

May 8, 1951

L. W. MCKEEVER
MAGNETIC RACING GAME DEVICE

2,551,806

Filed June 3, 1947

2 Sheets-Sheet 1

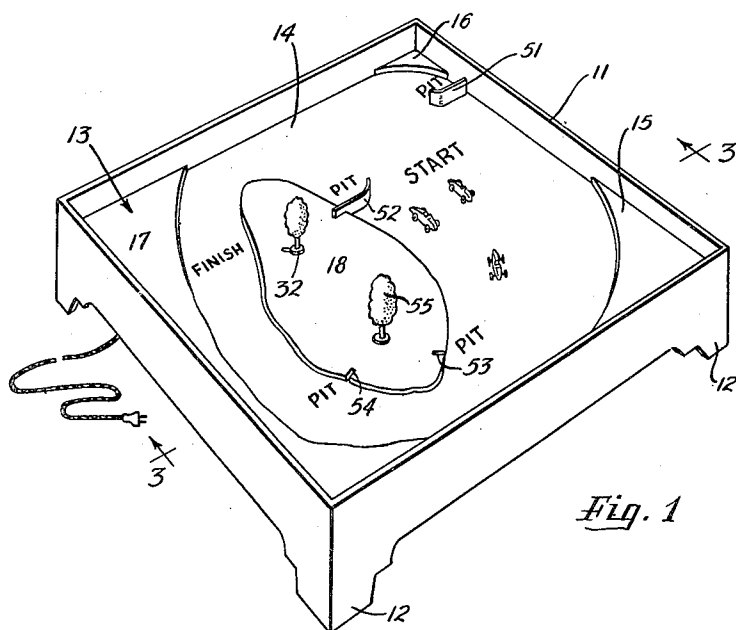


Fig. 1

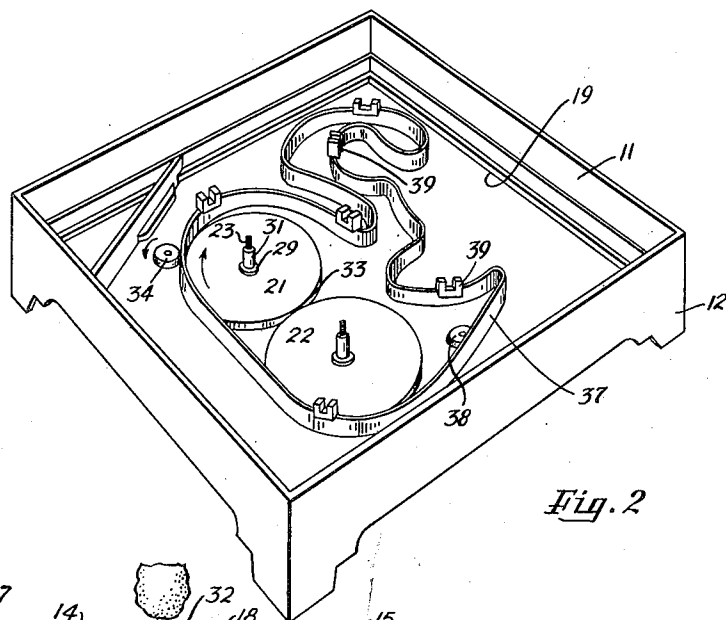


Fig. 2

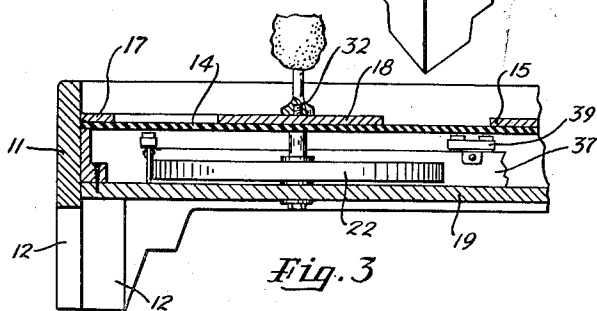


Fig. 3

INVENTOR.
Louis W. McKeever
BY
McCanna and Morabach
ATTYS.

