United States Patent

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[73] Assignee **Marvin Glass & Associates Chicago, Ill.**

[54] **GAME APPARATUS WITH JUMPING STICK**
9 Claims, 7 Drawing Figs.

[52] **U.S. Cl.** **272/74, 273/1**
[51] **Int. Cl.** **A63b 5/22**
[50] **Field of Search** ..... 277/74, 75, 31, 31 A

[56] **References Cited**
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ABSTRACT: Game apparatus for use in a jumping game of elimination including a stationary base supporting a rotatably driven member having an outwardly extending bar movable with the member through a sweeping path generally parallel to the floor. The players are expected to skillfully jump over and avoid contact with the sweeping bar. Momentary contact with the bar is indicated by termination of the bar movement. If the bar is struck by a player, the outer end of the bar drops to the floor and the drive between the base and the rotatable member is interrupted.

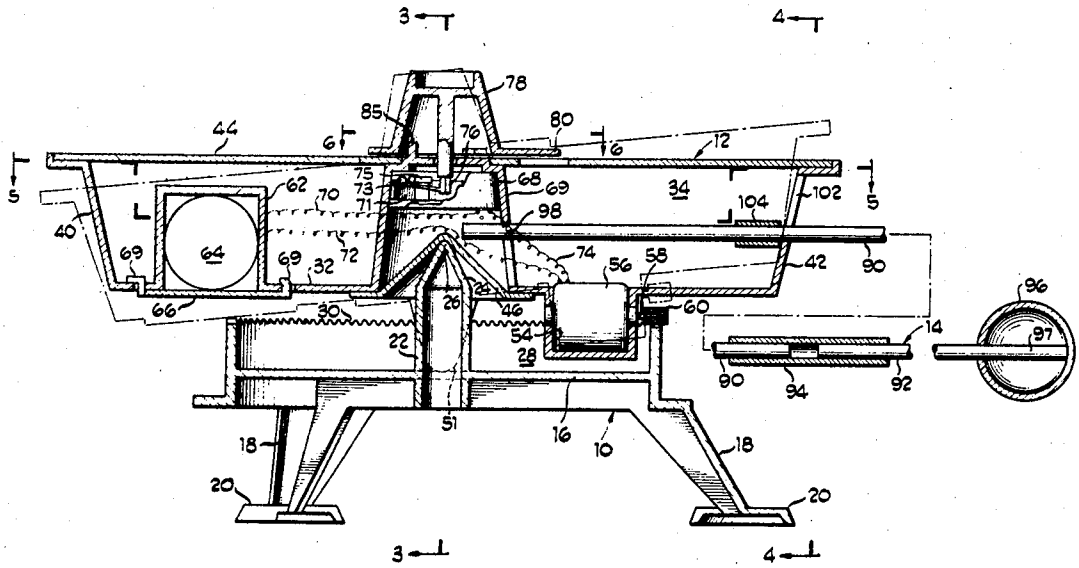


Fig 1

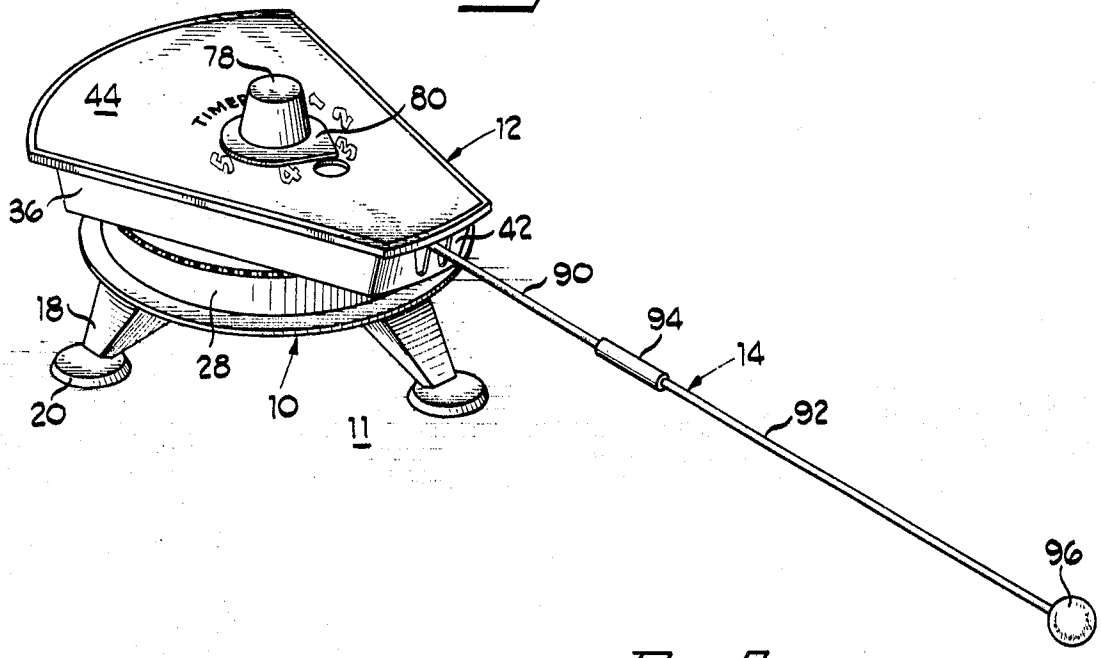


Fig 6

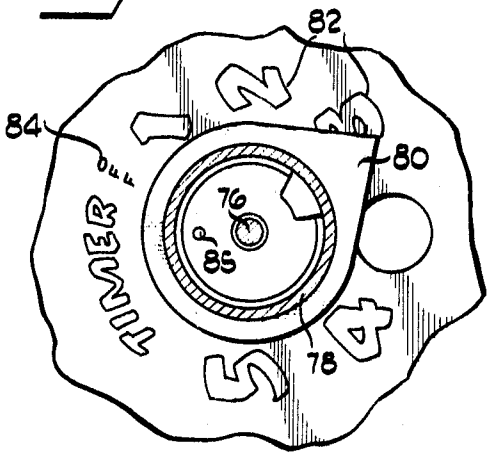
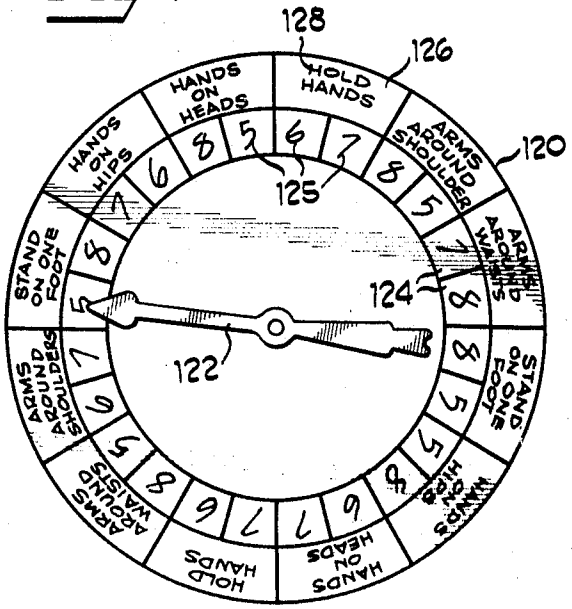


