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Glass et al.

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[54] **GAME APPARATUS**

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[52] **U.S. Cl.** ..... **273/125 A**

[51] **Int. Cl.** **A63f 7/00**, A63f 7/10

[58] **Field of Search** 273/119–125, 273/179, 182

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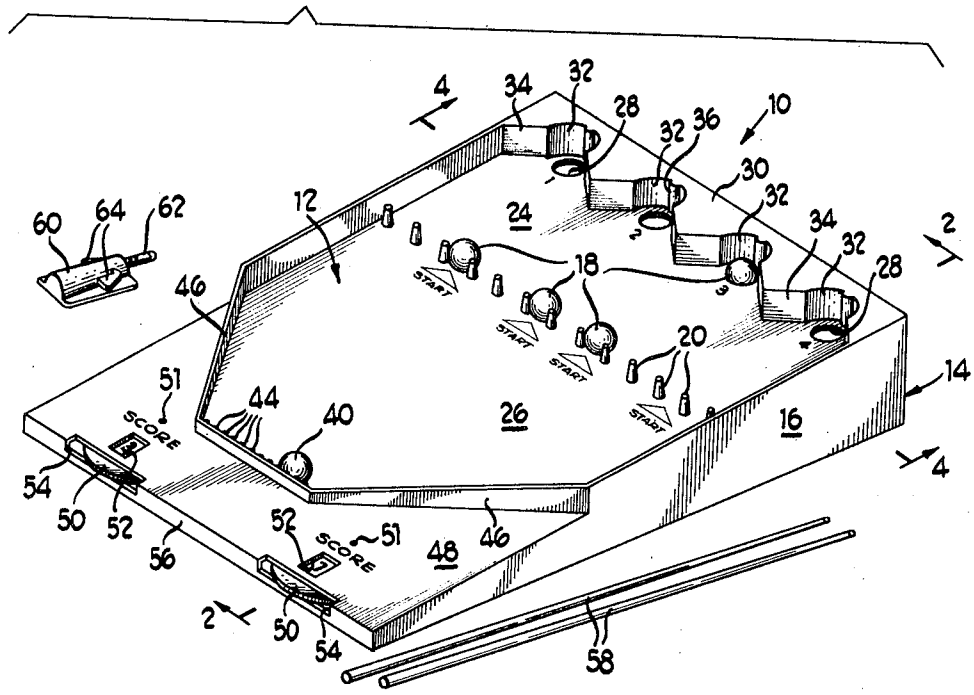
Primary Examiner—Paul E. Shapiro

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[57] **ABSTRACT**

A game apparatus including a game board which is divided into two playing areas by a series or wall of spaced pegs. The game includes a plurality of reboundable balls in one area on one side of the pegs which can be propelled from positions between the pegs toward pockets or holes at an end of the game board when struck by a cue ball which is located in a second playing area on the opposite side of the pegs. A cue stick or other hand manipulated instrument is used to propel the cue ball into contact with the reboundable balls. An automatic return mechanism is provided to eject the reboundable balls from the pockets or holes at the end of play to prepare the game apparatus for the next play. Confining walls are provided about the periphery of the board and the board is inclined so that the reboundable balls tend to come to rest at positions between the pegs.

