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Matsumoto

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[54] **SIMULATED TENNIS GAME**

[75] Inventor: **Takoa Matsumoto**, Tokyo, Japan

[73] Assignee: **Tomy Kogyo Co., Inc.**, Tokyo, Japan

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[52] **U.S. Cl.** ..... **273/85 R**; 124/1; 124/4

[51] **Int. Cl.**[2] **A63F 7/06**

[58] **Field of Search** ..... 273/26 E, 29 A, 58 C, 85, 273/94 A, 94 B, 94 C, 94 D, 94 E, 94 F, 95 A, 200 R, 200 B, 129; 124/1, 4

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Primary Examiner—Richard J. Apley
Assistant Examiner—Harry G. Strappello
Attorney, Agent, or Firm—Edward D. O'Brian

[57] **ABSTRACT**

A simulated tennis game useful as a toy can be constructed utilizing an elongated, self-supporting arm mounted upon a support structure through the use of a gimbal joint permitting the arm to have angular movement in two different directions. A ball is located at one end of the arm and a counter-weight is secured to the other end of the arm. This structure permits the ball to be hit back and forth in much the manner in which a game such as tennis is played. Preferably the ball is hit through the use of actuator means which are constructed so as to be capable of being moved to various positions. Such actuator means are adapted to be manually operated so as to cause pivotal movement of individual paddles on them. The principles of the toy may be employed in other games than a simulated tennis game.

4 Claims, 4 Drawing Figures

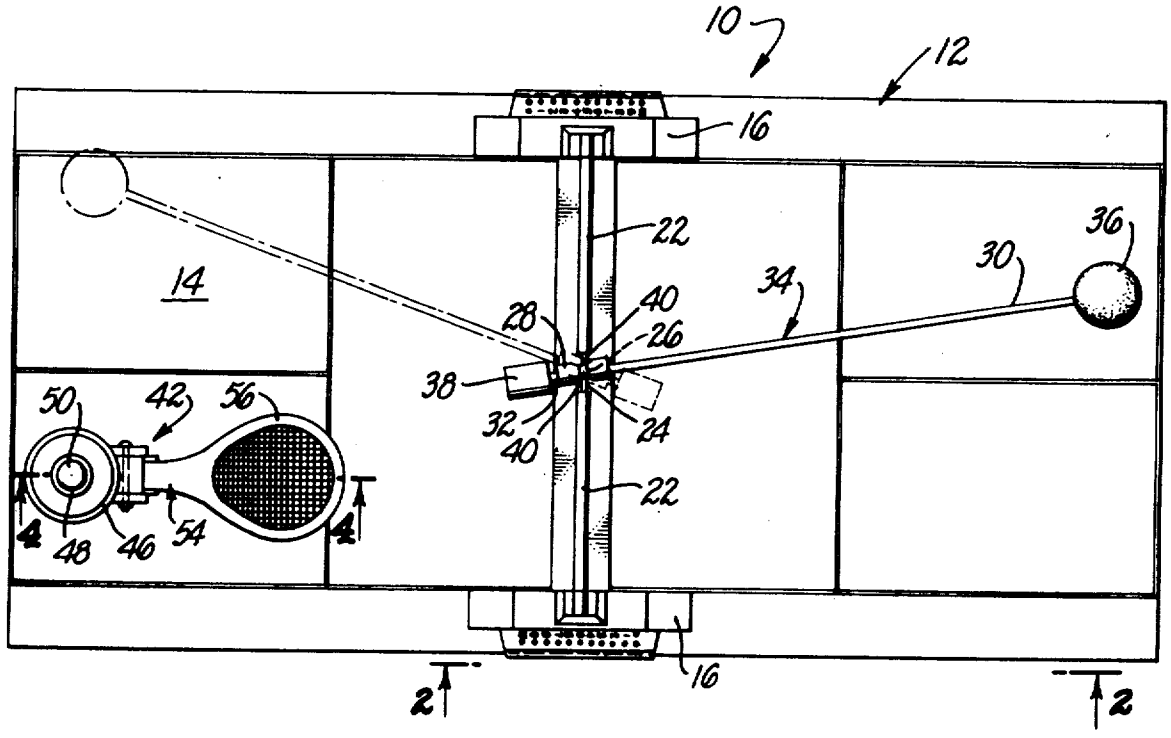


FIG. 1.

