United States Patent [19]

Goldfarb et al.

[11] **3,756,603**

[45] **Sept. 4, 1973**

[54] **COMPETITIVE BOWLING GAME**

[75] Inventors: **Adolph E. Goldfard,** Tarzana; **Rene Soriano,** Los Angeles, both of Calif.

[73] Assignee: **said Goldfarb, by said Soriano**

[22] Filed: **Jan. 18, 1971**

[21] Appl. No.: **107,128**

[52] **U.S. Cl.** **273/108,** 273/129

[51] **Int. Cl.** **A63b 67/14**

[58] **Field of Search** ..... 273/108, 119 A, 119 B, 273/127, 85 A, 85 B, 129, 123 A, 126 A, 122 A; 46/65, 69

[56] **References Cited**

UNITED STATES PATENTS

1,606,826	11/1926	Burger	273/119 R
1,317,640	9/1919	Nussbeck	273/108

FOREIGN PATENTS OR APPLICATIONS

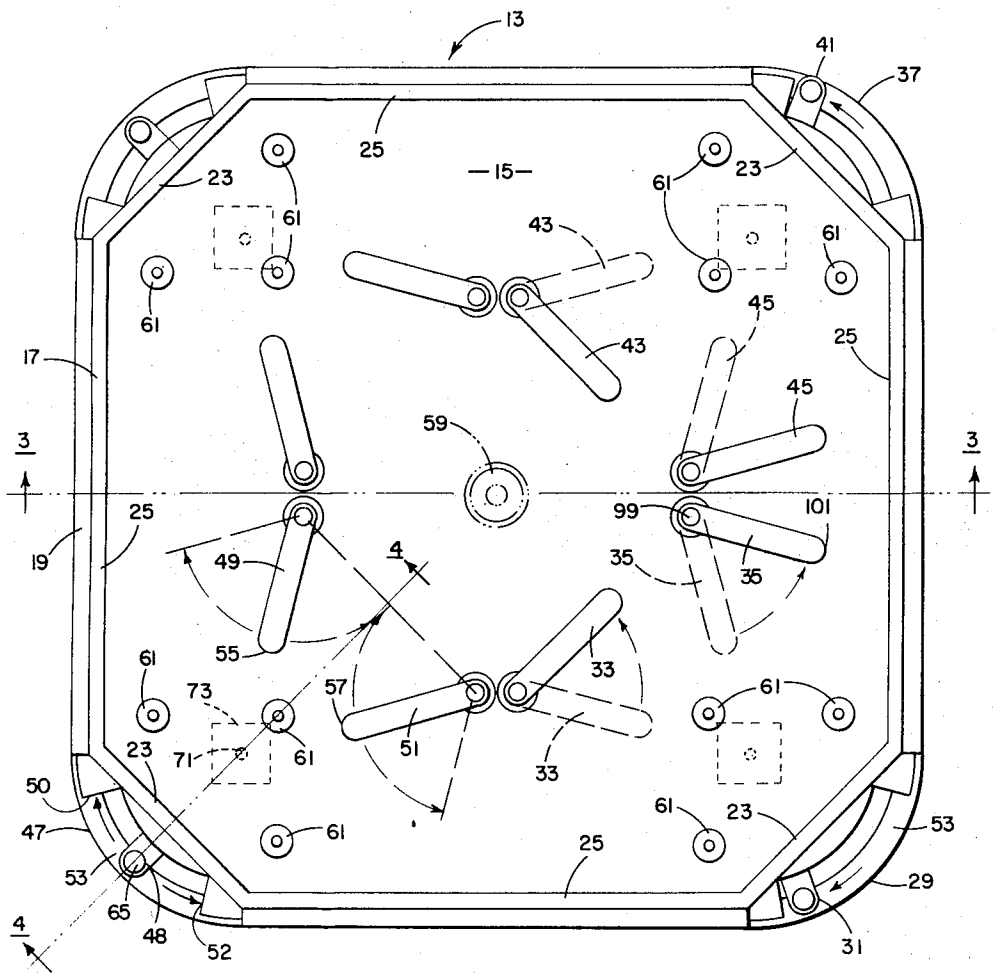
1,219,798	12/1959	France	273/122 A
768,135	2/1957	Great Britain	273/85 A