Fig 7



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Fig 3

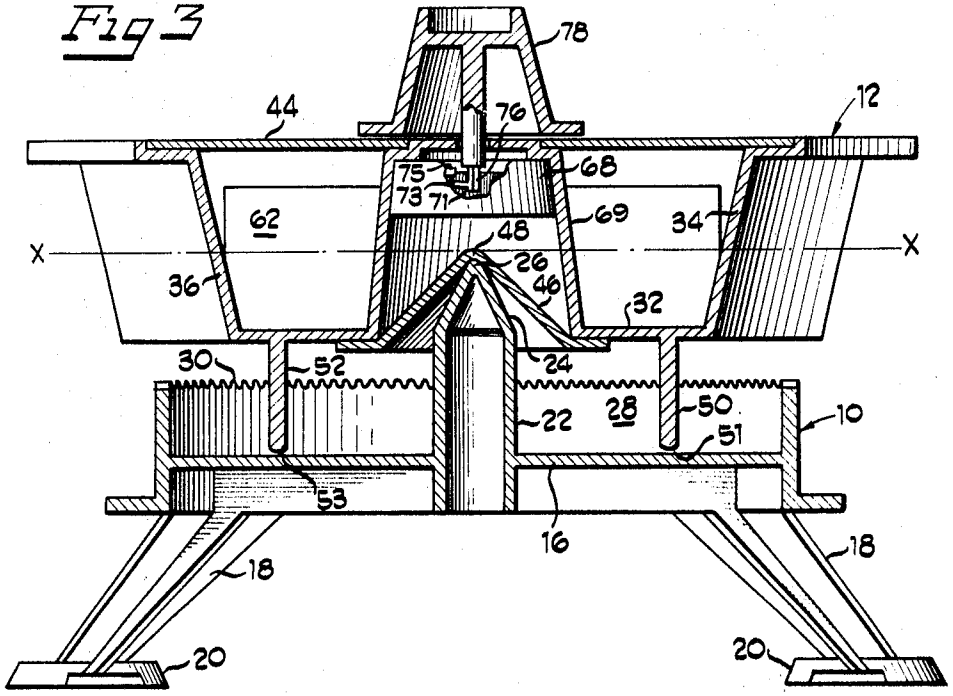
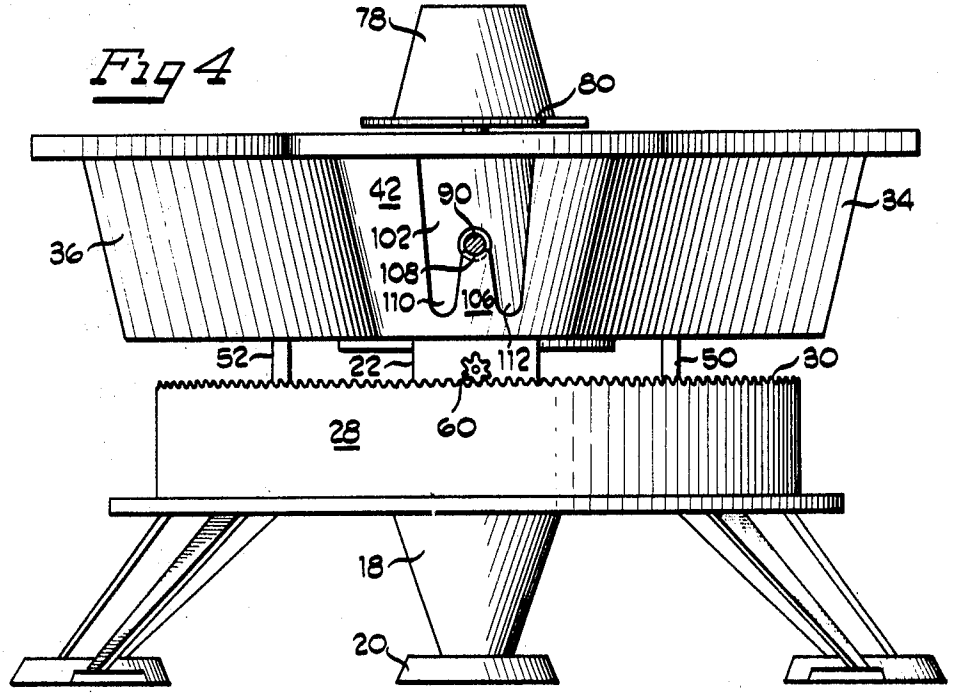