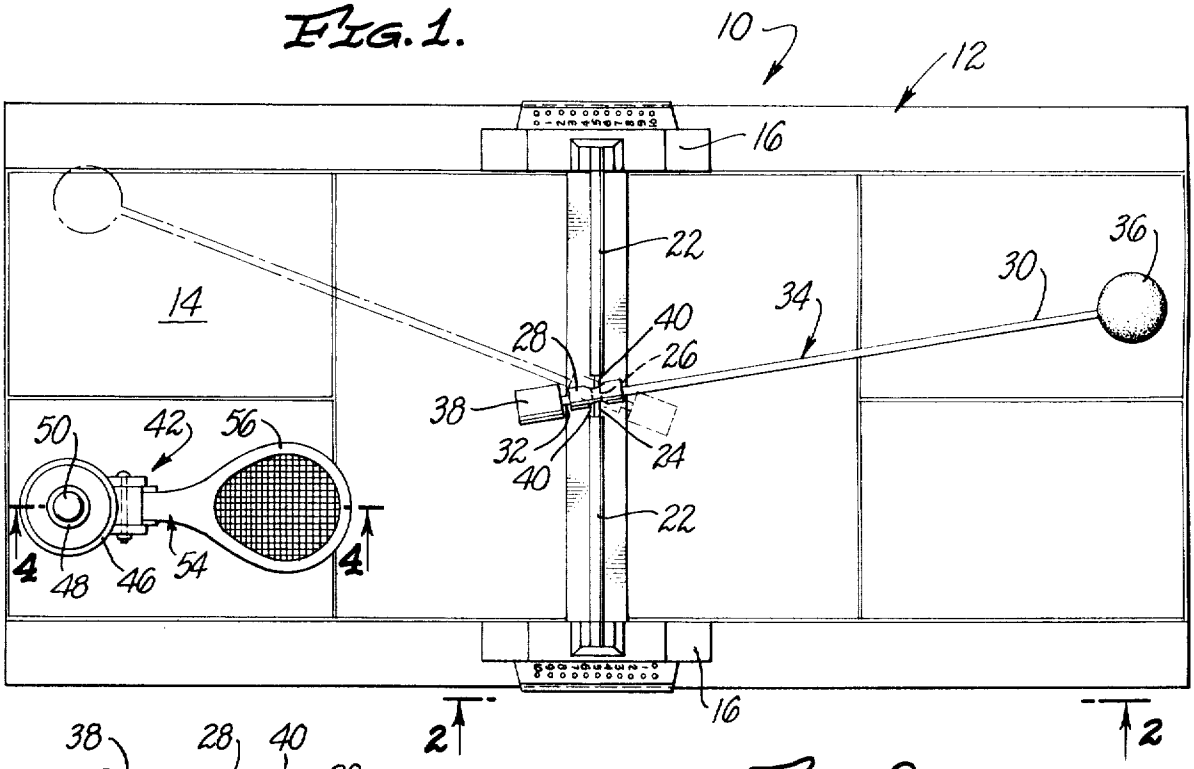


FIG. 2.

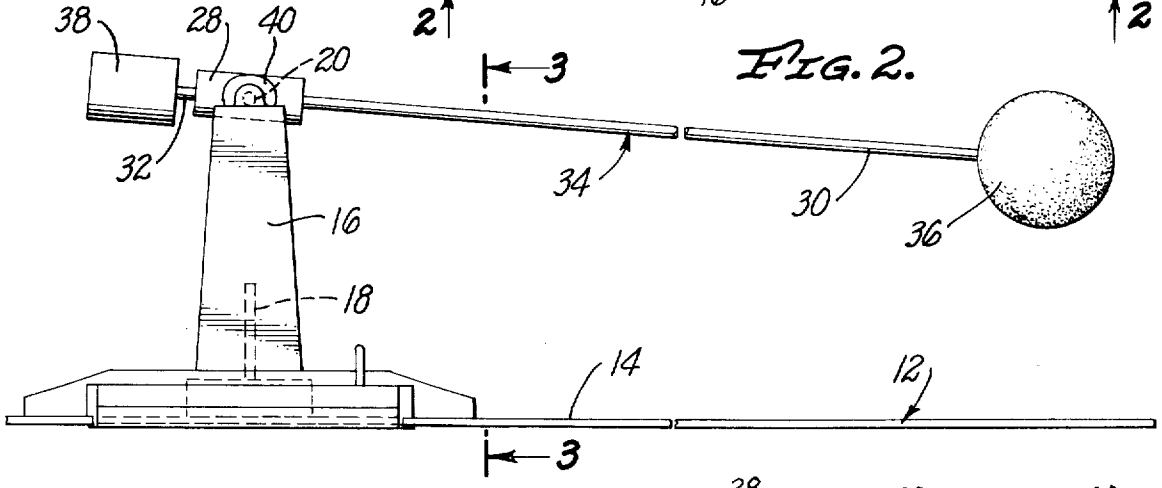
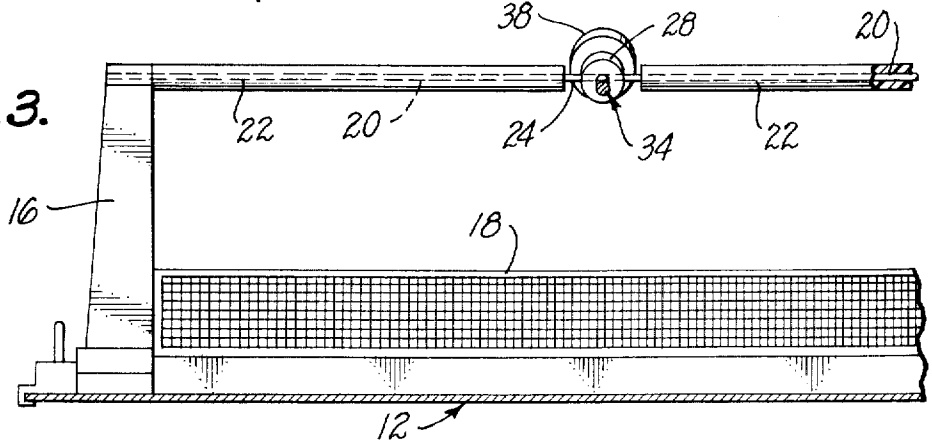