Primary Examiner—Richard C. Pinkham
Assistant Examiner—Theatrice Brown
Attorney—Sokolski & Wohlgemuth and Robert M. Ashen

[57] **ABSTRACT**

A game comprising a playing board and pairs of arms rotatably mounted on the playing board disposed around a center or inner area of the board. Pins of each player are disposed in an outer or peripheral area of the board outwardly of a pair of the arms. Control means are provided for each player to rotate his pair of actuator arms to direct a spinning top in the center area away from the outer periphery area where his pins are placed and toward the areas where the opponents pins are placed.

7 Claims, 5 Drawing Figures



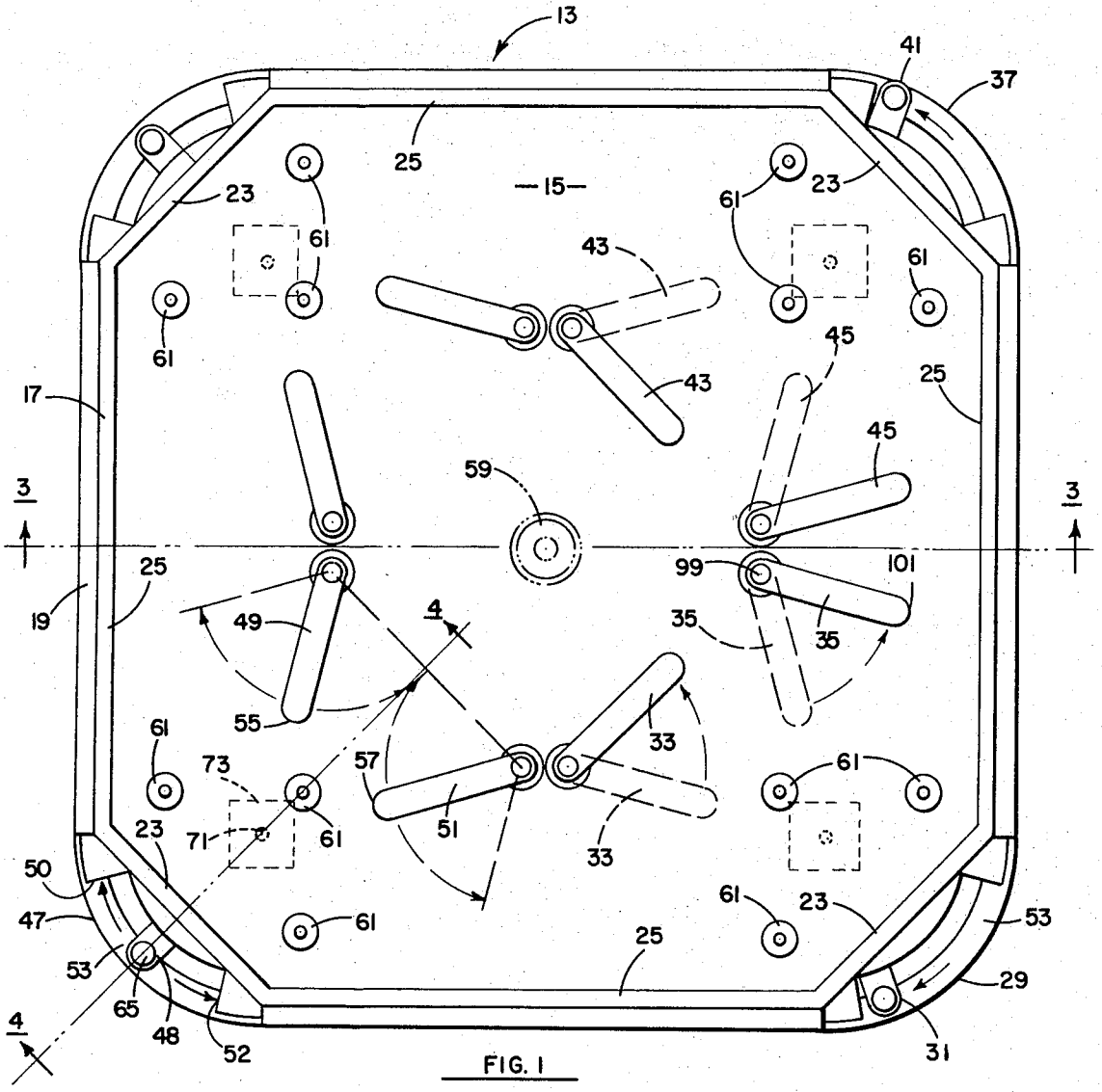


FIG. 1

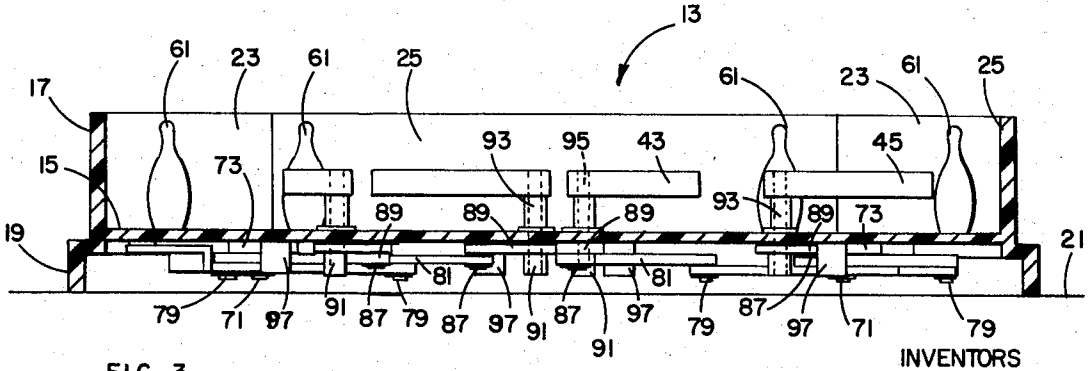


FIG. 3

INVENTORS
ADOLPH E. GOLDFARB
RENE SORIANO

BY
ROBERT M. ASHEN

ATTORNEY

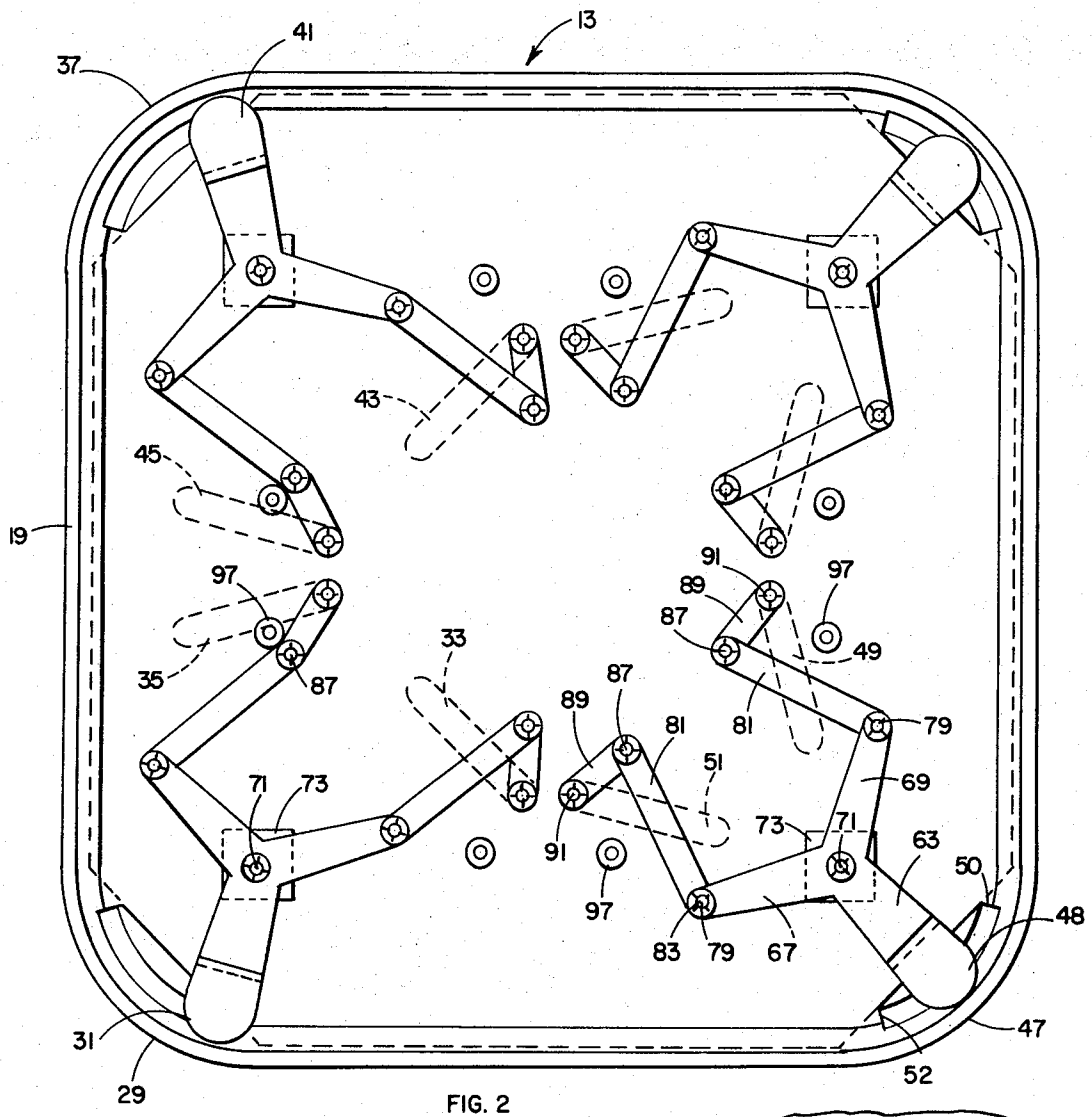


FIG. 2

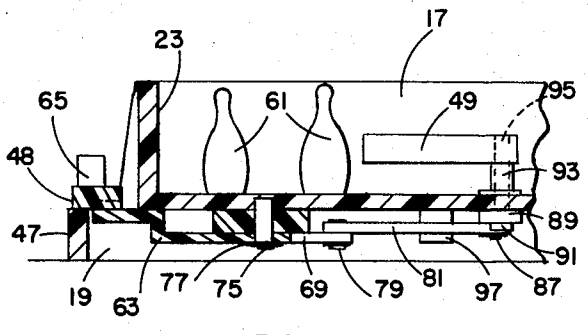


FIG. 4

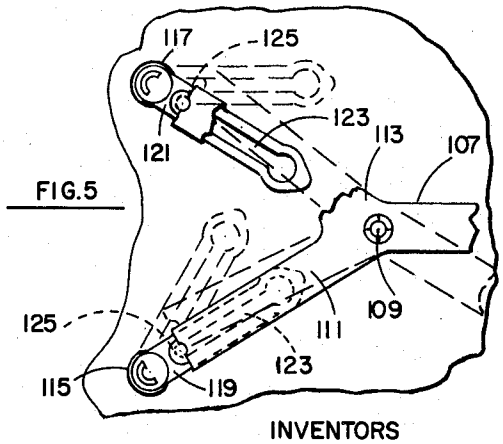


FIG. 5

INVENTORS
ADOLPH E. GOLDFARB
RENE SORIANO
BY
ROBERT M. ASHEN
