that the ends of the axle spindles may be threaded to receive nuts **39**, **40** and **41** and washers **42**, and **43**, and a clutch compression spring **44**. The commutator is positioned and turns on a fibre or felt washer **45** positioned between the commutator bearing **33** and the turn table **31**, as seen in Figure 11, one spindle end of the axle **34** projects down through the washer **45** and through the turn table **31**, and through a circumferential plate **46** and a nut **41** is turned up on the spindle end of the axle **34** against the plate **46** which secures the commutator axle **34** firmly in a symmetrical vertical position relative to the table **31**, the commutator bearing **33** rotates around the axle **34** when the brake lever **47** is in contact with the turn table **31** and stops the turn table from revolving.

The turn table **31** is mounted on a plurality of wheels **32** as illustrated in Figures 11, 2 and 5, and has a hollow bearing **48** pressed into its central portion, and the bearing **48** and table **31** is slidably and rotatably mounted on a vertical post **49** as seen in Figure 11 which has a flat head **50**, and the post **49** projects through the center of the bottom floor **20** and is secured to the bottom floor **20** in a symmetrical vertical position relative to table **31** by screws **51** through its head **50**, the purpose of the post **49** is to hold the turn table on center during its revolutionary movement on the wheels **32**, the post **49** is machined down at its upper end to form a spindle **56** which can be threaded to receive nuts **52** and **53**, there is a bottom ball race **54** secured to the table **31** by a screw **54***a* seen in Figure 2 and a top ball race **55** around the upper end of the post **49** and ball bearings between the races **54** and **55** and the nut **52** is turned down on the spindle end **56** of the post **49** to exert sufficient pressure on the ball races to maintain the turn table **31** from jumping or moving out of coaxial parallel alignment with the floor **20** during its circular movement, when the nut **52** has been turned down on the race **55** to the desired pressure it is locked in position by lock nut **53**. There is a vertical post **57** integral with the ball race **54** on which one end of an electrical current transmitting brush **58** is secured by a screw **59**, and the other end of brush **58** is in constant contact with the brass sleeve **38** during its revolutionary movement, also when not in motion.

The end of the commutator arm **33A** is welded at **33***b* to the commutator housing **60** of the conventional motor **61**. There is provided a traction wheel **62** rotatably mounted on an axle **63** being flat at one end **63***a*, and on this flat portion **63***a* of the axle **63** is mounted a conventional type of motor **61** which may be a motor to be driven by alternating electric current or, a motor designed to be driven by direct electric current, the motor **61** is secured to the portion **63***a* of the axle **63** by substantial screws **64**.

As it is necessary to rotate a substantial conventional magnet in circles adjacent the underside of the floor **21** to attract and guide a magnet **65** carried by a free moving toy car **66** which is to travel in circles on the top of the floor **21**, a magnet conveying carriage **67** is provided to carry a magnet **68**, and the carriage **67** is supported upwardly against the underside of floor **21** by a bar **69** which is held in the turned end **69***a* of the upper leaf **70** of a spring actuated hinge, the spring actuated hinge has two leaves **70** and **71**, the bottom leaf **71** is more easily visualized in Figures 1, 3 and 4, and there is a hinge pin **72** connecting the hinge leaves **70** and **71** which is illustrated in Figures 1, 3, 4, and 11 and around the hinge pin **72** is coiled a spring **73** and its ends **74** press down on the hinge **71** forcing the end at **75** to deliver pressure to the underside of the hinge leaf **70** which in turn forces the bar **69** and the magnet conveying carriage **67** upwards against the underside of the top floor **21** and maintains the carriage **67** against the floor **21** while the game is in motion as well as when not in motion, the spring actuated hinge assembly is positioned on the top of the motor **61** as seen in Figures 1, 3, 4, and 11 and is secured to the motor **61** by screws **76** seen in Figure 4 which go through apertures **77** seen in Figure 3 and threaded into apertures **78** seen in Figure 2. The object of the spring actuated hinge **70** and **71** is to support a round bar or shaft **69** rigidly in a horizontal position projecting through a circumferential hollow bearing **101** seen in Figure 3 machined out of the carriage body **67**, and the carriage **67** is rockably and rotatably mounted on the shaft **69** to insure all four wheels of the carriage **67** to contact the underside of floor **21** while travelling around and against the underside of floor **21**. In order that the conventional motor **61** drives the traction wheel **62**, a ring gear **62***a* is bolted to the spokes of the traction wheel **62**, by bolts **79** and the ring gear **62***a* is driven by a pinion gear **62***b* mounted on the armature shaft **80** of the motor **61**, the traction wheel **62** is held in place on the axle **63** by a washer **81** and a nut **82**. Figures 6 and 7 illustrate the motor and traction wheel assembly. Figure 7 illustrates armature shaft **80** and axle **63** sectioned.