May 8, 1951

L. W. McKEEVER
MAGNETIC RACING GAME DEVICE

2,551,806

Filed June 3, 1947

2 Sheets-Sheet 2

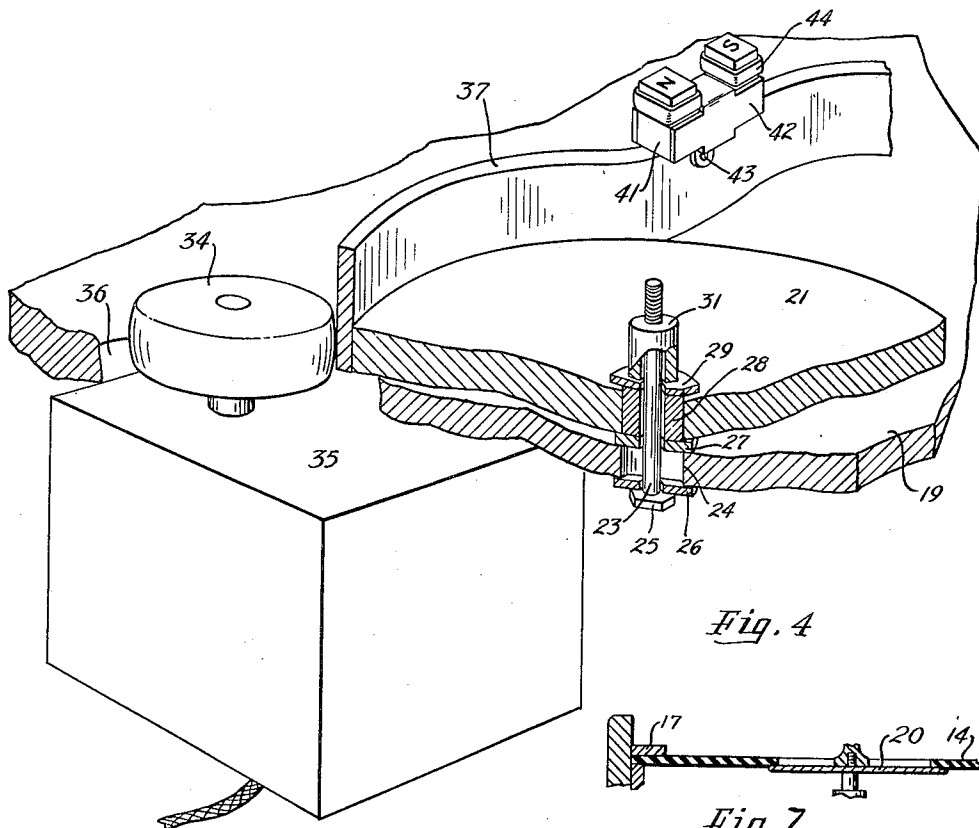


Fig. 4



Fig. 7

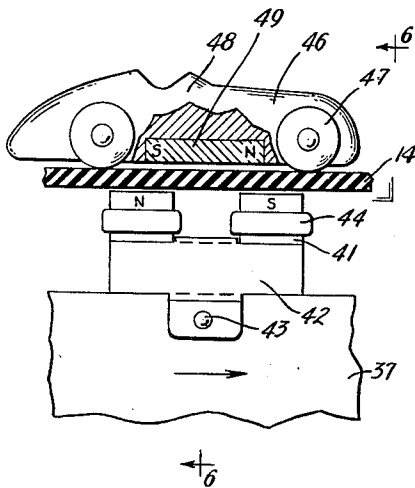


Fig. 5

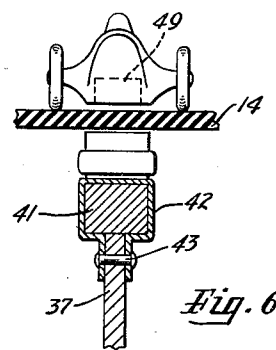


Fig. 6

INVENTOR.
Louis W. McKeever
BY
McCanna and Morsbach
ATTYS.

UNITED STATES PATENT OFFICE

2,551,806

MAGNETIC RACING GAME DEVICE

Louis W. McKeever, Rockford, Ill., assignor of
one-third to Richard E. Beck and one-third to
Erick C. Carlson, Rockford, Ill.

Application June 3, 1947, Serial No. 752,190

7 Claims. (Cl. 273—86)

1

This invention relates to game devices, and has special reference to a game board having a plurality of magnets for moving a plurality of tokens over a board in an erratic and unpredictable path.