ATTORNEY

COMPETITIVE BOWLING GAME

Games involving the movement of arms to strike balls or other objects on a playing surface have been well known. The games are particularly good from developing coordination between the motor reflexes and the eye since one has been required to react rapidly to the movement of the object on the board. Typical examples of such a game are the well known pin ball machines. The object in pin ball machines is generally to attempt to prevent a ball from going into an exit hole in the surface by striking it with movable elements on the playing surface. Pin ball machines are extremely complicated mechanisms involving both complex electronics and mechanical linkages, thus, they are costly and not readily available for individual use by a child in his home. Another type of game involving the principle of striking a moving object with actuated members on a playing surface is a hockey game where players have hockey sticks and attempt to strike a puck directing it toward one goal or the other on the board. Individuals playing the game have actuators to cause rotation of the players having the hockey sticks on the board in an attempt to strike or prevent it from reaching the goal. In order to play this game successfully a player of the game must be extremely well coordinated since it usually requires him to manipulate several individual hockey men on the playing surface. Once again, this game is often relatively complex involving several mechanical linkages. Most of the typical prior art games involve preventing the movable object on the playing surface from going into a hole or receptacle as in the pin ball machine or going into a goal or passing a certain line on a board as in a hockey game. Further, the object being struck was normally predictable in its behavior once an arm or actuator would strike against the object such as a ball or a puck-like element. By being so predictable the players in the game could determine the angle at which the object would then approach another actuator and be readily prepared to strike the object with the actuator.