The brake assembly is illustrated in Figures 1 and 11, and in dotted lines in Figures 2 and 5, and Figure 8 is a back or rear view of the brake pedal **47** as directed by the small arrow **83** seen in Figure 5, the view in Figure 8 illustrates the brake pedal **47** contacting the lower edge of the turn table **31**, the upper end of the brake

pedal **47** projects through an aperture **84** in the plate **85** and through an aperture **86** cut through the floor **20**, the plate **85** has two downward projecting brackets **87** integrally joined to it, and there are apertures through the brackets **87**, the brake pedal **47** has an aperture **88** through its intermediate portion seen in Figure 10 and the pedal **47** is mounted in rockable position on a pin **89** which passes through the pedal bearing or aperture **88** seen in Figure 10 and through apertures in the brackets **87**, and the assembly of the plate **85**, pedal **47**, pin **89**, spring **102** are secured to the underside of the floor **20** by screws **89***a* through aperture **89***b* seen in Figures 1, 8 and 9, the end **90** of the drag link or rod **90***a* is hooked through the aperture **91** in the bottom end of the pedal **47**. In Figure 11 it illustrates the drag link or rod **90***a* connected to the turned end **92** of the vertical rod **93** which projects up through aperture **94** through the floor **20**, and through an aperture **95** through the top floor **21**, and through a short piece of piping **96**, and through the end of the brake handle **97** where it is secured by a set screw **98**. The brake handle **97** has a slot **99** through its shank to receive a switch handle **100**. The piping **96** rests on the floor **21** and is for the purpose of a rest for the brake handle **97** and prevents the rod **93** and handle **97** from dropping down out of position. The brake spring **102** seen in Figures 1, 8 and 11 and in dotted lines in Figures 5 and 6 is for the purpose of retaining the brake pedal in inoperative position. There is a light switch box **103** in assembly with the brake assembly which has a light bulb **104** projecting from the switch box **103**, and when the brake handle **97** is at X to put the pedal **47** against the turn table **31** it also moves the switch handle **100** which turns on a light in the light bulb **104**, and the instant the brake handle **97** is released the tension spring **102** pulling at the bottom end of pedal **47** rocks the upper end of pedal **47** away from the turn table **31** releasing the turn table **31** to start revolving, also throwing the brake handle **97** in reverse which in turn moves the switch handle **100** which turns off the light in the bulb **104**.

