United States Patent

[11] **3,549,149**

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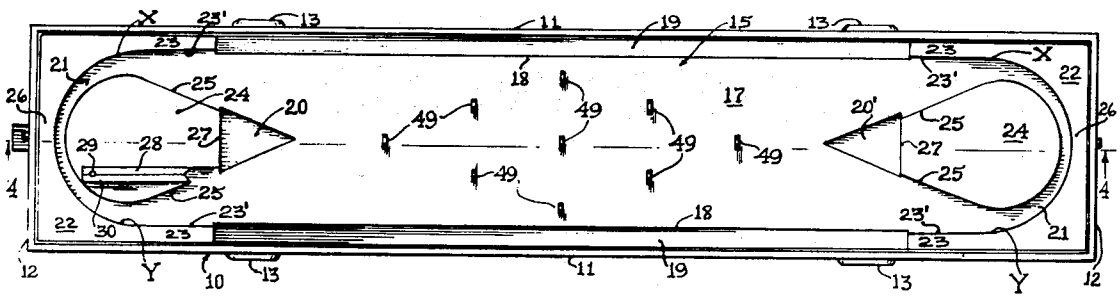
[54] **AMUSEMENT BALL-ROLLING SKILL GAME APPARATUS**
10 Claims, 7 Drawing Figs.

[52] **U.S. Cl.** **273/110**
[51] **Int. Cl.** **A63b 67/14**
[50] **Field of Search** 273/110, 113, 115, 109, 116, 108

[56] **References Cited**
FOREIGN PATENTS
1,507,925 12/1967 France 273/110

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ABSTRACT: A game apparatus having a play board mounted within a cabinet in a manner such that the board has a limited pivotal motion about the long axis thereof to direct a ball toward one or more targets to control the velocity and duration of movement of the ball, resulting in maintaining the ball in motion an indefinite period of time, depending upon the skill of the player.



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SHEET 1 OF 2

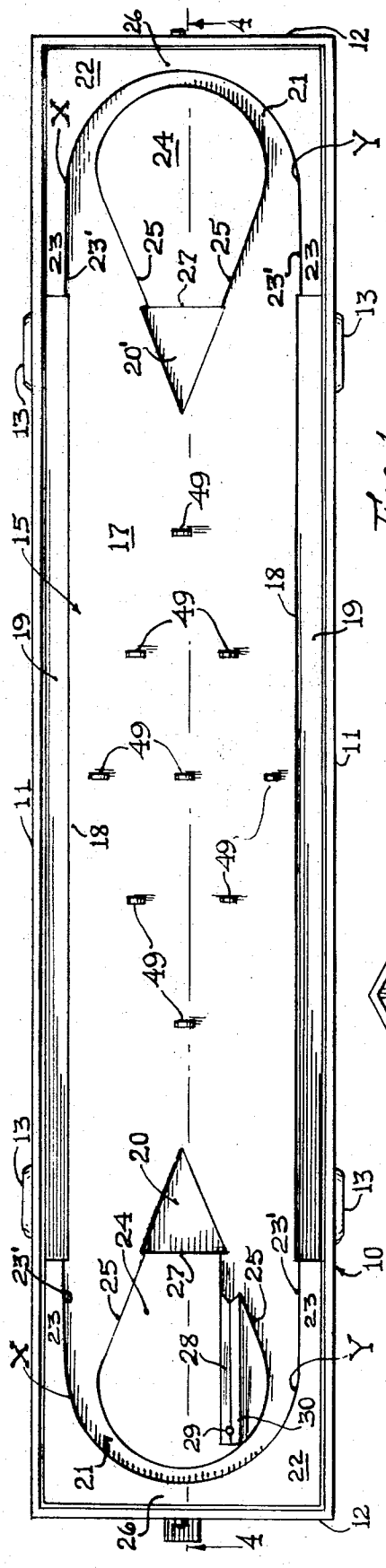


Fig. 1.

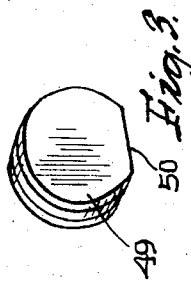


Fig. 3.