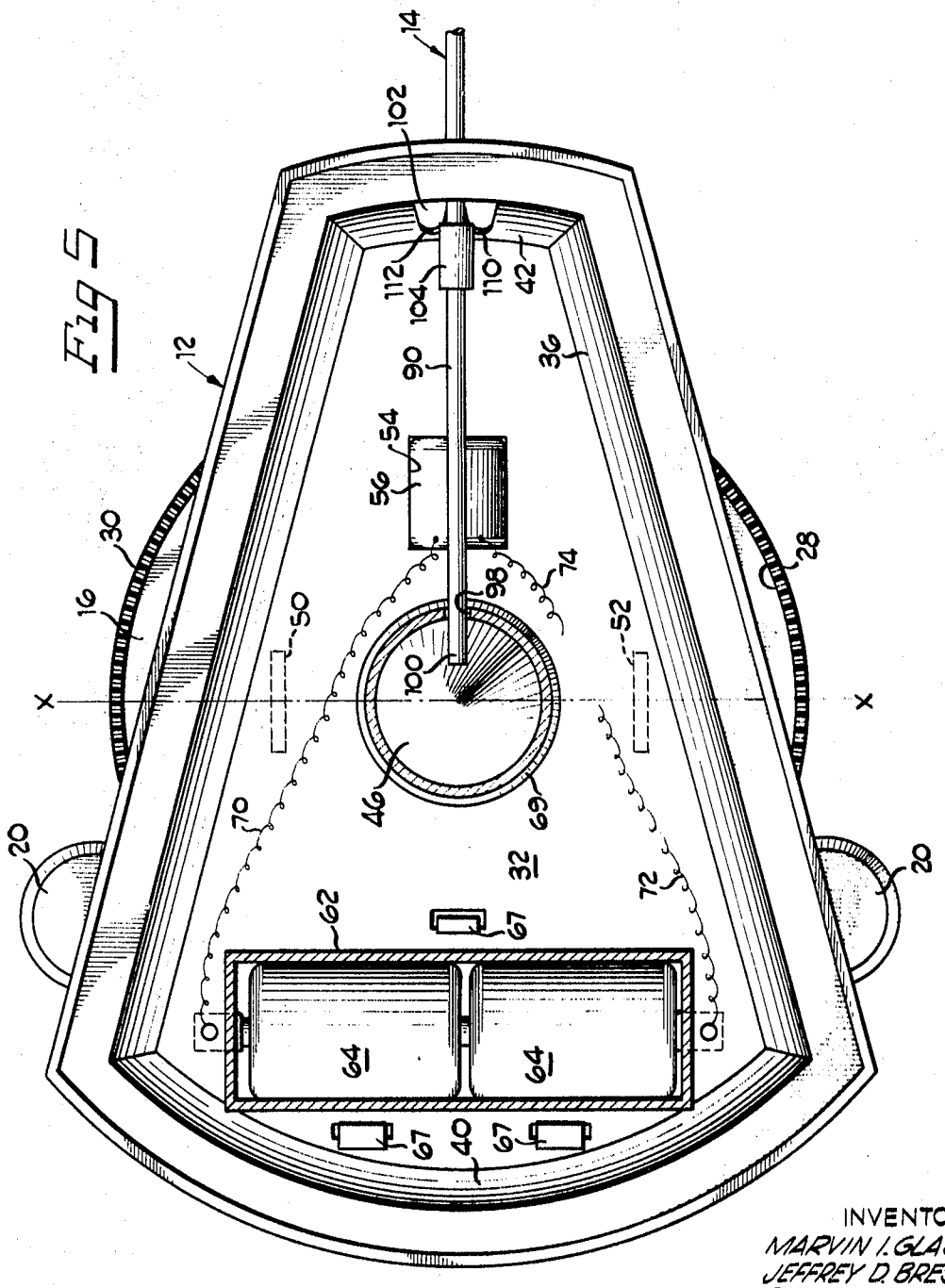
Fig 4



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Fig 5



