

## [54] JOGGING GAME APPARATUS

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[58] Field of Search..... 273/86 R, 86 B, 86 F, 86 G, 273/86 H; 272/57 R, 69, 70, 73

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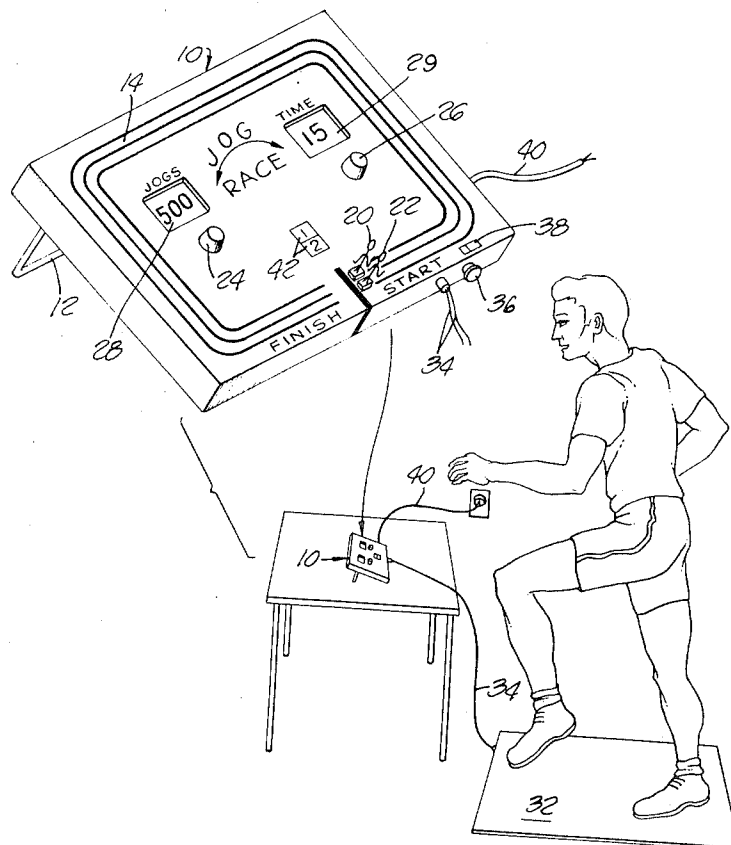
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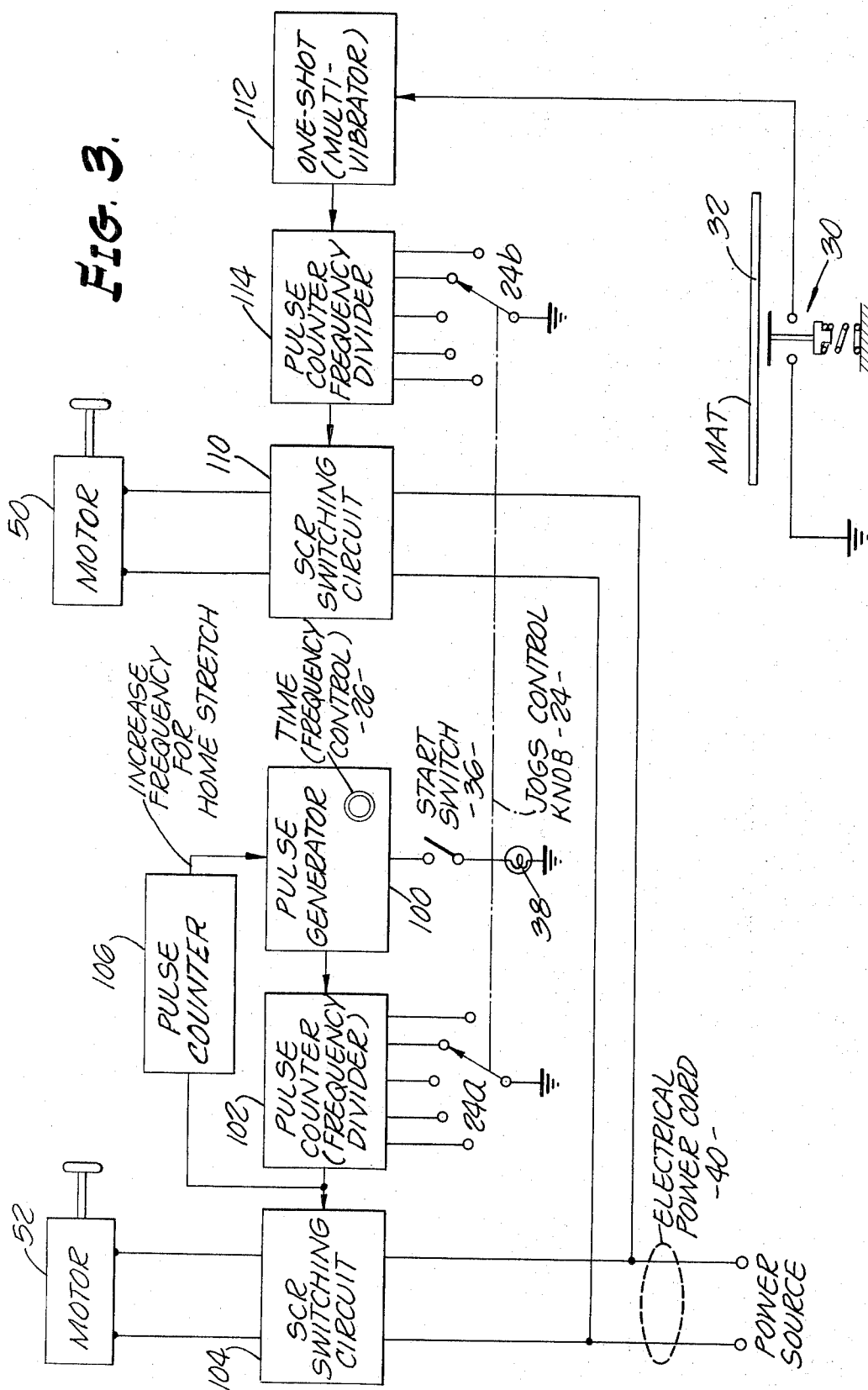
## [57] ABSTRACT