11 Claims, 7 Drawing Figures



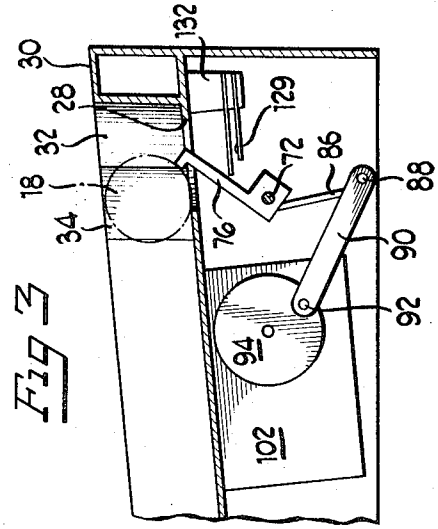


Fig 3

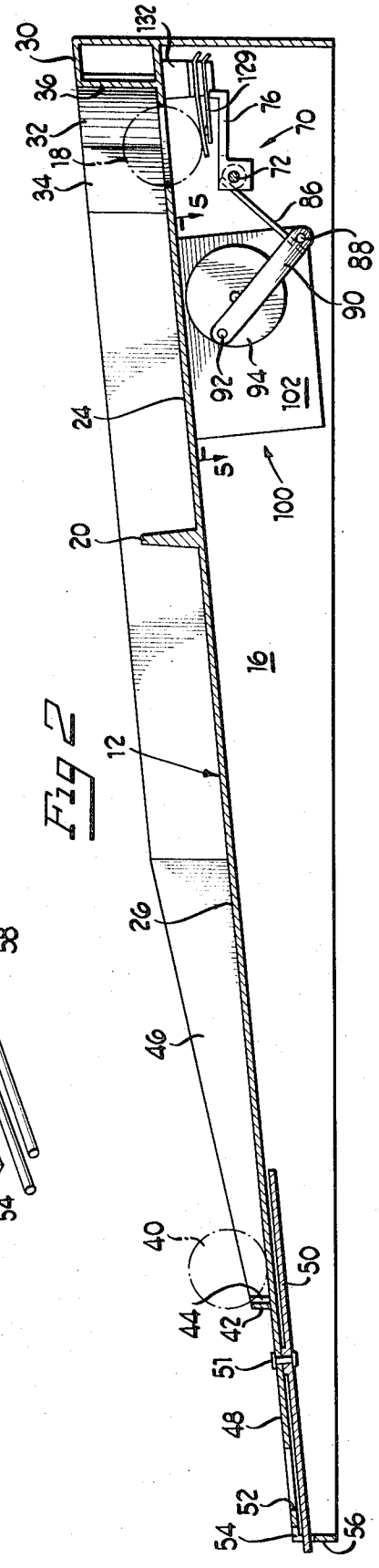


Fig 2

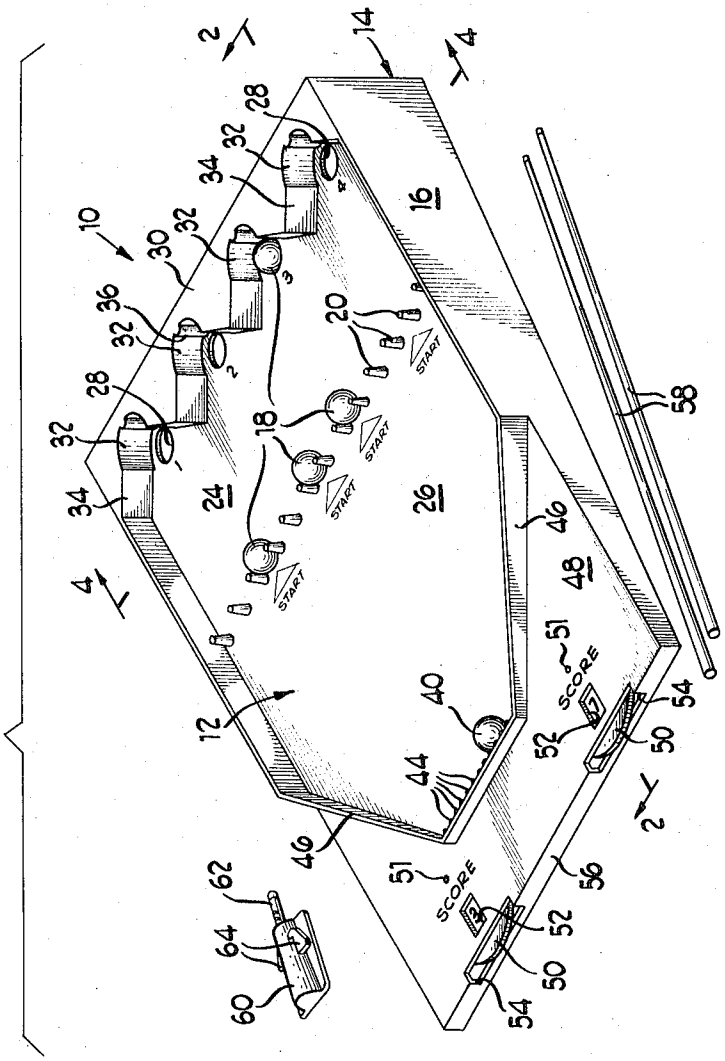


Fig 1

Fig 4