The primary object of the invention is the provision of a game device wherein a plurality of figures are moved in an erratic path at unpredictable speeds over a game board so that a game is produced which has an element of suspense.

A further object is the provision of a game device of the character described which can be manufactured and sold at low cost.

Another object of the invention is the provision of a game device having novel means for supporting the driving magnets and moving the same in an erratic path.

A still further object is the provision of a game device having novel means for interrupting or delaying the movement of the figures on the board.

Other objects and advantages will appear from the following description and the accompanying drawings, in which—

Figure 1 is a perspective view of a suitable embodiment of the invention;

Fig. 2 is a view similar to Figure 1 with the game board removed;

Fig. 3 is a partial section on the line 3—3 of Figure 1;

Fig. 4 is a fragmentary view on a somewhat larger scale showing the manner in which the carrier and magnets are driven;

Fig. 5 is a fragmentary view, partly in section, showing a driving magnet, a figure and the associated figure magnet in cooperative driving relation;

Fig. 6 is a view substantially on the line 6—6 of Fig. 5, and

Fig. 7 is a fragmentary view somewhat similar to Fig. 3 showing a modified structure.

In the embodiment of the invention herein shown for purposes of illustration, the device comprises a body or frame 11, in this particular instance rectangular in shape and having depending legs to space the frame from a table or other resting place. Supported on the frame 11 is a game board designated generally by the numeral 13, the board in this instance being recessed downwardly from the upper edge of the frame, though this is not essential. The game board 13 comprises an area 14 designated the playing surface area which forms the surface

2

on which the figures move during the operation of the game, and the board also includes areas designated 15, 16, 17 and 18, the edges of which are raised somewhat above the surface area 14 so as to define the playing area and confine the movement of the figures over the playing area. The upstanding edges of the areas 15 to 18 also serve as obstructions to delay or stop movement of the figures, as will presently more fully appear. If desired the central area 18 may be recessed below the level of the playing area, as shown at 29 in Fig. 7 so that whenever a figure moves into the depressed area it is positively eliminated from the game.

Disposed on the frame in a plane below that of the board 13 is a bottom 19 spaced from the lower surface of the board, and positioned on this bottom are two relatively large disks 21 and 22. Each of these disks is mounted on the base in the manner shown in Fig. 4, a bolt 23 extending through an opening 24 in the bottom and having a head 25 bearing against a washer 26 on the lower surface of the bottom. A washer 27 surrounds the bolt at the upper surface of the bottom, and the hub 28 of the disk 24 rests upon the washer 27. A third washer 29 rests against the upper end of the hub, and a spacer 31 rests against the washer 29. The upper end of the bolt 23 passes through the game board 13 in the area 18, and a nut 32 on the upper surface of the game board holds the parts in assembled relationship so that the disk 21 may rotate on the bolt 23. The disk 22 is retained in like fashion. The disks 21 and 22 are mounted in edge to edge relationship as shown at 33 (Fig. 2) to provide a friction drive therebetween.

A friction pulley 34 is carried by a motor drive unit designated generally by the numeral 35 and extends through an opening 36 in the bottom with its edge in spaced relation to the periphery of the disk 21. The driving mechanism 35 may be of any conventional design, such as a gear head motor, so as to reduce the speed of the pulley 34. A satisfactory speed reduction is about 40 to 1 where a 1750 R. P. M. motor is used. Carried on the upper surface of the bottom 19 is an endless tape or belt 37 which may be of any semi-flexible non-magnetic material. In the preferred embodiment of the invention this comprises a leather tape or a woven cloth or composition tape of the type commonly used for belting. The distance between the periphery of the disk 21 and the pulley 34 is such that the tape is frictionally engaged therebetween with sufficient pressure so that rotation of the pulley 34 feeds the tape

3

between the pulley and the disk and likewise causes rotation of the disk 21, which in turn rotates the disk 22. The disks 21 and 22, being of equal diameter, cause the tape to feed along the incoming side of these two disks in the manner shown in Fig. 2. The tape is of considerably greater length than is required for it to pass around the disks 21 and 22 in a uniform manner, and is sufficiently long to cause the same to fold back upon itself a number of times, as will be apparent from Fig. 2. The exact length of the tape is not critical, but there should be a substantial excess. Increase in the length of tape increases the erratic nature of the operation of the device. A guide pulley 38 serves to guide the tape around the disk 22, as will be apparent from Fig. 2.

