May 21, 1968 M. M. BOOTHE 3,384,374

GAME DEVICE

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FIG. 1.

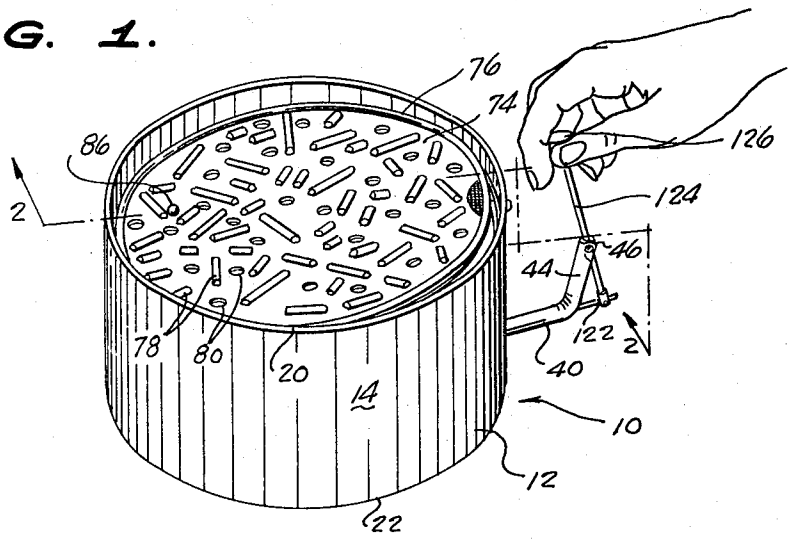


FIG. 2.

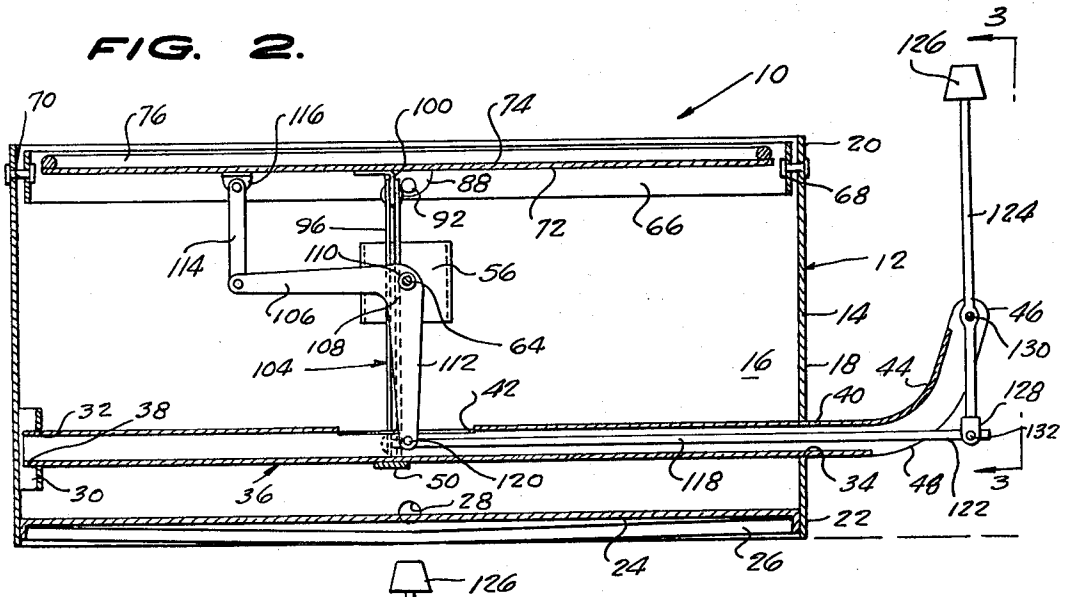
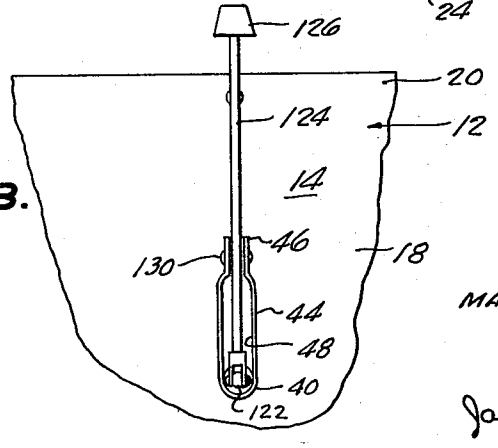


FIG. 3.