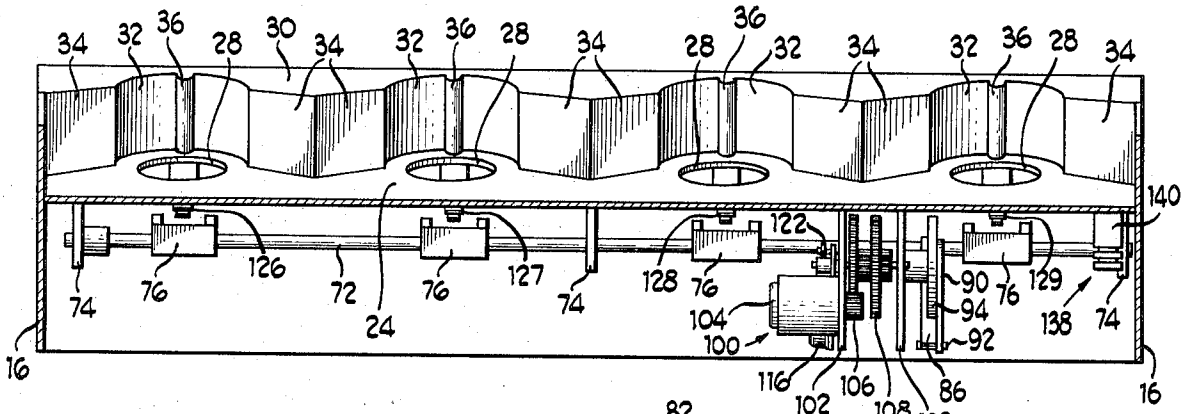


Fig 5

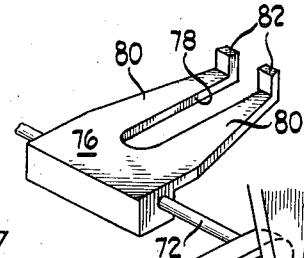


Fig 6

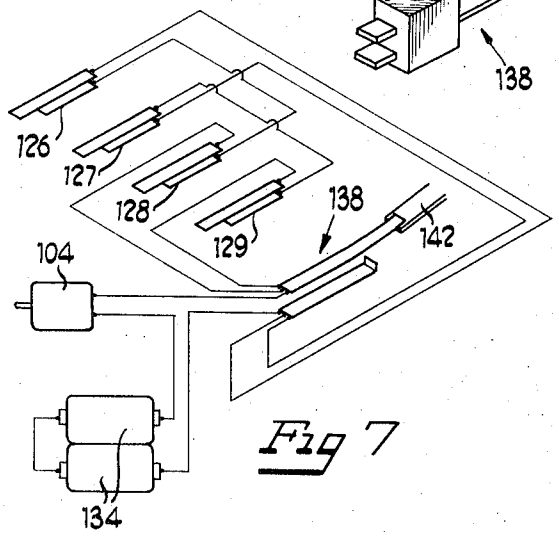
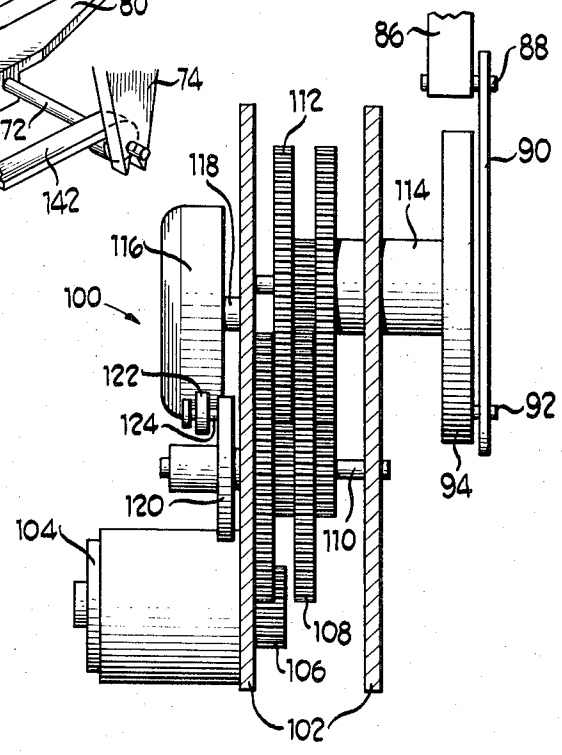