Mounted on the upper edge of the tape 37 is a series of identical permanent magnets as indicated at 39, these magnets being movable with the tape. While I have shown six of these magnets mounted on the upper edge of the tape, any desired or suitable number may be employed depending upon the size of the device and the type of action desired. Each of these magnets consists of a U-shaped magnet piece 41 formed of efficient magnetic material such as that employed in the more efficient magnets, the center of the magnet being attached to the upper edge of the tape by a saddle 42 of non-magnetic material which passes around the magnet and down along opposite sides of the blade to receive a rivet 43. The upstanding poles of the magnet are each surrounded by a bumper as shown at 44 of rubber or other non-magnetic material which acts to prevent two of the magnets from coming together in the area in which the tape is looped and thereby prevent free movement of the tape.

The parts are spaced and proportioned so that the upper surfaces of the magnetic pole pieces are in closely spaced relationship to the bottom of the playing board 13, as will be apparent from Figs. 5 and 6, so that these driving magnets move along and swing back and forth under the board 13 in an erratic fashion due to the fact that the tape is fed out from between the pulleys 34 and 21 and the stiffness of the tape causes the tape to slide in an erratic and unpredictable fashion in the area in which the tape is looped and which lies beneath the playing area of the board. The board 13 is in this instance formed of synthetic resin, but it may be formed of any other suitable non-magnetic material or even of sheet metal if the metal is such as to very rapidly lose its magnetism as will be understood by those skilled in the electrical art.

Positioned on the playing area of the board is one or preferably a plurality of figures designated generally by the numeral 45, the figures in this instance being in the shape of a miniature racing automobile having its wheels as indicated at 47 pinned to the body portion 48 for rotation thereon. Mounted in the bottom of the figure is a permanent magnet 49, the magnet being so mounted as to be in close proximity to the upper surface of the board 13 as will be apparent from Figs. 5 and 6, the length of this magnet being such as to span the pole pieces of the driving magnets 41 and so that as the magnets 41 move along under the board 13, any figure which is disposed on the upper surface of the board 13 in close proximity to the magnets 41 will be caused to move along and follow the movement of the driving magnet. It will be observed, however, that because of the erratic movement of the

4

driving magnets, should the tape force the driving magnet to slide laterally of the longitudinal centerline of the figure with a quick movement, the resistance of the figure against the upper surface may be such as to prevent the figure from following the movement of the driving magnet. Likewise, if the figure strikes an obstacle in its movement it may be withheld while the driving magnet moves on.

While I have shown the device arranged to simulate an automobile race, it will be obvious that the shape of the figures and the indicia on the game board may be made up to simulate many different games, as, for example, a fox hunt or a mouse hunt, wherein a magnet-containing fox is chased by a number of magnet-containing dogs all without departing from the basic principles of the invention. In using the device as an automobile racing game in accordance with the indicia herein contained, a plurality of miniature automobiles such as that shown at 46 are arranged in parallelism below the area marked "Start" in Figure 1. Thereupon, current is supplied to the motor drive unit causing the tape to be fed in an erratic path over the bottom 18. As the magnets come under the figures in the starting area, each magnet will pick up one or more of the figures and start to move the figure along the playing area toward the finish line. As the figures move around the track or playing area, they come into contact with the upstanding edges of the areas 15 through 18, causing the driving magnet to move on and the figure to remain until properly removed by a subsequent driving magnet. In order to further render the action erratic, a series of tabs such as indicated at 51 and 52 may be provided which are insertible in slots as shown at 53, 54, etc., so as to project out over the playing area and serve as a trap for a figure passing in this area. It will be seen that because of the nature of the obstacles and the traps on the surface of the board and the erratic nature of the movement imparted to the driving magnets, it is impossible to predict the figure which may be leading upon the lapse of a predetermined period of operation. If desired, the power to the motor may be supplied through a conventional timer, causing the mechanism to run for a pre-set interval. If desired, ornamental configurations such as the trees indicated at 55 may be supplied on the areas 14, 15, 16, 17 and 18 to simulate a natural setting.