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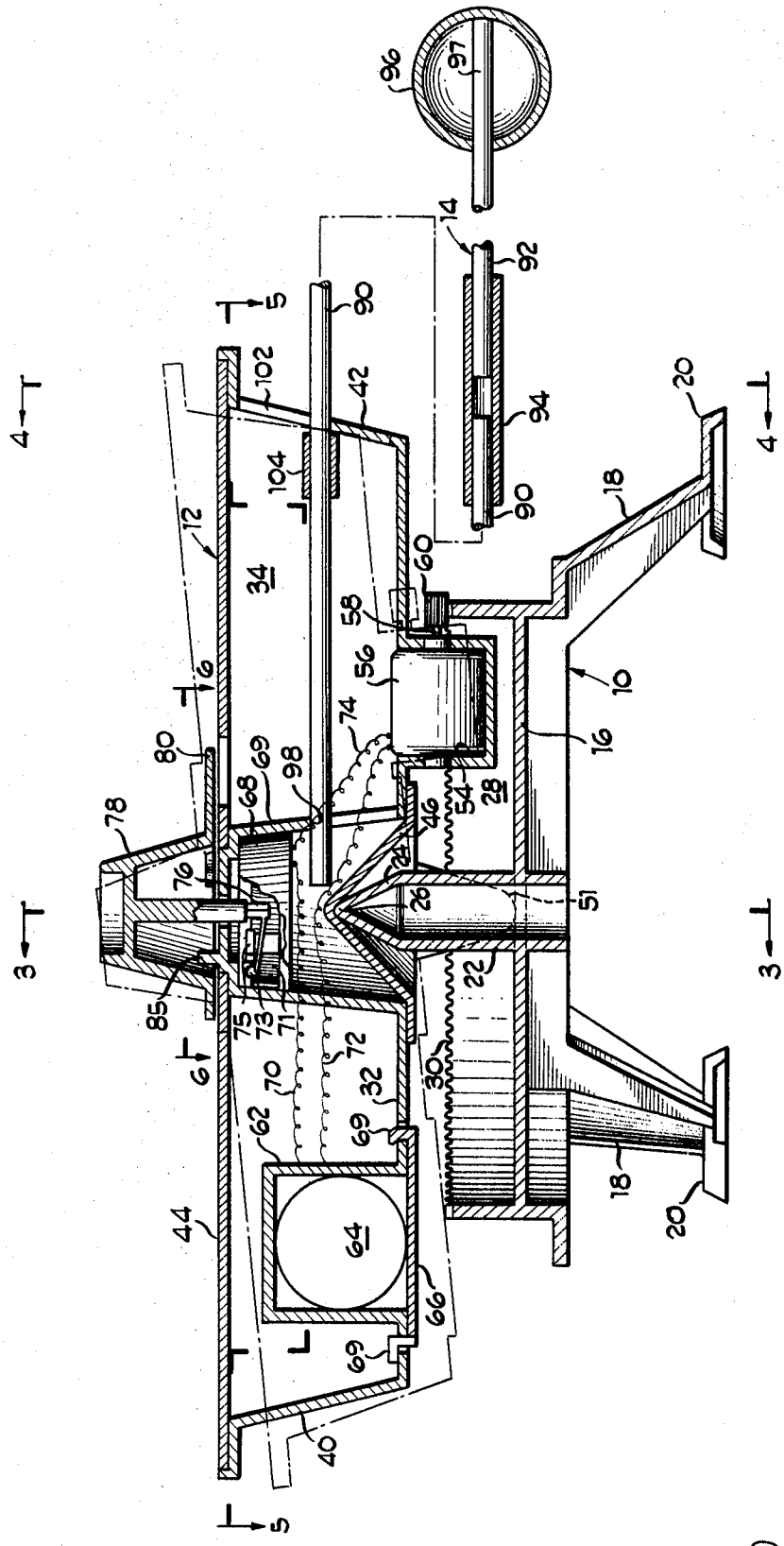