Fig 7



GAME APPARATUS

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to games, and in particular to games wherein reboundable balls are propelled across a playing surface into a cup-like receptacle.

2. Brief Description of the Prior Art

Games of the type wherein a playing piece travels along a playing surface in an intended path of travel toward cup-like receptacles responsive to the launching or shooting action of some element are well known in the art. Examples of such are the well known pool-type table games and miniature pool table games wherein players use elongated cue sticks to propel the pool balls, pinball games wherein players use a spring biased plunger to launch a ball onto an inclined playing surface where it randomly strikes posts and accumulates points as it rolls down the playing surface, and those types of games wherein players directly strike the playing piece with a cocked thumb or forefinger.

SUMMARY OF THE INVENTION

The best mode currently contemplated for carrying out the invention includes an inclined game board which is divided into two playing areas by a series or wall of spaced pegs across the playing surface. A plurality of resilient reboundable balls are rollingly supported in an upper playing area on one side of the pegs and are caused to travel toward pockets or holes at the uppermost end of the playing surface when struck by a cue ball. The cue ball is rollingly supported in a lower playing area on the opposite side of the pegs and impelled by a hand held instrument. The spacing between the pegs is less than the diameter of the balls so that the balls tend to come to rest at positions between the pegs. An automatic return mechanism is provided to eject the balls from the pockets or holes at the end of play to prepare the game apparatus for another play. Walls are provided around the periphery of the inclined playing surface to provide confining means therefor. The object of the game is to impel a given number of the reboundable balls located in the upper playing area into particular holes or pockets at the uppermost end of the playing surface by causing the cue ball in the lower area to strike the reboundable balls when the cue ball is impelled by a hand held instrument.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of the game apparatus embodying the concepts of the present invention;

FIG. 2 is a vertical section, on an enlarged scale, taken generally along line 2—2 of FIG. 1 showing the ball ejectment mechanism in a retracted position;

FIG. 3 is a fragmentary vertical section, on an enlarged scale, taken generally along line 2—2 of FIG. 1 showing the ball ejectment mechanism in an extended position;

FIG. 4 is a vertical section, on an enlarged scale, taken generally along line 4—4 of FIG. 1;

FIG. 5 is a broken-away section taken generally along line 5—5 of FIG. 2;

FIG. 6 is a broken-away enlarged perspective view of a portion of the ejectment mechanism showing the operation of the electrical contacts; and

FIG. 7 is a somewhat schematic illustration of the electrical system and wiring.

BRIEF DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now to the drawings, the game apparatus, generally designated **10** (FIG. 1), includes a playing surface, generally designated **12**, preferably molded integrally with a frame, generally designated **14**, of plastic or other suitable material.