The motor **61** is driven by an electric current supplied to it through a wire **105** leading from a conventional variable transformer **106**, the wire **105** carries the electric current to the head **50** of the post **49** and the current continues up the post **49** into the spindle **56** of the post **49** and from the spindle **56** to the nut **52** and from the nut **52** into the ball race **55** and passes from the ball race **55** into the ball race **54** through the ball bearings and up the post **57** and from the post **57** to the brush **58** and the brush **58** carries the current to the brass sleeve **38** and the current passes from the brass sleeve **38** into the wire **107** and along the wire **107** and around the curved end **107***a* and down through the commutator housing **60** where it can be seen connected to a commutator brush not numbered, and the commutator brush delivers the current to the armature commutator **108** which drives the motor **61**, and the electric current is returned from the armature **116** through the field coils **109** to the motor casing **110** back through the commutator arm **33***a* to the commutator bearing **33** and from the commutator bearing **33** the current passes through the washer **43** and up through the compression spring **44** and the washer **42** into the nut **40** and from the nut **40** down through or along the post **34** into the nut **41** and from the nut **41** into the circumferential plate **46** and passes from the circumferential plate **46** into the brushes **111** and from the brushes **111** down through the bolts **112** and from the bolts **112** into the bifurcated end of the ground wire **113** and from the ground wire **113** to the transformer **106**. The wires **114** and **115** go out from the transformer to a source of electrical supply. While the transformer is illustrated in Figure 11 it is only to illustrate that the transformer **106** is in the line and when in actual use will not be placed under the game machine but will be on the table or wall within handy reach of the player, and it is obvious that an electrical current switch must also be in the assembly of the wiring in order to start and stop the motor.

It is to be noticed that the brushes **111** are in a reversed position in Figure 11 than in Figure 1 and is not to be considered as it matters not which way the brushes **11** point as they will contact the circumferential plate **46** as good one way as the other.

While the use of a conventional variable alternating or direct current motor has been mentioned in the specification wherein a conventional variable transformer is necessary in the assembly of motor and electric wiring it is to be understood that a conventional alternating current asynchronous induction motor could be used, thus eliminating the necessity of a conventional variable transformer.

In Figure 2 it is illustrated that the traction wheel **62** and motor **61** are offset at the end of the arm **33***a* in order that the traction wheel **62** toes outwardly to cause a pulling effect on the arm **33***a* as the outward pulling of the traction wheel in combination with the clutching effect by the pressure of the compression spring **44** on the commutator and relayed pressure from the commutator to the turn table **31** causes the turn table to turn with the arm **33***a* while traction wheel is in motion, and when the arm **33***a*, commutator, and turn table **31** are in the position as illustrated in Figure 2 and the brake **47** is off. The little arrow on the front of the traction wheel indicates the direction in which the wheel **62** is turning.

The wire **107** is supported on the arm **33***a* by an eye **117** seen in Figures 11 and 8. The light switch box **103** is secured to the edge of the upper floor by screws **103***a*. In Figure 5 it is illustrated the front wheels **118** of the toy car **66** are turned to the right from the purpose of following circles and the hind wheels **119** are turned to the left for the purpose of following circles. The electric current conducting wire **107** is illustrated in Figure 11 only. Pins **121** seen in Figure 3 go through apertures **123** seen in Figure 11. Figure 8 illustrates the commutator arm **33A** passing over the slip spring **35**, and it is only when the brake pedal **47** engages the table **31** that the slip spring cannot move the table **31** and must bend back each time the arm comes around into contact with it. Referring again to the light switch box **103**, there are two electric conducting wires **113A** and **105A** seen in Figure 11. There is a pin **58A** seen in Figure 5 which holds the brush **58** to the brass sleeve **38** seen in Figure 11. **21A** designates aperture in top floor. Hook **120** may be used for trailer purposes to pull other free moving members not illustrated or specified. Screw **66A** secures magnet **65** to carriage **66**.

Operation

Figure 2 illustrates the traction wheel **62** at or in junction D, and if the brake **47** is in neutral position, the traction wheel when in motion will follow or travel the permanent or stationary circle A around to junction F, and if the brake **47** is applied to the perimeter of the turn table **31** while the traction wheel is in junction F the traction wheel will leave circle A at junction F and revolve around commutator axle **34** and follow the dotted line circle B2 which junctions with stationary circle C at junction N, and if the brake **47** is released just before the arm **33A** contacts the slip spring **35** see Figure 5, the arm **33A** will stop revolving around axle **34**, and the table **31** and commutator assembly will then revolve or rotate on the central axis or post **49** of the table **31**, and the traction wheel will leave circle B2 at junction N and travel on circle C, when the traction wheel has traveled from junction N on circle C to junction E and if the brake is applied at the correct time to stop the turn table from turning when the traction wheel **62** approaches the central part of junction E the traction wheel **62** and commutator arm **33A** and bearing **33** will rotate around the commutator axle **34**, and the traction wheel **62** will leave

circle C at junction E and travel circle B1 back to junction D where it started from.