Fig 2

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GAME APPARATUS WITH JUMPING STICK

This invention relates in general to game apparatus. In particular, this invention is directed to game apparatus for use in a game of elimination wherein players are expected to skillfully jump over and avoid contact with a horizontally sweeping bar.

Apparatus for use with various forms of jumping activities is well known in the prior art. This apparatus typically comprises a continuously driven horizontally oriented, elevated bar which sweeps through a horizontal plane above the floor surface. The bar is typically driven at a given, nonvariable speed and the participants are expected to jump over the bar without being struck thereby. While such apparatus may be constructed so as to prevent injury to the users upon being inadvertently struck by the bar, the drive mechanism of the prior art is continuously engaged and means are not provided for positively indicating that a user has momentarily contacted the bar. This positive indication is important when such apparatus is utilized in a game of elimination.

This invention provides a horizontally rotating, sweeping bar for use in an elimination-type jumping game wherein contact with the bar is indicated by termination of bar movement. In addition, the apparatus of the invention provides means for varying the rotational speed of the bar to thereby vary the difficulty encountered by the game players in avoiding contact with the bar, and to thereby test the players jumping skills and coordination.

The apparatus of the invention may also be employed as an exercise device wherein the energy exerted by the user is proportional to the rotational speed of the bar.

Accordingly, the primary object of this invention is to provide novel apparatus for use in a jumping game.

Another object of this invention is to provide game apparatus including a horizontally rotating bar for use in a jumping game, wherein rotation of the bar is terminated upon contact of the bar by a game player.

Another object of this invention is to provide jumping game apparatus including a rotatably driven horizontal bar, wherein the rotational rate of the bar may be varied and wherein contact with the bar is positively indicated by termination of the bar movement.

A further object of this invention is to provide jumping-game apparatus including a rotatable, vertically displaceable bar which normally sweeps through a plane generally parallel to, but elevated above the floor, wherein the weight of the bar effects over balancing of the game apparatus in a first direction to effect positive drive thereof.

Other objects of this invention will become apparent to those versed in the art upon an understanding of the following detailed description of the jumping-game apparatus, and the rules of play when used as a game of elimination, taken in conjunction with the accompanying drawings, wherein a preferred embodiment of the apparatus is shown, and wherein:

FIG. 1 is a perspective view of the game apparatus of the invention including a base **10**, a rotatable top member **12** and an outwardly extending horizontal bar **14**;

FIG. 2 is an enlarged, elevational cross-sectional view of the apparatus shown in FIG. 1, with a phantom view of top member **12** shown in a second position;

FIG. 3 is an elevational cross-sectional view of the apparatus taken along the line **3–3** of FIG. 2;

FIG. 4 is a front elevational view taken along line **4–4** of FIG. 2;

FIG. 5 is a top plan view of the apparatus with the cover removed, taken along line **5–5** of FIG. 2;

FIG. 6 is a top, partial cross-sectional view of a speed control for the apparatus taken along line **6–6** of FIG. 2; and

FIG. 7 is a plan view of a chance device for use with the game apparatus of the invention.