Briefly, the herein game utilizes the concept of a plurality of arms operable by the players to strike a moving object and attempt to prevent that object from striking pins assigned to each player, but instead cause the object to strike the pins of an opposing player. Of particular interest is the fact that the moving object is a spinning top and thus its movements are particularly erratic or unusual when struck by one of the arms.

The illustrated game is comprised of a board, preferably a rectangular shape, with a control means disposed at each corner of the board. Each control means is connected by a linkage to a pair of actuator arms which are disposed on the surface of the board at a location generally medially between the corner of a board where the control means is located and the center thereof. The arms in effect surround or ring the center area of the board. Movement of the control means causes the two associated actuator arms to move in unison in opposed rotational directions. Thus, for example, with a rectangular shaped board there are four control means, one at each corner, and a total of eight actuator arms on the surface of the board. Objects or targets in the shape of bowling pins, figures, or the like are placed on the board between the corner where the control means is located and the associated actuator arms. A spinning top is utilized and placed down on the center area of the board from where it will tend to move outwardly. Each player attempts to prevent the top from moving toward the corner where his pins are standing by moving the control means to cause the actuator arms to contact and strike the top as it approaches that player's corner. The game may be played until only one player has remaining pin or pins standing, with each player dropping out of the game after all the pins assigned to him are knocked down by the top.

It is believed that the game will be further understood from the following detailed description and drawings in which:

FIG. 1 is a top plan view of the game board of the invention.

FIG. 2 is a bottom plan view of the game board of the invention.

FIG. 3 is a cross sectional view taken along line 3—3 of FIG. 1.

FIG. 4 is a partial sectional view taken along line 4—4 of FIG. 1.

FIG. 5 is a schematic plan view of an embodiment for actuation of the playing arms.

Turning now to FIG. 1, there is seen a game board 13 of the invention in the shape of a square. The board has a flat plane upper surface 15 with an outer peripheral wall 17 normal to the plane surface and extending upwardly therefrom. The game board 15 is additionally provided with an outer downwardly extending peripheral portion 19 which serves as a base of the board. The portion 19 also elevates the surface 15 above a table or like resting surface 21 to provide room for the mechanical linkages involved beneath the surface 15. The peripheral wall 17 is actually octangular in shape in that a small flat side 23 intersects adjacent elongated sides 25 of the wall 17. One of the main reasons for providing the small side walls 23 is to allow a control lever to be conveniently exposed at each corner of the playing board without necessitating it extending beyond the periphery of the base portion 19.

The control means at each corner of the board includes a control lever which acts in cooperation with actuator arms on the surface of the playing board. Thus, at corner 29 there is located a control lever 31 which cooperates with a pair of actuator arms 33 and 35. Likewise, at corner 37 of the board there is a control lever 41 which cooperates with actuator arms 43 and 45. At corner 47 there is located a control lever 48 which cooperates with actuator arms 49 and 51. Looking at corner 47, the control lever 48 is shown medially disposed between the extremes of its possible movement to either side. The control lever 48 can move in a small arc at the corner of the board between the stop points 50 and 52. The lever 48 slides on a surface 53 which is slightly recessed below the level of the remainder of the upper surface of base portion 19 to define the stop points 50 and 52. When a control lever such as 48 is medially positioned, the associated actuator arms 49 and 51 are preferably in positions seen in FIGS. 1 and 2 wherein they are both rearward directed in the same angular disposition. Since the arms of the illustrated device rotate in opposite directions, FIG. 1 shows the outer ends 55 and 57 of the arms 49 and 51 at their closest position to one another, defining the smallest gap or opening which can be achieved between a pair of actuator arms. This minimum distance between the ends 55 and 57, however, is sufficient for a moving object such as a top 59 to move there-

between toward the corner **47.** In other words, it is preferred that the relationship of the size of the top **59** to the minimum opening between a pair of actuator arms is such that the top can pass through such opening.