The circles A and C are stationary circles, and the circles B may be made at any point between the circles A and C. If the traction wheel is traveling circle A or C and the brake 47 is applied to stop the turn table 31 from revolving, the traction wheel will instantly leave the circle A or C that it may be traveling on and rotate between circles A and C on a B circle, and as long as the brake 47 is held against the turn table 31 the traction wheel will revolve on this B circle which is positioned between circle A and circle C and junctions with the circles A and B. Anytime the brake is applied the traction wheel will make a B circle at any point around and between circles A and C. Figure 2 is for the purpose of illustrating the movements of the traction wheel 62 which are indicated by arrows near the circles, and the circles A, B and C are illustrated in dotted lines, and only two B circles are drawn in dotted lines and termed B1 and B2 circles for explanatory reasons only. The circles A, B, and C illustrated on the bottom floor 20 in Figure 2 are directly below the circles A, B and C illustrated on the top floor 21 seen in Figure 5 and any position on the bottom floor 20 the traction wheel 62 is in, the toy car 66 on the top floor will be in the same identical position, for example if the toy car 66 is traveling circle B1 on the top floor 21 the traction wheel 62 on floor 20 directly under the toy car 66 will also be traveling circle B1 on the bottom floor and both the car 66 and wheel 62 will be in the same position on circles B1 on the top and bottom floors relative to the game housing.

The brake controlled magnetic game operates as follows. With the motor 62 in motion and the brake handle 97 in hand, and the toy car traveling circle A, the person hereinafter called the player wishes to control the toy car by using the brake handle 97 to guide or steer the toy car around and between fences, gateways, tunnels, and the like, which may be called hazards. It is the object of the player to steer the toy car to go around the circle B1 and between the fences G and H in order to accomplish his objective he must wait for the toy car 66 which is represented by large arrows to go around on circle A and if the player moves the brake handle 97 along the dotted line to X the brake will be applied, and in this example the player put the brake on at the right instant when the toy car 66 was moving into junction D which caused the toy car to leave circle A and travel circle B1 and go between fences G and H and on and around on circle B1 to the junction E of B1 and C, and as the player wishes to steer the car 66 through tunnel *j* he releases the brake handle 97 when the arm 33A has nearly reached the slip spring 35 see Figure 5, and the toy car leaves circle B1 and travels circle C through the tunnel *j* and continues to go around circle C and back to junction E, the player then wishes to steer the toy car 66 between the fence K and the dice L, to accomplish this movement the player applies the brake and the toy car 66 leaves circle C at junction E and travels circle B1 going between the fence K and the dice L and continues to travel circle B1. A further objective the player has is to steer the car "between gateway posts or pins M and between fences O and P and when the toy car 66 traveling circle B1 arrives in junction D the player releases the brake and the toy car 66 leaves circle B1 and travels circle A around to junction F where the brake 47 is applied to the table 31 and the toy car 66 leaves circle A and travels circle B2 through and between gateposts or pins M, and continues around on circle B2 between fences O and P and back to junction F where the player releases the brake and the toy car 66 leaves circle B2 and travels circle A, and the player now wishes to steer the top car 66 through the tunnel Q but has no dotted line circle to go by and must use exceptional accuracy in the use of the brake as well as judging the right place to leave circle A to cause the toy car 66 to travel on an invisible circle B which goes through the tunnel Q, and the player fails as he was too late in applying the brake and caused the toy car 66 to run into the side of the tunnel or hazard Q.

Modifications may be made in the preferred embodiment of the invention described and illustrated herein, and not in a limited sense, without departing from the spirit and scope of the invention as defined by the appended claims.