FIG. 3.



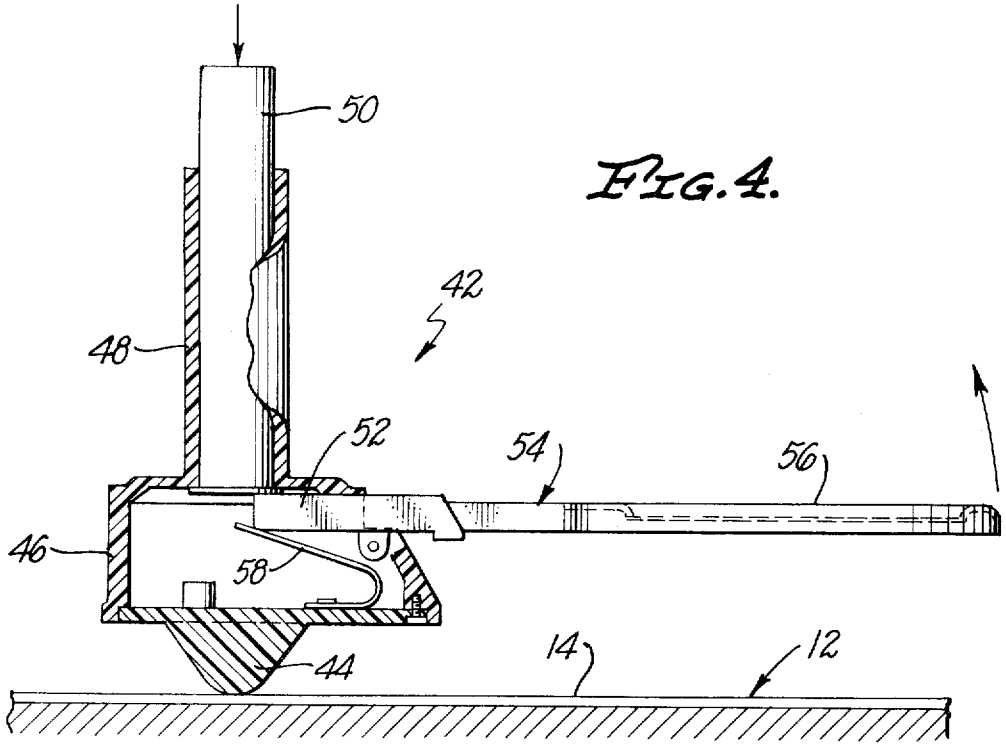


FIG. 4.

SIMULATED TENNIS GAME

BACKGROUND OF THE INVENTION

The invention set forth in this specification relates to games in which a ball is hit back and forth. More specifically the invention is primarily directed towards games of this type which are adapted to be utilized as toys by children.

It is a matter of common knowledge that there are many different games in which a ball is hit back and forth across an appropriate playing surface. Certain of such games may be referred to as adult games since they are primarily played by adults for exercise and/or relaxation. Frequently it is desired to simulate such adult games in toy games which can be played indoors. The simulation of adult games such as tennis or the like in games which can be played indoors has presented a problem to the toy industry. This problem primarily relates to the control of the ball used in such a game.