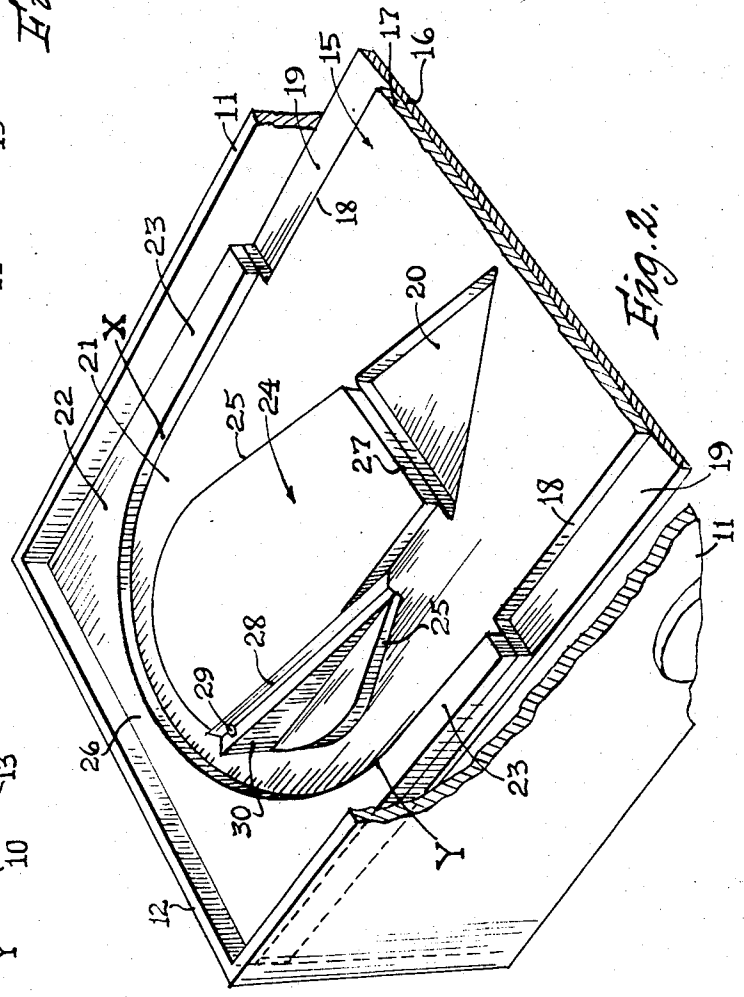


Fig. 2.

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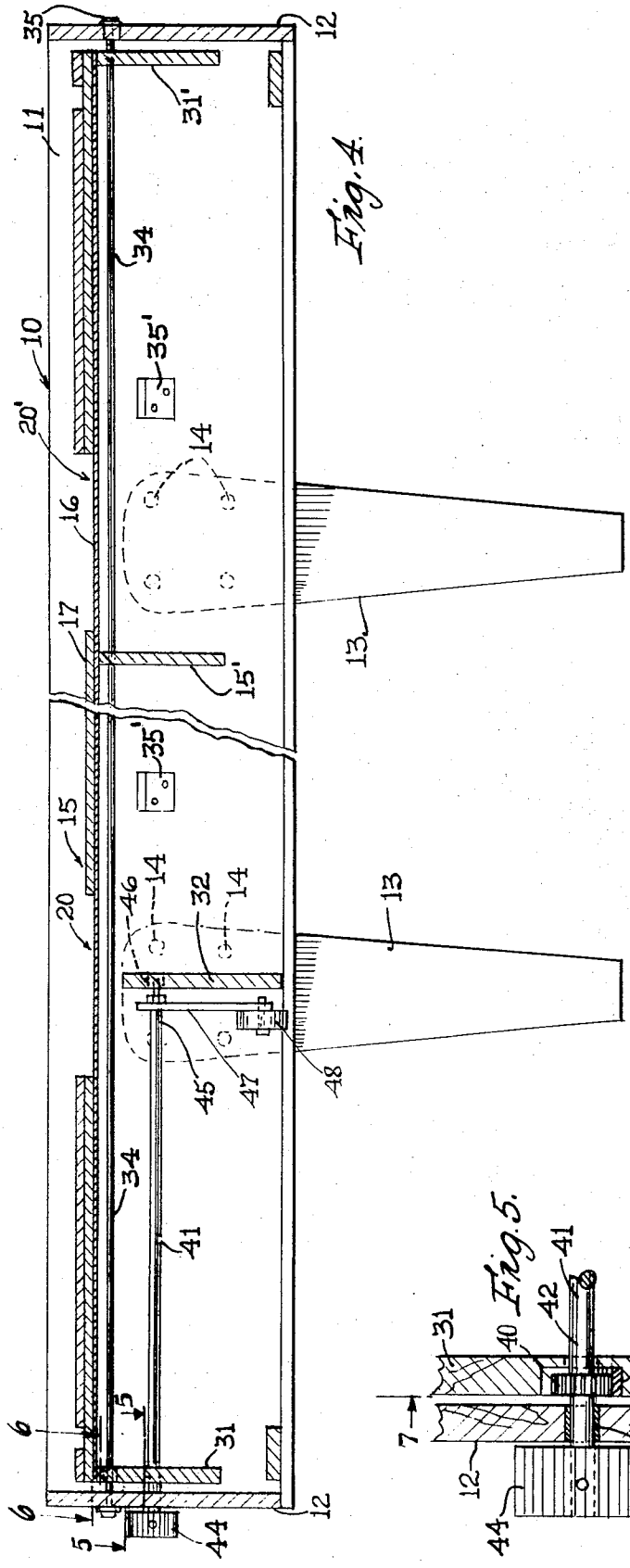