Behind or outwardly of each pair of actuator arms there are preferably disposed a plurality of target elements such as pins **61** on the board surface. The pins **61** may be in the shape of bowling pins as seen in FIGS. **3** and **4.** If, for example, three pins are used, as shown, one pin may be located adjacent the gap opening between the actuator arms to be struck first by the top that would pass therethrough, while the remaining two pins may be disposed back and to either side of the first pin such that they would be struck usually by the top in its further travel or when it proceeds from behind the actuator arms.

The actuator arms are caused to move through a simple mechanical linkage such that they rotate in opposite directions to one another. They also may be rotated in either direction by operation of the associated control means. Looking particularly at FIG. **2,** it is seen that the control lever **48** is pivotally mounted to the underside of the board. The control lever **48** is generally Y-shaped, having a stem portion **63** extending to the corner of the board and having affixed thereto an upwardly extending control knob **65** utilized by the player. Integrally formed with the stem portion **63** are two arm portions **67** and **69** which emanate from a center pivot point **71.** The lever **48** is rotationally mounted to the underside of the board at the pivot point **71** by means of a pin **75** extending through the lever and into the board. A metal clip **77** or the like can be used to secure the lever **48** on the pin **75.** At the pivot point **71** there is provided between the lever **48** and the board a plate **73** of preferably plastic material which serves as a bearing surface against which the lever can rotate. The plate **73** further maintains the lever **48** at a proper parallel distance from the bottom surface of the board. At the end of each of the arm portions **67** and **69** there is provided a movable pivot point **79.** An elongated link **81** is connected to each pivot point **79.** The links **81** each have a pin **83** integrally formed therewith which passes through one of the arm portions **67** and **69** with metal clips **85** securing the parts together.

When the control lever **48** is in the center or median position as seen in FIGS. **1** and **2,** the elongated links **81** extend from pivot point **79** generally parallel to stem portion **63** but are directed slightly inwardly toward one another. The elongated links **81** each terminates in a pivot point **87** which is of the same construction as pivot point **79.** A short link **89** is connected to each pivot point **87** and extends from point **87** to a fixed pivot point **91.** At each fixed pivot point **91** there is mounted one of the actuator arms. A cylindrical hollow housing **93** may be provided on the upper surface of the board above each pivot point **91.** At each pivot point **91,** an elongated pin **95** is affixed at its upper end to an actuator arm and at its lower end to one of the short links **89.** Thus, movement of a link **89** rotates the pin **95** about pivot point **91** to rotate the associated actuator arm **49** or **51** due to the fixed angular relationship between link **89** and arm **49.** To limit the movement of the pivot point **87** and thus the swing of the short links **89** inwardly toward their associated corner. Bumpers **97** are provided on the under surface of the board. The bumpers **97** are positioned outwardly from the elongated links **81** such that as a control lever is moved toward an extreme position, a bumper **97** will limit the outward movement of one of the pivot points **87.** For example, when control lever **31** is pivoted all the way to the left (as viewed in FIG. **2**), the pivot point **87** on the right has engaged and been stopped by the adjacent bumper **97.**

The mechanical linkage previously described is constructed such that the arms as seen in FIG. **1** have an initial median position as shown at corner **47** and will describe an arc as shown by arrows such that the arms will rotate in opposite directions upon movement of the controls. As seen in FIG. **1,** when control lever **31** at corner **29** is moved to the furthest position to the player's left, one actuator arm **33** is pointed toward a pivot point **99** for the opposite arm **35.** The arm **35** alternatively is directed backwardly toward the circumferential wall **17** of the device, allowing, however, a space between the end of the arm **101** and the wall **17** for the top **59** to pass therebetween. At corner **37** of FIG. **1** there is seen the position where the control arm **41** is pushed to the player's right. Arm **43** is directed inwardly while the arm **45** is directed toward the side wall **17,** just opposite the relative positions of the arms **33** and **35** at corner **29.**