Referring now to FIG. 1, the game apparatus of the invention generally comprises a base **10** which is normally placed on a floor, patio or other similar playing surface **11**. The base supports a motor driven, rotatable top member **12** having a generally horizontal arm or bar **14** radially extending therefrom in a manner so as to be normally parallel to the floor. During play of the game, the game players are stationed about the apparatus in the path of the bar and are expected to jump over the bar responsive to each rotation thereof so as not to interfere with its sweeping movement. Interference with the sweeping movement of the bar is indicated by interruption of the top member drive mechanism and termination of the bar movement.

Referring now to FIGS. 2, 3 and 4, in addition to FIG. 1, base **10** of the apparatus comprises a circular, horizontal platform **16** having a number of depending support legs **18** and floor engaging feet **20** for supporting the platform in an elevated position above the floor. The platform includes an upwardly extending, centrally located vertical post **22** having a tapered upper portion **24** terminating with a small diameter nose **26** serving as a bearing surface upon which the rotatable top member **12** is journaled. A circular, vertical wall **28** having gear teeth **30** at the upper edge forming a crown gear is provided at the exterior of platform **16**.

Rotatable top member **12** is generally pie shaped and includes a lower wall **32**, integral sidewalls **34** and **36**, a curved back wall **40** and a narrow front wall **42**. A flat, pie-shaped cover **44** is provided for enclosing the rotatable member. The bottom wall, sidewalls, and the back and front walls may be integrally molded of plastic or other suitable material, or they may be fabricated of metal or wood if so desired.

A conically shaped inner wall **46** forming a convex cavity and including an apex portion **48** is provided generally centrally of the rotatable member. The lower surface of apex **48** cooperates with nose **26** of post **22** for pivotally supporting member **12** for rotation about a vertical axis.

The bearing formed by nose **28** and apex **48** also supports rotatable member **12** for enabling pivotal movement of the member about a lateral or horizontal axis denoted *x–x* (FIGS. 3 and 5) extending perpendicular to the length of bar **14**. Movement of the top member about its other horizontal axis, parallel to the bar, is inhibited by a pair of opposed, depending legs **50—52** carried on lower wall **32**. Legs **50—52** extend from bottom wall **32** to a point slightly above platform **16** and terminate with arcuately shaped lower ends **51** and **53**, respectively. As member **12** is rotated about its vertical axis, legs **50—52** intermittently engage the top surface of platform **16** to prevent the rotating member from dipping from one side to the other about the horizontal axis parallel to bar **14**.

A depending cavity **54** is formed integral with bottom wall **32**, inwardly adjacent crown gear **30**, for housing an electric motor **56** having a horizontal drive shaft **58** carrying a small drive gear **60**. Gear **60** is positioned for engagement with crown gear **30** responsive to proper positioning of the rotatable member about the *x–x* axis. Thus, as the motor is energized, engagement of the drive gear with the stationary crown gear causes rotational movement of top member **12** about a vertical axis coinciding with its support bearing.

As best seen in FIGS. 2 and 5, a battery box **62** is located on the bottom wall, adjacent back wall **40** and aligned with an imaginary rearward extension of bar **14**, for housing a number of dry cell batteries **64** which provide electrical energy for operating motor **56**. The location of the battery box is critical to the intentional imbalance of top member **12** since as noted below, the weight of the batteries serve to generally counterbalance the weight of the motor, bar and the top member structure. A removable cover **66** is secured to wall **36** by means of tabs **67** to afford access to the battery box for replacement of the dry cells as necessary.

It should be noted that the rotatable member is not permanently secured to the base, but is merely freely supported on its center post and crown gear. Thus, the rotatable member may be removed from the base for storage or to facilitate replacement of the dry cells without damaging the apparatus.

A variable resistor **68** is housed in a cylindrical wall **69** interiorly of the rotatable member for varying the speed of motor **56** and thus provide adjustment of the rotational speed of top member **12**. Electrical wires **70**, **72** and **74** serially connect the dry cell batteries to the motor through the resistance coil **71** and wiper **73** of the variable resistor in a manner well known to those skilled in the art.

The variable resistor includes a vertical adjusting shaft **76** having an adjusting knob **78** and a pointer **80** which may be selectively aligned with any one of a number of circumferentially disposed numerical indicia **82** for indicating the relative rotational speed of member **12**. The variable resistor also includes an "off" position **84**, defined by a stud **85**, for disconnecting the batteries from the motor thereby terminating operation of the apparatus.