I claim:

1. A game device comprising a portable frame, a game board fixed in the frame and having a playing surface for the passage of a loose figure thereover for amusement purposes and an obstruction area for interrupting and delaying the movement of the figure, a loose figure having a permanent magnet thereon in close proximity to the board, a bottom fixed in said frame below and in spaced relation to said board, an endless tape disposed edgewise on said bottom for sliding movement thereover and looped thereon in haphazard fashion in the space between the bottom and the board, a plurality of driving magnets fixed on the upper edge of said tape in spaced relation with the pole pieces of the driving magnets in close proximity to the playing surface to exert magnetic attraction on the magnet of the figure, and electrically driven means engaging said tape through a small portion of its length to drive the tape in sliding movement over the bottom, the frame confining the movement of

5

the free portion of the tape, the length of the tape being substantially greater than the periphery of the frame to force the tape to move through continuing erratic loops and folds as it moves over the bottom.

2. An animated game device, comprising a game board having a top playing surface and a bottom member spaced from said playing surface, at least one figure on said game board movable over said top surface, a permanent magnet attached to said figure, a plurality of driving magnets disposed below the playing surface and movable in a plane below said surface to move the figure over the playing surface by magnetic attraction, an endless tape resting edgewise on the bottom member for sliding movement thereover and looped thereon in a haphazard fashion, said driving magnets being attached in spaced relation along the upper edge of said tape with the pole pieces of the driving magnets in close proximity to said playing surface of the game board, means engaging said tape through a small portion of its length to drive the tape in sliding movement over the bottom member, and means to confine the free movement of the tape and cause it to slide through continuing erratic loops and folds.

3. The combination recited in claim 2, wherein the pole portions of the driving magnets are encircled by insulators of non-magnetic material to prevent said magnets from clinging together during the erratic movement of the tape.

4. The combination recited in claim 2 including means engageable with the tape adjacent the driving means for smoothing out the tape before it passes to the driving means.

5. An animated game device comprising a game board having a playing surface area and a second surface in spaced relation to said playing surface area, at least one figure on said first surface area movable thereover, a permanent magnet secured to said figure, a plurality of driving magnets movable in a plane disposed in spaced relation to the first surface area to move the figure thereover by magnetic attraction, a loosely supported endless tape mounted to have one edge rest on said second surface and having its opposite edge forming a support for said driving magnets, and means engageable with the tape for sliding the tape over the second surface through a series of erratic loops and folds.

6. An animated game device comprising a game board having a playing surface area, at least one figure resting upon said game board and shaped for movement over said playing area, said figure having a permanent magnet, an endless magnet-carrying member of semi-flexible material having a confined portion and a portion arranged in unconfined loose haphazard folds below said playing area, a plurality of spaced driving magnets

6

carried on said member and disposed below said playing surface movable with said endless member to move the figure over the playing area by magnetic attraction, and means for driving said endless member to move the driving magnets through an unpredictable erratic path, said driving means engaging the endless member through a small portion of its length at the aforesaid confined portion to continuously withdraw said endless member from the loose unconfined portion beneath one area of the playing surface and feed it back to the loose portion of the endless member beneath another area of the playing surface and thereby advance said unconfined portion in an unpredictable and constantly changing pattern.

7. An animated game device comprising a game board having a playing surface area, at least one figure resting upon said game board and shaped for movement over said playing area, said figure having a permanent magnet, an endless magnet-carrying member of semi-flexible material having a confined portion and a portion arranged in unconfined loose haphazard folds below said playing area, a plurality of spaced driving magnets carried on said member and disposed below said playing surface movable with said endless member to move the figure over the playing area by magnetic attraction, means for driving said endless member to move the driving magnets through an unpredictable erratic path, said driving means engaging the endless member through a small portion of its length at the aforesaid confined portion to continuously withdraw said endless member from the loose unconfined portion beneath one area of the playing surface and feed it back to the loose portion of the endless member beneath another area of the playing surface and thereby advance said unconfined portion in an unpredictable and constantly changing pattern, and obstructions disposed on the playing surface of the board positioned to be engaged by said figure when the latter is brought into certain positions by the magnets upon erratic movement of said endless member, said obstructions acting to thereupon interrupt or delay the movement of said figure.

LOUIS W. MCKEEVER.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,436,935	Bigmore	Nov. 28, 1922
2,282,430	Smith	May 12, 1942

FOREIGN PATENTS

Number	Country	Date
36,742	France	Aug. 2, 1930
450,161	Great Britain	July 10, 1936