In playing the game, a top **59** may be utilized which can be started with an automatic spinner or the like, which is conventional in the art. The spinning top is preferably set down in the center area of the board as seen in FIG. **1** between all of the actuator arms. The top will then tend to spin and move outwardly toward one of the sides of the board. A player may be situated at each corner attempting both to protect the pins at his corner and to direct the top toward an opponent's corner to knobk over the pins thereat. One of the unusual aspects of the invention is the combination of the actuator arms with a spinning top. When striking the spinning top with an actuator arm, the movement of the top thereafter is relatively unpredictable and it will tend knock careen off of the actuator arm to an unsuspecting player in a relatively uncontrolled fashion. In this manner the present game differs from previous types of games utilizing actuated arms and a round ball or a slidable piece. When such a ball or slidable piece is struck with an arm, the piece will roll or slide in a generally predictable fashion along a line depending upon the angle at which it is struck by the arm.

The entire illustrated game can possibly be formed out of molded plastic parts which are both lightweight and inexpensive. It can be appreciated that different mechanical linkages can be utilized or the relative lengths of arms on the linkages can be changed as long as one accomplishes the desired end results of this game, namely providing actuable arms that are capable of striking a moving object while being readily controlled by means on the playing board. A particular advantage of the configuration shown is the ability to move two arms simultaneously in opposite directions through the simple movement of one control lever. This allows for a substantial amount of coverage on the board with small movement of a control lever and also permits one player to readily operate two pairs of arms.

Turning to FIG. **5** there is seen a further embodiment of a means for achieving actuation of the rotatable arms used in playing the game. There is seen playing control lever **107** which is generally Y-shaped similar to the control lever **48** shown in the figures of the previous embodiment. The control arm **107** is rotatably se-

cured at a pivot point **109** to the bottom surface of the playing board. Extending from the pivot point **109** are two legs, **111** and **113** respectively, of the Y-shaped element, the leg **113** being fragmented in the view shown. Adjacent the outer ends of the arms there are fixed pivot points **115** and **117** respectively, to which the rotatable arms on the top playin surface are affixedly connected.

Link members **119** and **121** respectively, are connected to and extend from the pivot points **115** and **117**, being coaligned with the legs **111** and **113** of the control element in the starting position. The link members **119** and **121** have center slots **123** formed therein, in which lie pins **125** fixedly secured to the end of the legs **111** and **113** of the control element. Thus, when the control element moves from the starting position to the dotted position shown in FIG. **5** the pins **125** slide within the slots **123** of the link elements **119** and **121**, causing the links to rotate about the respective pivot points **115** and **117** to the dotted position shown. This in turn causes a corresponding rotation of the playing arms on the upper surface of the playing board since they are, as described, affixedly secured to the pivot elements **115** and **117**. The arrangement shown in FIG. **5** is particularly desirable in that it provides minimal linkages and reduces the number of components involved in controlling the playing arms.

We claim:

1. A game comprising:

a playing board,

a plurality of separate pairs of arms rotatably affixed to one upper side of said board,

separate control means being connected to each pair of said arms for causing them to move together cooperatively,

top means capable of spinning movement on the upper side of said board, and

a set of target elements placed on said board between each pair of said arms and the periphery of the board,

whereby each pair of said arms can be separately controlled by an operator to deflect the top means, said control means causing the associated pair of arms to cooperatively counter-rotate relative to each other.

2. The game of claim **1** wherein:

there are four pairs of arms affixed on said board, and four associated control means.

3. The game of claim **2** wherein:

said board is square and a control means is disposed at each corner thereof.

4. The game of claim **1** wherein:

said control means cause said arms to counter-rotate in unison.

5. The game of claim **1** wherein:

the length of the arms is such that when a pair counter-rotate, the smallest gap obtained between the closest point to the other arm will allow said top means to pass therethrough.

6. The game of claim **1** further comprising:

means on said board for limiting the degree of rotation of said arms.

7. The game of claim **1** wherein:

said arms are equidistantly disposed from the center of said board.

* * * * *