For an indoor toy to be acceptable for play purposes any ball used with such a toy should be connected or tied to at least part of the game structure so that the ball will not become lost and/or will not cause damage as the game is played in an indoor area. A number of different structures have been proposed and to varying extents used to control the movement of a ball in a toy game. Such balls have been connected to game structures by both elastic and non-elastic cords or tethers. Frequently such cords have been supported by an elevated support. It is even been proposed to mount the ball in such game on a spring wire which controls the movement of the ball.

All of these expedients are considered to be somewhat disadvantageous and/or undesirable for any of a plurality of different reasons. Cords such as are indicated in the preceding are apt to become tangled and/or broken. Frequently, they interfere with the regularity of ball motion after a ball is hit. A spring structure as indicated in the preceding discussion is considered undesirable inasmuch as the spring will significantly control or govern the movement of a ball.

BRIEF SUMMARY OF THE INVENTION

A broad object of the present invention is to provide new and improved games of the type in which balls are hit back and forth which overcome various undesirable aspects of prior related games as are briefly indicated in the preceding discussion. The invention is also intended to provide toy games which are comparatively simple and inexpensive to construct, which are easily and conveniently utilized, which possess a comparatively high degree of play value, and which are capable of being used for a prolonged period without maintenance or damage.

In accordance with this invention these objectives are achieved by providing in a game in which a ball is hit back and forth the improvement which comprises: an elongated self-supporting arm carrying a ball or a simulated ball at one of its ends and a counter-weight at the other of its ends, which is supported on a support structure by a gimbal joint means which holds the arm intermediate of its ends in such a manner that the arm is permitted to have angular movement in two different directions. In a game of this invention, preferably the support structure forms a part of a simulated playing area, such as, for example, a simulated tennis court. Preferably the ball in a game as described is hit back and forth through the use of one or more hand held and hand operated actuator means which include simulated paddles.

BRIEF DESCRIPTION OF THE DRAWINGS

Additional details relative to this invention will be apparent from a careful consideration of the remainder of this specification, the appended claims, and the accompanying drawings in which:

FIG. **1** is a top plan view of a presently preferred embodiment or form of a game in accordance with this invention, this specific game being a simulated tennis game;

FIG. **2** is an enlarged partial side-elevational view taken at line **2—2** of FIG. **1**;

FIG. **3** is a partial cross-sectional view taken at line **3—3** of FIG. **2**; and

FIG. **4** is a partial cross-sectional view taken at line **4—4** of FIG. **1**.

The basic concepts of the present invention are summarized in the appended claims. These concepts need not be employed in a toy game constructed exactly as illustrated in the drawing. They can be easily embodied in a wide variety of somewhat differently appearing and somewhat differently constructed games through the use or exercise of routine engineering skill.

DETAILED DESCRIPTION

In the drawings, there is shown a simulated tennis game **10** of the present invention which includes a flat support structure **12** which is adapted to be utilized on a table top or the like. This support structure **12** includes a top playing surface **14** which is preferably divided off by printing, painting or the like to simulate a conventional full size tennis court. Side uprights **16** are located on the surface **14** so as to extend upwardly from it. These uprights **16** approximately correspond to the posts used in the conventional game of tennis to hold the net inasmuch as they serve to support a simulated tennis net **18** as shown.

These uprights **16** also serve to carry an elongated rigid rod **20** so that this rod **20** extends parallel to the surface **14** and the net **18** a comparatively short distance above this net **18.** Preferably cylindrical spacers **22** are located around the rod **20** in such a manner as to extend towards the center of this rod **20** from the uprights **16.** It is noted that these spacers **22** are dimensioned so as to leave a small centrally located length **24** of the rod **20** uncovered. This length **24** of the rod **20** fits through a hole **26** in a fitting **28** located intermediate the ends **30** and **32** of an elongated self-supporting arm **34.** The end **30** carries a simulated ball **36** while the end **32** is secured to a counter-weight **38.** The fitting **28** is constructed so as to have necked down sides **40.**

The entire fitting **28** is constructed so as to cooperate with the length **24** of the rod **20** in such a manner as to create what may be referred to as a type of gimbal joint. As used herein, this term "gimbal joint" is intended to designate a structure such as is illustrated in which there are two mutually perpendicular axis of rotation permitting angular movement in two different directions. From this definition it will be apparent that the expression "gimbal joint" as used herein is a comparatively broad expression encompassing any of a variety of contrivances or devices permitting a body to incline freely in several directions.