Game apparatus is provided which is controlled by a person jogging in place to establish a simulated race between the jogger and a simulated competitive runner. The apparatus includes a game board and two or more game pieces. The game pieces represent runners. They are controlled to move around a racetrack inscribed on the surface of the game board. One of the game pieces is controlled by a timing mechanism, which is pre-set to cause the game piece to move at a particular speed so as to complete the race in a predetermined time. Another of the game pieces is controlled by the jogger, who must jog in place at a particular rate in order to win the race with the timed game piece. Additional game pieces controlled, for example, by additional joggers and/or by additional timing mechanisms may be provided, as desired.

5 Claims, 3 Drawing Figures







## JOGGING GAME APPARATUS

## BACKGROUND OF THE INVENTION

Jogging is accepted today as an ideal form of exercise. For most persons, however, it is not practical actually to jog out of doors each day, and most persons resort to jogging in place within their homes. However, even though jogging in place is an excellent exercise, it is difficult for most persons to continue day after day conscientiously to carry out the exercise. This is because the exercise itself is boring, and there are no competitive incentives of an immediate nature so as to cause a person to continue the program, even though he may realize that he should, from a health and fitness standpoint. The primary purpose of the present invention is to introduce an element of competitiveness into the exercise of jogging in place, and thereby transform the exercise into an exciting and enjoyable game.

A particular embodiment of the invention is shown in the accompanying drawings and is described in the following specification. The illustrated embodiment, however, is for descriptive purposes only, and is not intended in any way to limit the invention.

## BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective representation of the game board apparatus of the invention, and the manner in which it is controlled by a person jogging in place;

FIG. 2 is a representation of an appropriate control mechanism which may be incorporated within the apparatus of FIG. 1; and

FIG. 3 is a block diagram of a control system appropriate for controlling the mechanism of FIG. 2.

## DETAILED DESCRIPTION OF THE ILLUSTRATED EMBODIMENT

As shown in FIG. 1, the game apparatus of the invention may include a rectangular hollow board 10 which may be tilted into any desired inclined position by means, for example, of a bracket 12 hinged to the bottom of the board 10. A race track 14 is inscribed on the top surface of the board 10, and extends around the periphery of the board from a "start" position to a finish position.

Two or more game pieces designated 20 and 22 are positioned on the board 10. These game pieces may be shaped to simulate runners, and they are controlled to move around the race track 14 from the start position to the finish position. Alternately, the game pieces may take the form of lights positioned under the board surface and shining through a translucent section of the board. The game piece 20, for example, is controlled by an appropriate timing mechanism within the board which is manually set by the appropriate adjustment, for example, of a pair of knobs 24 and 26 located on the board 10. The knob 24 sets the number of jogs the game piece 20 is to make during a particular session as indicated by a corresponding dial 28, and the knob 26 establishes the time he desires the session to continue as indicated by the corresponding dial 29.