Fig. 4.

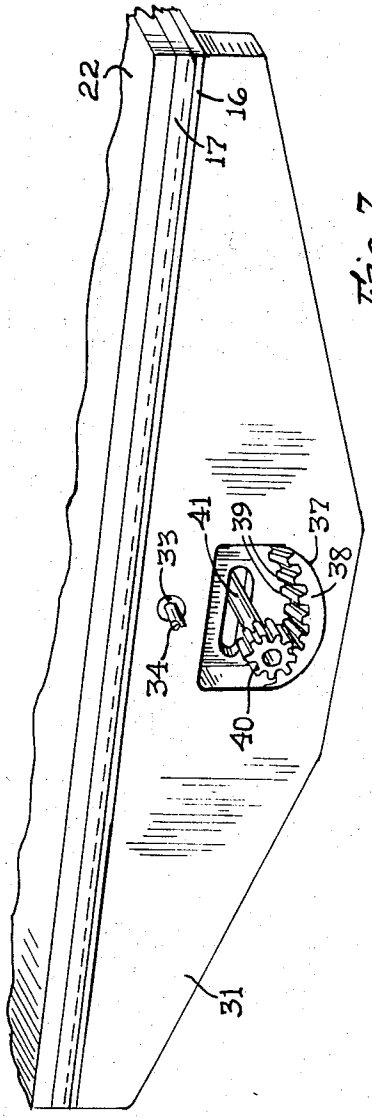


Fig. 7.

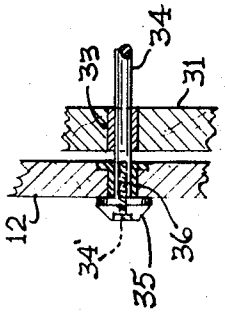


Fig. 6.

Fig. 5.

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AMUSEMENT BALL-ROLLING SKILL GAME APPARATUS

SUMMARY OF THE INVENTION

In the prior art to which this invention relates, ball-rolling game apparatuses are to be found in which there is provided an inclined playing board having a limited tiltable motion about the long axis thereof. In such game apparatuses the ball is projected from one end of the board for gravitation theredown against the targets. The player manually tilts the board about its long axis in an endeavor to direct or divert the movement of the ball against the targets. When the ball reaches that end of the board from which it was originally projected, it finds its way into a ball elevator to a projecting device for reprojection upon the board.

Our invention has for its object the provision of not only directing or deflecting the movement of the ball toward the target or targets, but also the provision of controlling the speed and duration of the movement of the ball back and forth over the play board, the speed and duration of movement of the ball depending upon the skill of the player.

The invention consists in the novel combination and arrangement of parts to be hereinafter described and claimed.

The invention will be best understood by reference to the accompanying drawings showing the preferred form of construction, and in which:

FIG. 1 is a plan view of our improved game apparatus;

FIG. 2 is a fragmentary perspective and sectional detail view of the starting end of the game apparatus;

FIG. 3 is a perspective view of a suggested target embodied in the invention;

FIG. 4 is a longitudinal sectional detail view taken substantially along line 4–4 of FIG. 1;

FIG. 5 is a fragmentary sectional detail view taken substantially on line 5–5 of FIG. 4;

FIG. 6 is a fragmentary sectional detail view taken substantially on line 6–4 of FIG. 4;

FIG. 7 is a perspective view taken substantially on line 7–7 of FIG. 5.