Arm or bar **14** is normally supported in a horizontal attitude by the rotatable member for rotational sweeping movement in a plane parallel to floor **11**.

More particularly, the bar has a circular cross section and is preferably fabricated of a strong, resilient material. The bar may be fabricated in sections including an inner section **90**, an outer section **92**, and a coupling member **94** for coupling the bar sections together to effect an elongated bar which may be selectively disassembled for convenient packaging and storage. A spherically shaped weight **96** is provided at the distal end **97** of the bar for overbalancing the rotatable member about its *x–x* axis, in a manner to be described below. The shape of the weight reduces the possibility of injuring a player who may be struck by the end of the bar.

An opening **98** is provided through interior wall **69** of the rotatable member for loosely receiving an end **100** of inner bar section **90**. An irregularly shaped opening **102** is also provided through front wall **42** of the rotatable member which cooperates with a shoulder **104** formed on bar **90** interiorly adjacent the inner surface of wall **42** to prevent inadvertent removal of the bar **14** from the rotatable member.

As best seen in FIG. **4**, opening **102** includes spaced apart slots **110** and **112** and the wall forms a vertical center finger **106** having a horizontal ledge **108** which may include an arcuate depression **108** in which the bar is seated and partially supported. Each of slots **110** and **112** have a sufficient width to receive bar **14** if it is horizontally displaced from its support on ledge **108**. When the bar is supported on ledge **108**, it is oriented in a generally horizontal attitude and thus is substantially parallel to the floor. Upon being horizontally displaced to either side, the bar enters one of the slots **110** or **112** and the bar assumes an angular position with weight **96** engaging and supported by the floor.

In the construction and operation of the apparatus of the invention, the mass of the structure and its components are approximately distributed about each side of the *x–x* axis, so that top member **12** is almost in a state of balance or equilibrium. The most important component masses are dry cell batteries **64** on one side of the *x–x* axis which counterbalance the mass of motor **56** and the mass of weight **96**. Weight **96** is particularly influential due to the extreme length of its lever arm.

It should be noted that the top member is not perfectly balanced about its *x–x* axis, but it acts more like a teeterboard or seesaw shifting, as seen in FIG. **3**, between a level position shown in solid lines and a skew position shown in phantom lines, with the member pivoted about 5° counterclockwise in its latter position.

Rotatable member **12** assumes its level position when it is over balanced to the right, as viewed in FIG. **2**, responsive to horizontal maintenance of rod **14** so that the weight **96** is fully effective in counteracting the large mass of the batteries. As explained above, the rod is supported in its horizontally extending position when it cooperates with ledge **108** of finger **106**. With the rotatable member in its level position, a drive gear **60** of motor **52**, engages crown gear **30** to effect driving thereof.

On the other hand, upon slight displacement of rod **14** in the horizontal direction such as may be caused by the rod inadvertently striking the leg of a game player, the rod is removed from its support on ledge **108** and falls to the bottom of one of slots **110—112**, depending upon the rotational direction of member **12**. This causes the distal end of the rod to fall toward the floor and weight **96** is partially supported thereon. The removal of the mass of weight **96** from counteracting the mass of batteries **64** upsets the equilibrium of the rotatable member and tilts it to its skewed position about axis *x–x* whereat the back end of member **12** is supported on crown gear **30** and the front end is shifted upwardly as shown in phantom in FIG. **2**. In this skewed position, drive gear **60** is located above and disengaged from crown gear **30**, thereby terminating the driving connection and interrupting rotational movement of top member **12**. Thus an effective indication is provided, namely stoppage of the bar movement, for signalling that the bar has struck a game player.

As best seen in FIG. **7** the game apparatus finally includes a chance device in the form of a spinner **120** having a freely rotatable pointer **122** cooperable with a pair of concentric indicia bearing circular areas **124** and **126**. Circular area **124** comprises a number of indicia bearing stations **125** having numerical indicia for regulating the game play. Circular area **126** comprises stations **128** bearing instructional legends for instructing the game players to assume particular positions during play of the game. Each of the the stations **128** bearing instructional legend cooperate with two of the stations **125** bearing numerical indicia, so that upon operating spinner **122**, a number and a related instruction is indicated.