INVENTOR.
MALCOLM M. BOOTHE,
BY
James Atkins ATTORNEY.

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FIG. 4.

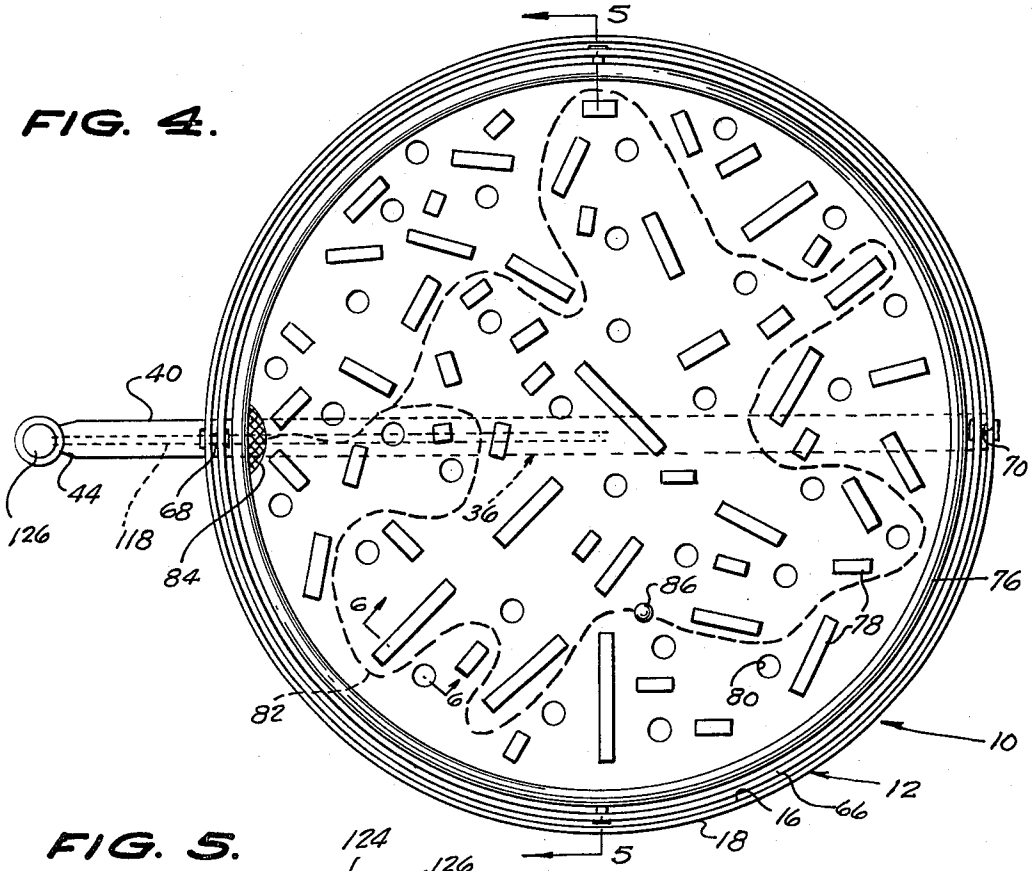


FIG. 5.