What I claim and desire to secure by Letters Patent is:

1. An electro-mechanical toy of skill comprising, means defining a planar surface, a toy vehicle freely movable on and about said surface, hazards on said planar surface about and through which the vehicle is to travel and avoid contact therewith, a revolvable turn-table pivotally mounted for rotation below said surface, rotatably driven means eccentrically and pivotally mounted on said turn-table for rotatably driving the turn-table when said turn-table is free to rotate and having means for rotating independently of said turn-table when said turn-table is rendered immobile, a carriage carried by said driven means and disposed radially of the turn-table and movably supported beneath and adjacent to said planar surface, a magnet-responsive element on said vehicle, a magnet on said carriage to attract said element on the vehicle so that the vehicle moves in correspondence with the movement of said carriage, means operable at will for rendering the turn-table immobile or freely mobile to selectively cause the driven means to rotate independently about its own pivot on the turn-table or to rotate with the turn-table about the pivot of the turn-table and thereby to cause the vehicle to travel in a manner to avoid the hazards on said planar surface.

2. An electro-mechanical toy of skill comprising means defining a planar surface, a toy vehicle freely movable on and about said surface, removable hazards on said planar surface about and through which the vehicle is to travel and avoid contact therewith, a revolvable turn-table pivotally mounted for rotation in a plane below and substantially parallel to said surface, rotatably driven means eccentrically and pivotally mounted on said turn-table for rotatably driving the turn-table when said turn-table is free to rotate and having means for rotating independently of said turn-table when said turn-table is rendered immobile, a carriage carried by said driven means and disposed radially of the turn-table and movably supported beneath said planar surface and adjacent thereto, a magnet-responsive element on said vehicle, a magnet on said carriage to attract said element on the vehicle so that the vehicle moves in correspondence with the movement of said carriage, means operable at will for rendering the turn-table immobile or freely mobile to selectively cause the driven means to rotate independently about its own pivot on the turn-table or to rotate with the turn-table about the pivot of the turn-table and thereby to cause the vehicle to travel in a manner to avoid the hazards on said planar surface.

3. An electro-mechanical top of skill comprising, first means defining a first substantially planar surface, a toy vehicle freely movable on and about said first planar surface, hazards positionable on said first planar surface about and through which the vehicle is to travel and avoid contact therewith, second means defining a second substantially planar surface spaced from the first planar surface and disposed substantially parallel thereto, a revolvable turn-table pivotally mounted for rotation in a plane substantially parallel to the second surface, a carriage movably supported beneath and adjacent to said first planar surface, rotatably driven means pivotally and eccentrically mounted on the turn-table and independently revolvable thereon when the turn-table is rendered substantially immobile and for rotatably driving the turn-table when the turn-table is free to rotate, means on said driven means for movably supporting said carriage radially of said turn-table, clutch means for operably coupling the driven means and the turn-table and adapted to

allow the driven means to rotate independently of the turn-table when the turn-table is rendered substantially immobile, a magnet-responsive element on said vehicle, a magnet on said carriage to attract said element on the vehicle so that the vehicle moves in correspondence with the movement of said carriage, and means operable at will for selectively rendering the turn-table immovable so that the driven means rotates about its own pivot on the turn-table independently of the turn-table or for rendering the turn-table freely mobile so that the driven means and turn-table turn in unison about the pivot of the turn-table thereby to cause the vehicle to travel about the first surface in paths avoiding the hazards thereon.