In a manner to be described, the setting of the dials 24 and 26 establishes the rate at which the game piece 20 is moved around the race track from the start to the finish, and in order to compete successfully with the game piece 20, the jogger must make the pre-set number of jogs within the pre-set time interval. The jogger

controls the game piece 22 by one or more spring loaded switches such as the switch 30 (FIG. 3) located under a mat 32 on which the jogger carries out his jogging in place exercise.

The switch 30 is connected to the mechanism in the game board through an electric cord 34. A start switch 36 is provided, as well as a start light or buzzer 38. The mechanism in the board is energized by electrical power from a usual power outlet, and is connected to the outlet through a usual electric cord 40. The start switch 36 may be incorporated into a timer by which the race actually starts a number of seconds after the switch has been actuated to permit the jogger to get in position. Then the light or buzzer 38 is energized to indicate the actual start of the race.

Other game pieces may be provided on the board to be controlled by other joggers and/or other timing mechanisms, so that the race may be conducted with respect to any desired number of participants. Appropriately wired finish lights 42 may be provided on the board which will indicate by their color, the actual positions of the various game pieces at the end of the race. Also, and as will be described, a further control may be incorporated into the internal mechanism of the apparatus, to increase the speed of the timed game piece 20 at the end of the race, so as to simulate a "stretch run" for the timed game piece, which must be matched by the jogger controlled game piece 22, if the latter game piece is to prevail.

The mechanism of FIG. 2 includes a first drive motor 50 and a second drive motor 52. The drive motors 50 and 52 are supported on a base 54 forming the bottom, for example, of the game board 10. The flat planar member 56 represents the top surface of the game board, the transverse dimensions in FIG. 2 being exaggerated with respect to FIG. 1 for purposes of clarity. A post 58 is mounted on a pedestal 59 on the bottom 54, the post extending upwardly in the game board. A first sleeve 60 is rotatably mounted on the post 58, and rotation of the sleeve 60 is controlled by a turntable 62. A second sleeve 64 is rotatably mounted on the sleeve 60, and the rotation of the sleeve 64 is controlled by a turntable 66. The drive motor 50 is coupled through a drive wheel 70 to the turntable 66, and the drive motor 52 is coupled through a drive wheel 72 to the turntable 62. The drive wheels 70 and 72 may be provided with rubber rims, or other equivalent members, to provide a frictional engagement between the wheels and the corresponding turntables.

A first bracket 74 is coupled to the sleeve 60 through an arm 76, and a second bracket 78 is coupled through an arm 80 to the sleeve 64. A permanent magnet 84 is supported in the bracket 74, and is biased toward the under surface of the member 56 by a spring 86. A permanent magnet 88 is mounted in the bracket 78, and is biased towards the under surface of the member 56 by a spring 90. The permanent magnets 84 and 88 are disposed under the race track 14, and are moved around the race track in respective guide channels 75 and 79, as the turntables 62 and 66 rotate. The guide channels have the same shape as the track inscribed on the upper surface of the board.

The game pieces 20 and 22 have appropriate magnetizable pieces on their under sides, so that they are drawn by the respective permanent magnets 84 and 88 around the race track. The game pieces 20 and 22 may be made to simulate joggers, as mentioned above, so as

to provide realism to the game. The game piece 22 is controlled, for example, by the drive motor 50, and the game piece 20 is controlled, for example, by the drive motor 52. It is evident that the two game pieces are independently controlled, and the rate at which they individually proceed around the race track depends on the independent speeds of their respective drive motors.

As shown in FIG. 3, the motor 52 is controlled by a pulse generator 100 which is connected through a pulse counter frequency divider 102 to a silicon controlled rectifier switching circuit 104. The various circuits represented by the blocks 100, 102 and 104, and by the other blocks in FIG. 3, are all individually well known to the art, and do not need to be shown in circuit detail in order to provide a complete description of the illustrated embodiment of the invention.