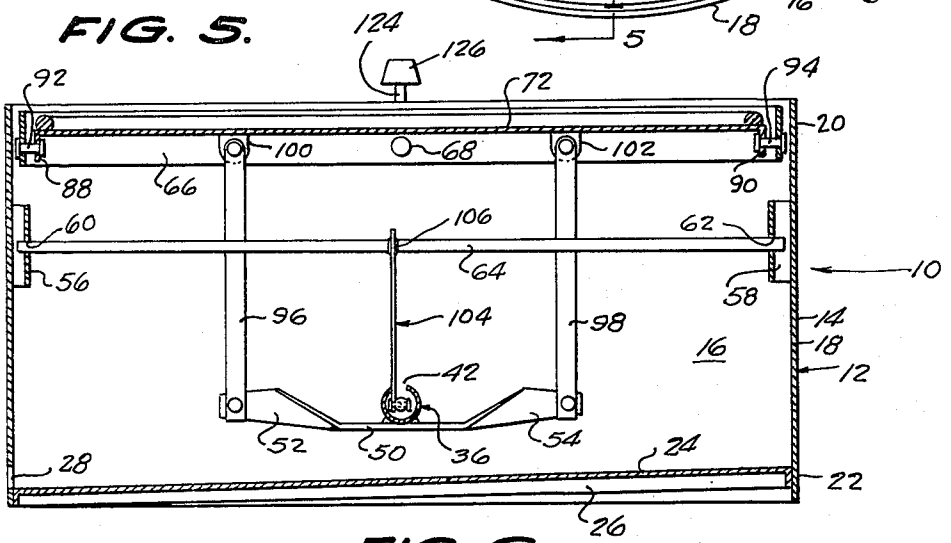
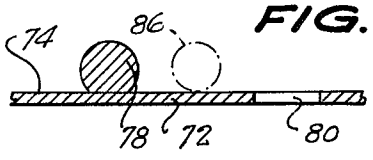


FIG. 6.



INVENTOR.
MALCOLM M. BOOTHE,
BY
James Atkins ATTORNEY.

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3,384,374

GAME DEVICE

Malcolm M. Boothe, Rte. 2, Elba, Ala. 36323

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2 Claims. (Cl. 273—110)

ABSTRACT OF THE DISCLOSURE

An amusement device having a casing and a plate mounted thereon for tilting about two axes, the tilting of the plate being controlled by a single lever.

This invention relates to a game device for amusement and the development of manipulative skills. Moreover, the device relates to a game surface titltable about one or more axes to guide a gravity controlled game projectile along the surface.

A primary object of this invention is to provide a game device including a surface as aforesaid, wherein the surface is controlled by remote actuation means. A related objective is to supply a horizontal planar surface and a control for selective tilting of the surface about two perpendicularly related diametric axes, either simultaneously or singly.

In the employment of this apparatus, in a preferred embodiment of the invention, it is an objective to provide a game of skill and amusement which involves the guidance of a gravity controlled element, such as a ball, along a predetermined path on a planar surface. The surface contains obstacles and openings arranged in maze-like form, and a pathway, and successful completion of the game involves guidance of the ball along the pathway, without permitting it to drop through the openings.

Another object is to provide dual pivot means for a planar surface with respect to a housing, including the pivoting of a surface bearing means to a rim within the housing, and pivoting of the rim to the housing on an axis perpendicular to the axis of pivoting of the rim. A related advantage hereof resides in the provision of a single control means, by the manipulation of which the inclination of the surface is regulated by the user.

Other and further objects and advantages of this invention will become apparent to those skilled in the art from a consideration of the following specification when read in conjunction with the annexed drawings, in which:

FIGURE 1 is a perspective view of a device constructed and assembled in accordance with the teachings of this invention;

FIGURE 2 is an enlarged, medial cross-sectional view of the apparatus hereof, taken on the line 2—2 of FIGURE 1, looking in the direction of the arrows;

FIGURE 3 is a fragmentary end elevational view, taken substantially on the line 3—3 of FIGURE 2;

FIGURE 4 is a top plan view of the device;

FIGURE 5 is a transverse sectional view on the line 5—5 of FIGURE 4, looking in the direction of the arrows; and,

FIGURE 6 is an enlarged, detail sectional view taken on the section line 6—6 of FIGURE 4, looking in the direction of the arrows.

Proceeding to a more detailed description of the invention, a preferred form of the device is shown in the drawings, and designated therein by reference numeral **10**. The device **10** has diverse utility, but is illustrated and described herein, without limitation, as applied to a game of amusement and skill.