Referring now particularly to the drawings showing the preferred form of construction of our invention, a cabinet is indicated at **10**. The cabinet **10** comprises sidewalls **11** and end walls **12** and supporting legs **13** connected to the sidewalls **11** as at **14**.

A play board is generally indicated at **15** and is of elongated formation as shown and of a size to rockably fit within the confines of the side and end walls **11** and **12**, respectively. In the instant case, this play board comprises an elongated relatively flat subboard **16** of plywood construction and secured to and forming a part of an elongated relatively flat top board **17** which provides the playing surface of the game apparatus. Intermediate its end portions, the top board **17** provides between the long edges **18** thereof and the sidewalls **11** of the cabinet, gutters **19** for reasons hereinafter made apparent.

Formed in the opposite end portions of the board **17** are recesses **20** and **20'** providing traps for the ball. On the board **17** at opposite ends thereof is a ball runway **21**. This runway **21** is defined by a U-shaped sector **22** having parallel extensions **23**. Within this sector **22** is arranged a plate **24** having its opposite inner edges **25** converging toward each other and diverging from the side edges **23'** of the extensions **23** so as to provide, together with the extensions **23** of the sector **22** a ball runway diminishing in width toward the medial portion **26** of the sector **22**. The inner end portion **27** of the plate **24** terminates at the adjacent end of the trap **20** (**20'**).

Mounted on one of the plates **24** (see FIGS. **1** and **2**) at one side of its long axis is a ball ramp **28** inclined downwardly and inwardly to merge with the board **17**, the ramp **28** being triangular in cross section to guide a rolling ball down upon the board **17**. A ball seat **29** is formed at the upper end portion **30** of the ramp **28**, onto which seat a ball is positioned for its starting movement down the ramp **28** onto the board **17**.

At each end of the board **17** is a depending support **31** and **31'** secured to the play board **17** in any suitable manner. Adjacent one end of the cabinet **10** is a partition **32**. The supports **31** and **31'** have mounted in an opening formed therethrough a tubular bearing **33**. Through these tubular bearings **33** **33** extends a rod **34** which supports the play board **15** in a substantially horizontal plane and upon which rod the play board has limited pivotal movement as hereinafter described. On the ends of the rod **34** are retaining caps **35** to which such ends are fixedly secured by bolts **34'** screw-threaded into the end portions of the rod **34**. The ends of the rod **34** extend through bushings **36** formed in the end walls **12** of the cabinet **10**.

Formed in the support **31** is a recess **37** in which there is fixedly mounted a curved rack bar **38**. Meshing with the rack bar teeth **39** are the teeth of a pinion **40** fixedly carried by a shaft **41**. The degree of pivoting of the play board **15** about the rod **34** is limited by the engagement of the rack bar teeth **39** with the pinion **40**. The end **42** of the shaft **41** extends through an opening **43** formed in the adjacent end wall **12**. Secured to the end **42** of the shaft **41** is a hand wheel or knob **44**. The inner end portion **45** of the rod **41** is journaled in a bushing **46** formed in the partition **32**. Carried by and fixed to the end portion **45** of the rod **41** adjacent the partition **32**, is a depending arm **47** which carries at its lower end portion a counterweight **48**. The counterweight **48** functions to return the play board **15** to a substantially horizontal plane upon release of the knob **44** by the player.

In FIG. **3** we have illustrated a suggested playing piece or target **49**. This playing piece **49** has a flat bottom **50** which facilitates placing the playing pieces upon the play board surface **17** in the manner suggested in FIG. **1**. These positions of the playing piece or target **49** may vary according to the desire of the maker of the game apparatus. As pointed out, our invention has for its principal object that of providing a play board which may not only be tilted for the purpose of directing the rolling ball in the direction of one or more targets, but also to maintain the ball in motion an indefinite period of time, depending upon the skill of the player. This is accomplished in the following manner:

The player places the ball to be put in motion, upon the seat **29**. By means of a finger of his hand, he strikes the ball to propel it down the ramp **28** onto the play board **15**. The player thereupon manipulates the hand wheel **44** to pivot the play board about the rod **34** in an endeavor to direct the ball at a selected target **49**. The kinetic energy of the ball will continue the movement of the ball into the ball runway **21** at the end of the board in the direction in which the ball is traveling. At an approximate point, for the purpose of explanation indicated at X (FIG. 1), the rolling ball will bear against the outer edge **23'** of the runway **21** and travel therealong. When the ball reaches an approximate point selected by the player and indicated at Y (FIG. 1), the player will by quick manipulation of the knob **44**, pivot the board **15** about the long axis of the rod **34**, with the result that the ball is whipped away from the edge **23'** against which it is rolling. The velocity of the ball is increased by this whipping action and may result in the ball entering the runway **21** at the opposite end of the board, where the same action on the part of the player may take place to maintain the ball in motion. Such action of the ball and the player may continue until all the targets **49** are struck or until the ball runs off the play board into one of the gutters **19** or into the trap **20** or **20'**.

It is pointed out that as long as the ball is in motion on the play board and has sufficient kinetic energy to carry it through the ball runways at opposite ends of the board, the player by the action just described, may keep the ball in motion an indefinite period of time.

The knob **44** may be in the form shown in the drawings or in the form of a wheel having handles thereon or a hand lever, or such other form as will accomplish the desired result.

Intermediate the ends of the board **15** there may be carried or connected thereto one or more strengthening panels **15'** for maintaining the board in a substantially horizontal plane.

Suitable means in the form of rubber-covered blocks 35' or the like may be also also be provided at spaced intervals along the sidewalls of the cabinet 10 so as to limit the pivotal movement of the board about the long axis of the rod 34.

From the foregoing description, it will be apparent that we provide a skill game apparatus which, while requiring a concerted action of the eye, muscle, and nerve control in the playing of the game apparatus, will afford much amusement and pleasure in the making of skill plays of such apparatus.

While we have illustrated the preferred form of construction for carrying our invention into effect, this is capable of variation and modification without departing from the spirit of the invention. We, therefore, do not wish to be limited to the precise details of construction set forth, but desire to avail ourselves of such variations and modifications as come within the scope of the appended claims.

We claim:

1. An amusement ball-rolling skill game apparatus comprising:
   a. an elongated cabinet;
   b. an elongated play board having a short axis and a long axis perpendicular thereto arranged in said cabinet having an upper surface upon which a ball is adapted to travel;
   c. means for supporting said board within said cabinet in a substantially horizontal plane for pivotal movement about the long axis of said board;
   d. means at opposite ends of said board each providing a substantially U-shaped ball runway having inner and outer edge portions;
   e. said runway having its corresponding inner edge portions converging toward each other and in a direction away from the outer edge portions thereof; and
   f. means for pivoting said board about said long axis whereby to whip the ball away from the edge portion of the runway against which the ball is rolling, to increase the velocity of said ball and divert its direction of travel over said surface of said board.

2. The game apparatus defined in claim 1 characterized by the provision of counterbalancing means for said play board.

3. The game apparatus defined by claim 2 characterized by the provision of a plurality of targets movably mounted on said play board and against which said ball is adapted to be directed by the pivoting of said board by said pivoting means.

4. The game apparatus defined by claim 1 wherein the means for pivoting said board about its long axis includes a manually rotatable shaft, a pinion carried by said shaft, and a rack bar meshing with said pinion and carried by said board.

5. The game apparatus defined by claim 4 characterized by the provision of counterbalancing means for said play board.

6. The game apparatus defined by claim 1 characterized by the provision of a plurality of targets movably mounted on said play board and against which said ball is adapted to be directed by the pivoting of said board by said pivoting means.

7. The game apparatus defined by claim 1 wherein there is provided by the cabinet, means for limiting the degree of pivoting of said board by said pivoting means.

8. The game apparatus defined by claim 1 wherein there is provided at one end of said board a ball ramp for directing a ball to said play board for movement over the surface thereof.

9. The game apparatus defined by claim 8 in which there is provided at the upper end of said ramp a ball seat from which the ball is projected down said ramp onto said board.

10. The game apparatus defined by claim 9 in which there is provided a plurality of targets movably mounted on said play board and against which said ball is adapted to be directed by the pivoting of said board by said pivoting means.