The motor 52 is connected through the switching circuit 104 to the power source through the electric cord 40. The switching circuit is controlled by the output of the pulse counter 102, so that the motor 52 is moved by a particular increment, each time the switching circuit is operated. Regardless of speed, the timed game piece 20 requires a certain number of increments in order to complete the race. A rotary switch 24a controlled by the "jogs" control knob 24 establishes the frequency division rate of the counter 102, and the time control knob 26 establishes the frequency of the pulse generator 100. The result is that the required number of pulses is applied to the switching circuit 104 in the time set by the jogger, and at a speed corresponding to the number of jogs set by the jogger to be executed during that time interval. A pulse counter 106 is provided which connects back to the pulse generator 100, and which increases the frequency of the pulse generator at a predetermined point in the race, so that an increased speed for the "stretch run" may be provided.

The motor 50 is controlled by a similar silicon controlled switching circuit 110 which, in turn, is controlled by a one-shot multivibrator 112 through a pulse counter frequency divider 114. The pulse counter frequency divider 114 is similar to the counter 102 and is controlled in unison with the control of the counter 102 by a rotary switch 24b which is mechanically coupled to the rotary switch 24a. Each jog made by the jogger on the mat 32 causes the one-shot multivibrator 112 to pass a pulse to the pulse counter 114, so that the motor 50 is driven in increments by the successive actuation of the silicon controlled rectifier 110 by the jogging of the jogger on the mat 32. The jogger must jog at a particular rate, or better, in order that his game piece 22 may win the race against the timed game piece 20.

Assuming that it requires X pulses applied to the SCR switching circuits 104 and 110 to cause the two game pieces to complete the race from start to finish; when the ganged rotary switches 24a, 24b are set to a first position in which no frequency division takes place in either the counters 102 or 114, the X pulses from the generator 100 and X jogs from the runner will complete the race. However, if the rotary switches are set to a second position in which a 2:1 division occurs in the counters, then 2X pulses from the generator and 2X jogs from the jogger are required to bring the game pieces around the board. In like manner, the ganged rotary switches may be adjusted to require 3X pulses from the generator and 3X jogs to enable the game pieces to complete the race, and so on.

In this way, control 24 can be set to any desired setting as to the number of jogs which will be required on the part of the runner to bring his game piece 22 completely around the board, and the game piece 20 will require the same number of pulses from the generator 100. The time in which the race is to be completed, that is, the rate at which the runner must jog to keep his game piece 22 up with the reference game piece 20, is set by controlling the frequency of the pulse generator 100 by the control 26. When the control is adjusted so that the pulse generator 100 must put out a particular number of pulses per unit time, the jogger must also put out the same number of jogs per unit time to keep his game piece up to the reference piece.

The invention provides, a relatively simple and inexpensive game board apparatus which is controlled by a person jogging in place, and which is effective to simulate a race between the jogger and a simulated runner. The apparatus of the invention is advantageous, in that the timed game piece may be set easily and conveniently by the jogger himself, so that any desired parameters may be established for the race.

It should be reiterated that although a particular embodiment of the invention has been shown and described, modifications may be made. The following claims are intended to cover the invention, and all modifications which fall within the spirit and scope of the invention.

What is claimed is:

1. Game apparatus including: a game board having a race track represented thereon; a first game piece and a second game piece mounted on said game board and movable along the race track; and a control mechanism coupled to said game pieces for moving said game pieces independently of one another along the race track from a start position to a finish position, said control mechanism including a first drive system for causing said first game piece to move along the race track at a pre-set rate, and a second drive system including a pulse generator and a jogger-controlled switching means for actuating said pulse generator to cause a second game piece to move incrementally along the race track at a rate controlled by the jogger.

2. The game apparatus defined in claim 1, in which said first drive system includes a second pulse generator, and manually operated control means for setting the frequency of the second pulse generator and thereby the time required to move the first game piece along the race track from the start to finish.

3. The game apparatus defined in claim 2, in which said first drive system includes a frequency counter coupled to the output of said second pulse generator, and said second drive system includes a frequency counter coupled to the output of the pulse generator therein, and manually operated control means for controlling the frequency dividers to set the number of pulses from the first and second generators required to move the first and second game pieces along the race track from the start to the finish, and in which said first-mentioned and second-mentioned manually operated control means include respectively a time dial and a jog dial mounted on the game board.

4. The game apparatus defined in claim 1, in which said jogger controlled switching means includes a mat on which the jogger jogs in place, and a spring biased switch embedded on the mat to be actuated by each jog of the jogger.

5. The game apparatus defined in claim 1, and which includes a manually operable start switch and a start indicator to indicate the actual start of the race.

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