The device **10** comprises a housing **12** including a tubular, upstanding side wall **14**. The side wall **14** has

inner and outer sides **16**, **18**, and top and bottom portions **20** and **22**. The housing **12** further includes a base **24** with a surrounding flange **26** connected to the inner side **16** of the side wall adjacent the bottom portion **22**. As shown in FIGS. 2 and 5, the base is mounted in a slanted position toward an opening **28** formed in the side wall, whereby an object falling on the base gravitates toward the opening.

A first bracket **30**, having an opening **32** therein is mounted on the inner side **16** of the side wall, and the wall has an aperture **34** formed therein at a diametrically opposed location. An elongated, tubular shaft **36**, having an inner end **38** extending into the opening **32** of the bracket and an outer end **40** extending through the aperture **34** is provided and is journaled rotatably therein. As shown in FIGURE 2, the shaft has an elongated slot **42** therein intermediate its ends for a purpose described below. The end **40** of the shaft extends outwardly of the side wall and has an upwardly curved extension element **44** thereon terminating at its outer end in upstanding ears **46**. The extension **44** is open at one side, at **48**, as shown in FIGURES 2 and 3. A transverse cross plate **50** is secured to the shaft intermediate its ends, and has upstanding end sections **52**, **54** disposed on opposite sides of the shaft.

A pair of second brackets **56** and **58** are secured to the inner side **16** of the housing at diametrically opposite sides thereof, on an axis perpendicular to the axis of the shaft **36**. The second brackets have coaxial openings **60**, **62**, respectively, formed therein, and a rod **64** is mounted therein. The rod, as shown in FIGURES 2 and 5, is mounted in a location spaced upwardly in the housing with respect to the shaft **36**.

An annular rim **66** of a diameter less than that of the housing is mounted for pivotal movement on rivets **68** and **70** extended between the rim and the upper portion **20** of the side wall. Thus, the rim is tiltable about a diametric axis parallel to the shaft **36**.

The planar surface hereof, in this embodiment of the invention, comprises a substantially flat, discoidal plate **72** with an upper surface **74** and an upper surrounding rim **76**. The surface **74** is provided with a plurality of spaced apart, variant obstacles **78** arranged in a maze-like pattern, and openings **80** formed therein in a scattered pattern. If desired, a pathway **82** leading about the surface from a starting location **84** (FIGURE 4) may be supplied. A ball element **86**, formed of metal or the like, is provided for use in the operation of the device. The maze plate **72** has depending lugs **88**, **90** thereon, and rivets **92**, **94**, respectively, pivotally connect the plate within the rim **66**. The rivets **92** and **94** provide a diametric pivot axis for the plate which is substantially perpendicular to the pivot axis of the rim, whereby the plate **72** and rim **76** are pivoted together about two perpendicularly related cross axes with respect to the housing.

Referring to FIGURE 5, as shown therein, pairs of elongated, substantially rectangular links **96** and **98** are pivotally mounted on the ends **52** and **54**, respectively, of the cross plate **50**. The links are pivotally connected, at their upper ends, to depending ears **100** and **102** of the plate **72**. It will be noted that the ears **100**, **102** are located on opposite sides of the axis of mounting of the rim **66** between rivets **68** and **70**.

A bell crank **104** having an outer arm **106**, a bend portion **108** with an opening **110** therein and a lower arm **112**, is carried on the rod **64** which extends through the opening **110** of the bend portion. The lower arm **112** extends into the slot **42** of the shaft **36**, as shown in FIGURES 2 and 5. An elongated, substantially rectangular forward link **114** is pivoted at its ends to the arm **106** and to an ear **116** depending from the plate **72**.

An elongated control rod **118** having an inner end **120** and an outer end **122** is positioned within the shaft **36**. End **120** is pivotally connected to the lower arm **112** of the bell crank, and the outer end **122** extends outwardly of the shaft end **40**. A handle member **124**, with a grip means **126** at its upper end and a clevis **128** at its lower end is provided, and is connected between the ears by a pin **130** extending therethrough intermediate said ends. The clevis has a pin **132** extending through the rod end **122**.