The game is generally a game of elimination wherein the players are eliminated, one at a time, by allowing bar **14** to strike them so as to cause its horizontal displacement which terminates the bar driving mechanism. Initially, knob **78** is turned to its "off" position, wherein contact **73** is moved off the windings of the coil onto a nonconductive part **75** (FIG. **3**), and each of the players are positioned in a circle adjacent the apparatus and in the path of the sweeping bar. Spinner **120** is operated which gives a direction according to the indicia and legends of stations **125** and **128**, respectively. The spinner may provide that the players must stand on one foot, hold hands, or link their arms around each others shoulders. The indicia of the spinner denotes how many jumps each player must make in the physical position indicated, to successfully complete a game round. The jumps must be made without allowing the bar to contact the player's body members.

The first round of the game is played with the speed indicator knot **78** set on the lowest indicia. Each player must jump the bar the number of times as indicated by the spinner indicia. As a game round is completed without any player interfering with the bar movement, the rotational speed of the bar is increased one level and the spinner is operated for new position and jumping instructions. Should the player allow the bar to strike him, that player is eliminated from the play although the remaining players continue by resetting the bar on ledge **108**.

If more than one player strikes the bar during a game round, only the first player is eliminated. The speed of the apparatus is not advanced, but the spinner is operated to obtain new instructions. When the speed of the bar has been advanced to its top level, it remains at that level until all but one player is eliminated. The one remaining player is deemed the winner.

For additional amusement, the apparatus may be operated in the opposite direction by simply reversing the polarity of the batteries or by providing a suitable electrical switch.

What has been described is an apparatus for use in an elimination-type jumping game having a rotatable horizontal bar and means for indicating slight contact with the bar by a game player, comprising termination of the bar driving mechanism. Means are provided for selectively varying the rotational speed of the bar.

It is obvious that upon study by those skilled in the art, the disclosed invention may be altered or modified without departing from its inventive concept.

What we claim is:

1. Game apparatus comprising a stationary base rotatably supporting an outwardly extending arm for movement about a generally vertical axis; a drive motor including means operatively connecting said motor to said arm for driving the arm through a circular path, and means cooperating with said arm for terminating the operative driving relation of said motor responsive to momentary interference with said arm movement, said arm-cooperating means comprise a top member rotatably supported on said base and supporting said arm in a manner affording movement of said arm in a vertical direction; said top member also being supported for additional movement relative to said base between a first position whereat said arm assumes a given vertical attitude, and a second position whereat said arm is displaced from said given attitude responsive to interference with said arm movement; and wherein said operative connection of said motor is terminated upon said top member assuming its second position.

2. The game apparatus as set forth in claim 1, wherein said motor is carried by said top member and positioned for driving engagement with said stationary base only responsive to support of the arm in its given attitude.

3. The game apparatus as set forth in claim 2, wherein said rotatable top overlies said base and is journaled thereon for pivotal movement about a horizontal axis between said first position whereat said member is overbalanced in one direction, and a second position whereat said member is overbalanced in the opposite direction, and wherein said drive means comprise a drive gear engageable with a gear on said base responsive to overbalancing of said member in said one direction.

4. The game apparatus as set forth in claim 3 wherein said given arm position is horizontal, and including additionally: a weight disposed at the distal end of said arm for overbalancing said member in said one direction; and wherein said member is overbalanced in the opposite direction responsive to downward vertical displacement of said bar and consequent

engagement of said weight on a support surface.

5. The game apparatus as set forth in claim 4 including additionally: means for varying the speed at which said member is driven.

6. Game apparatus comprising: a stationary base suitable for positioning on a floor and having an overlying member mounted for rotation about a generally vertical axis; a displaceable arm extending laterally from said member and movable through a circular path with said member; a motor operatively coupled between said base and said member to drive the latter; said member is journaled on said base for pivotal movement about a horizontal axis between a first position whereat said arm is generally horizontal, and a second position whereat said arm is supported by the floor, and wherein said motor is coupled between said base and said member only when the member is in its first position.

7. The game apparatus as set forth in claim 6 including additionally: a stationary gear on said base; and wherein said motor is carried by said rotatable member and includes a drive gear disposed for vertical movement relative to said base; said gear being located for engagement with said stationary gear responsive to pivotal movement of the member of its first position, and for nonengagement therewith responsive to movement to its second position.

8. The game apparatus as set forth in claim 7, wherein said rotatable member includes a generally horizontal ledge for supporting said arm in its horizontal attitudes and wherein said arm is displaced from support on said ledge upon momentary, light interference with said arm movement.

9. The game apparatus as set forth in claim 8, wherein said rotatable member carries dry cell batteries for energizing said motor; said batteries being positioned on one side of said horizontal axis to counterbalance the weight of the motor and arm, and including additionally: a variable resistor for controlling the rotational speed of said member.