4. An electro-mechanical toy of skill comprising, first means defining a first substantially planar surface, a toy vehicle freely movable on and about said first planar surface, hazards on said first planar surface about and through which the vehicle is to travel and avoid contact therewith, second means defining a second substantially planar surface spaced from the first planar surface and disposed substantially parallel thereto, a revolvable turn-table pivotally mounted for rotation in a plane substantially parallel to the second surface, a carriage movably supported beneath said first planar surface relatively adjacent thereto, rotatably driven means pivotally and eccentrically mounted on the turn-table and independently revolvable thereon when the turn-table is rendered substantially immobile and for rotatably driving the turn-table when the turn-table is free to rotate, means on said driven means for movably supporting said carriage radially of said turn-table, a motor-driven traction wheel disposed to rotate on said second surface for driving said driven means, clutch means for operably coupling the driven means and the turn-table and adapted to allow the driven means to rotate independently of the turn-table when the turn-table is rendered substantially immobile, a magnet-responsive element on said vehicle, a magnet on said carriage to attract said element on the vehicle so that the vehicle moves in correspondence with the movement of said carriage, and means operable at will for selectively rendering the turn-table immovable so that the driven means rotates about its own pivot on the turn-table independently of the turn-table or for rendering the turn-table freely mobile so that the driven means and turn-table turn in unison about the pivot of the turn-table thereby to cause the vehicle to travel about the first surface in paths avoiding the hazards thereon.

5. An electro-mechanical toy of skill comprising, first means defining a first substantially planar surface, a toy vehicle freely movable on and about said first planar surface, hazards positionable on said first planar surface about and through which the vehicle is to travel and avoid contact therewith, second means defining a second substantially planar surface spaced from the first planar surface and disposed substantially parallel thereto, a revolvable turn-table pivotally mounted for rotation in a plane substantially parallel to the second surface, a carriage movably supported beneath said first planar surface relatively adjacent thereto, driven means pivotally and eccentrically mounted on the turn-table and independently revolvable thereon when the turn-table is rendered substantially immobile and for rotatably driving the turn-table when the turn-table is free to rotate, means on said driven means for movably supporting said carriage radially of said turn-table, clutch means for operably coupling the driven means and the turn-table and adapted to allow the driven means to rotate independently of the turn-table when the turn-table is rendered substantially immobile, a magnet-responsive element on said vehicle, a magnet on said carriage to attract said element on the vehicle so that the vehicle moves in correspondence with the movement of said carriage, and means comprising a brake operable at will for alternatively rendering the turn-table immovable so that the driven means rotates about its pivot on the turn-table independently of the turn-table or for rendering the turn-table freely mobile so that the driven means and turn-table turn in unison about the pivot of the turn-table thereby to cause the vehicle to travel about the first surface and in paths avoiding the hazards thereon.

6. An electro-mechanical toy of skill comprising, first means defining a first substantially planar surface, a toy vehicle freely movable on and about said first planar surface, hazards on said first planar surface about which the vehicle is to travel and avoid contact therewith, second means defining a second substantially planar surface spaced from the first planar surface and disposed substantially parallel thereto, a turn-table pivotally mounted for rotation in a plane substantially parallel to the second surface, a carriage movably supported beneath said first planar surface relatively adjacent thereto, driven means pivotally and eccentrically mounted on the turn-table and independently revolvable thereon when the turn-table is rendered substantially immobile and for rotatably driving the turn-table when the turn-table is free to rotate, means on said driven means for movably supporting said carriage radially of said turn-table, a motor-driven traction wheel disposed to rotate on said second surface for driving said driven means, clutch means for operably coupling the driven means and the turn-table and adapted to allow the driven means to rotate independently of the turn-table when the turn-table is rendered substantially immobile, a magnet-responsive element on said vehicle, a magnet on said carriage to attract said element on the vehicle so that the vehicle moves in correspondence with the movement of said carriage, and means comprising a brake operable at will for alternatively rendering the turn-table immovable so that the driven means rotates about its pivot on the turn-table independently of the turn-table or for rendering the turn-table freely mobile so that the driven means and turn-table turn in unison about the pivot of the turn-table thereby to cause the vehicle to travel about the first surface in paths avoiding the hazards thereon.

References Cited in the file of this patent

UNITED STATES PATENTS

2,639,545 Pastorius ---------- May 26, 1953

FOREIGN PATENTS

647,284 Great Britain ---------- Dec. 13, 1950
674,801 Great Britain ---------- July 2, 1952