In operation, as indicated by the description of structure supra, the tilting of the surface **74** is controlled by manipulation of the handle member **124**. Lateral pressure on the handle results in a like inclination of the surface, while forward or rearward handle action provides a corresponding movement of the surface. The lateral and/or forward or rearward movements may be accomplished substantially together or separately. In the game device shown, one manner of usage involves an initial placement of the projectile **86** on the starting area **84**, followed by an attempt to guide the projectile along the pathway **82** by manipulation of the handle **124**. If the projectile should fall into one of the openings **80**, it falls on the base **24** and gravitates through the opening **28**, whereupon the game is started again.

Having described and illustrated an embodiment of this invention in some detail, it will be understood that this description and illustration is offered only by way of example, and that the invention is to be limited in scope only by the appended claims.

What is claimed is:

1. An amusement device comprising:
- a housing including a tubular, vertically disposed side wall;
- a first bracket mounted on the side wall, the side wall having an aperture formed therein in diametrically opposed location with respect to the bracket;
- an elongated, tubular shaft secured rotatably in the bracket and extending outwardly of the aperture, the shaft having a slot therein,
- an extension element on the outer end of the shaft;
- a transverse cross plate fixedly secured to the shaft and having upstanding end portions, the cross plate being tiltable with the shaft upon rotation thereof;
- a rod mounted in the housing in transverse relation to the shaft;
- an annular mounting rim pivotally mounted within the housing side wall, on an axis parallel to the shaft;
- a maze plate, having a plurality of obstructions, a plurality of apertures formed therein, and an indicated pathway between the obstructions and the apertures, pivotally mounted within the rim on a diametric axis parallel to said axis of said rod;
- links pivotally connected to the cross plate end portions at spaced locations on opposite sides of the pivot axis of the rim;
- a bell crank having an outer arm and a lower arm and extending through the slot of the shaft, mounted on the rod intermediate the arms;
- a forward link pivoted to the crank outer arm and to the maze plate at a location spaced from the pivot axis of the maze plate;

- a control rod connected to the bell crank lower arm and extending through the shaft to the outer end thereof; and
- a handle pivoted to the shaft outer end and pivoted to the control rod.

2. An amusement device comprising:
- a housing including a tubular, vertically disposed side wall and a base;
- the side wall having inner and outer sides, a top portion, a bottom portion, and having an aperture therein;
- a first bracket mounted on the inner side of the side wall diametrically opposite the aperture;
- an elongated, tubular shaft, having inner and outer ends, secured rotatably to the first bracket at the inner end, and the outer end extending outwardly of the aperture;
- an upwardly curved extension element on the outer end of the shaft, the extension having an open side and a pair of upstanding ears;
- the shaft having a slot formed therein;
- a transverse cross plate fixedly secured to the shaft, having upstanding outer end portions, the cross plate being tiltable with the shaft upon rotation thereof;
- a pair of second brackets secured to the side wall inner side on a diametric axis perpendicular with respect to the shaft;
- a rod mounted in the second brackets;
- an annular mounting rim pivotally mounted within the top portion of the side wall, on an axis parallel to the shaft;
- a maze plate, having a plurality of obstructions, a plurality of apertures therein, and a pathway between the obstructions and apertures, pivotally mounted within the rim on a diametric axis parallel to said rod;
- links pivotally connected to the cross plate outer end portions at spaced locations on opposite sides of the pivot axis of the rim;
- a bell crank having an outer arm and a lower arm, the lower arm extending through the slot of the shaft, the crank being mounted on the rod intermediate the arms;
- a forward link pivoted to the crank outer arm and to the maze plate at a location spaced from the pivot axis of the maze plate;
- a control rod connected to the bell crank lower arm and extending through the shaft to the outer end thereof; and
- a handle pivoted between the ears of the extension and pivoted to the control rod.

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ANTON O. OECHSLE, *Primary Examiner.*

GEORGE J. MARLO, *Examiner.*