With the precise structure shown the arm **34** is not only pivotably mounted so that it can rock back and forth on the rod **20**, but it is also mounted in such a manner that it can rock at various different angles on the rod **20**. There is a minor degree of limitation to the latter resulting from the geometry of the sides **40** of the fitting **28** and the possibility of contact with the spacers **22**. For preferred results the game **10** should be constructed so that the arm **34** can rock back and forth in such a manner that the ball **36** engages an area roughly corresponding to the area of the simulated tennis court on the surface **14** plus a small area adjacent to the simulated tennis court.

As the game **10** is used, the ball **36** is hit so that it will rock back and forth in much the manner in which a conventional tennis ball is hit so as to traverse a net. Because of the nature of the somewhat constrained movement of the ball **36** it is preferred to hit the ball so that it goes back and forth as the game **10** is played through the use of an actuator or actuator means **42**. Normally as the game **10** is played, two of these actuators **42** are used by two different persons playing the game. However, only one actuator **42** is illustrated in the drawing in the interest of simplicity since the game **10** can be played by only one person utilizing one actuator **42**.

The actuator **42** preferably includes a rounded, downwardly extending base **44** which is adapted to be positioned against the surface **14** in any desired location and at any desired angle as the actuator **42** is employed. This base **44** carries a small housing **46** which in turn carries an upwardly extending tubular handle **48** designed to be engaged by the fingers on a hand. When the actuator **44** is so engaged, it may conveniently be moved on the surface **14** to various locations where it can be used to hit the ball **36** as the ball **36** goes back and forth.

In order to hit the ball **36** a plunger **50** extending through the handle **48** is normally pushed downwardly with a thumb, although it may be engaged in other manners as is pushed downwardly. Such downward movement depresses an end **52** of a lever **54** which is pivotally mounted on the housing **46** so as to extend from this housing **46**. The other end **56** of the lever **54** is thus caused to move upwardly. Although the ball **36** may be hit by this end **56** through the actuation of the actuator **42** if the actuator **42** is of virtually any shape it is preferred to form the end **56** so as to simulate a tennis racket. This provides an enlarged area for use in hitting the ball **36**. Upon release of the plunger **50** a small spring **58** returns the lever **54** and the plunger **50** to their original positions.

I claim:

1. A simulated tennis game which comprises:

a flat support structure having a top playing surface having means thereon simulating a tennis court,

upstanding posts corresponding to the net posts used with a tennis court located on said support structure so as to extend upwardly from said playing surface,

an elongated, rigid rod extending parallel to said surface and above said surface, said rod being held by said posts,

a fitting having a hole extending therethrough located on said rod with said rod extending through said hole, said fitting and said hole being shaped so that said fitting can rock back and forth on said rod at various different angles with respect to said rod in such a manner that there can be angular movement in two different directions,

a spacer means for preventing said fitting from moving along the length of said rod located on said rod on each side of said fitting,

an elongated self-supporting arm extending from said fitting,

a simulated ball secured to the extremity of said arm remote from said fitting,

a counterweight operatively connected to said arm remote from said ball,

two actuating means for hitting said ball so as to cause said ball to move back and forth,

each of said actuator means being capable of being manipulated so as to be positioned anywhere along said top surface on either side of said rod.

2. A simulated tennis game as claimed in claim **1** wherein:

said spacer means are cylindrical sleeves fitting around said rod and extending from said posts, said sleeves having adjacent ends which are spaced from one another.

3. A simulated tennis game as claimed in claim **1** wherein:

each of said actuator means comprises

a base adapted to rest against said top surface at any of a plurality of angles to said playing surface and at any position upon said playing surface,

a handle extending vertically upward from said base,

an actuating member movably mounted on said handle so as to be capable of linear movement generally toward said base,

a paddle member pivotally mounted on said base intermediate its ends, one end of said paddle member being engaged by said actuating member so that as said actuating member is moved toward said base the other end of said paddle member is pivotted upward,

said spring means located within said base for biasing said paddle member and said actuating member generally away from said base,

4. A simulated tennis game as claimed in claim in claim **1** wherein:

said spacer means are cylindrical sleeves fitting around said rod and extending from said posts, said sleeves having adjacent ends which are spaced from one another,

each of said actuator means comprises

a base adapted to rest against said top surface at any of a plurality of angles to said playing surface and at any position upon said playing surface,

a handle extending vertically upward from said base,

an actuating member movably mounted on said handle so as to be capable of linear movement generally toward said base,

a paddle member pivotally mounted on said base intermediate its ends, one end of said paddle member being engaged by said actuating member so that as said actuating member is moved toward said base the other end of said paddle member is pivotted upward,

said spring means located within said base for biasing said paddle member and said actuating member generally away from said base.

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