For convenience, the game apparatus will be described as though supported on a horizontal surface such as a table top, in the position generally seen in FIGS. **1** and **2**. Side-walls **16** of the frame **14** extend upwardly past the playing surface **12** to provide confining means for retaining a plurality of rollingly supported reboundable balls **18**. A series of pegs **20**, which may be molded integrally with the playing surface **12**, are provided to form a wall which divides the playing surface **12** into two distinct playing areas, an upper playing area **24** and a lower playing area **26**. The pegs **20** are spaced less than the diameter of the balls **18** such that the reboundable balls located in the upper playing area **24** cannot roll between adjacent pegs **18** into the lower playing area **26**. The pegs **20** are spaced apart enough such that the reboundable balls **18** will rest between two adjacent pegs **20** and protrude slightly into the lower playing area **26**.

A series of holes **28**, slightly smaller in diameter than balls **18**, are provided at the uppermost end of the playing surface **12**, in playing area **24** as shown on the right in FIGS. **1** and **2**. A back wall **30** is provided with semicircular or cup-like portions **32** which are connected together and with sidewalls **16** by a plurality of upright wall portions **34** to provide guide means to direct the reboundable balls **18** into the holes **28**. Each cup-like wall portion **32** is also provided with a vertical ridge **36** to guide the balls **18** into the holes **28**.

A cue ball **40** is rollingly supported in the lower playing area **26**. A narrow end wall **42** is provided at the lowermost portion of the lower playing area **26**, as shown on the left in FIGS. **1** and **2**, to provide launching positions for the cue ball **40**. The height of the end wall **42** is approximately one fourth of the diameter of the cue ball and also is provided with a plurality of vertical ribs **44** on the side thereof facing the lower playing area **26** to prevent the cue ball **40** from rolling from side to side. Two tapered walls **46** connect the end wall **42** with the sidewalls **16** thereby forming a complete peripheral enclosure of the inclined playing surface **12**. The end wall **42** and the tapered walls **46** are preferably molded integrally with the frame sidewalls **16** and the playing surface **12**.

A platform **48** is provided, as a continuation of the playing surface **12**, extending from the end wall **42** and tapered walls **46** to the front end of the frame. Two scoring discs **50** are rotatably mounted on the underside of the platform **48**, as by rivets **51** (FIG. 1), such that indicia on the scoring discs **50**, (e.g., representing victories by each player of the game) is visible through square holes **52** near the lower end of the platform **48**. Additional cut-outs **54** are provided at the juncture of the platform **48** and an end frame wall **56** through which the scoring discs **50** protrude such that they may be manually rotated.

Hand held impelling instruments, for striking the cue ball **40**, are provided in the form of either conventional cue sticks **58** or of the spring biased plunger type **60**. In the latter, a notched plunger **62** is depressed against

a biasing spring and held in cocked position by a pawl receivable in one of the notches. The pawl then is moved out of the notches by depressing tabs **64** formed integrally with the pawl whereafter the plunger **62** is spring biased outwardly to strike the cue ball **40**. The cue ball is launched from a selected position between any two ribs **44** on the inner face of wall **42** and propelled toward one of the reboundable balls **18** for impact therewith to impel it towards one of the holes **28** in the uppermost end of the playing surface **12**.

An automatic ball return mechanism, generally designated **70** (FIGS. **2** and **4**), is provided to eject the reboundable balls **18** from the holes **28** at the end of a game. The return mechanism **70** includes a horizontal shaft **72** which is journalled at its ends and its midpoint in ears **74** depending from the underside of the playing surface **12**. A plurality of ejecting arms **76** are secured on the shaft **72** directly under each hole **28** in the playing surface **12**. The ejecting arms **76** are provided with a central slot **78** thus providing two prongs **80** on each arm **76**. A vertical tab **82** is provided on each prong **80** for contact with the balls **18**.

A crank arm **86** is secured to the shaft **72** at its right end as viewed in FIG. **4**, and is pivotally connected by means of a pin **88** to a connecting rod **90** on its lower end (FIG. **2**). The other end of the connecting rod **90** is rotatably secured by means of a pin **92** to a rotatable disc **94** which drives the ball return mechanism **70**.

The drive mechanism, generally designated **100** (FIG. **5**), is mounted on two flanges **102** depending from the underside of the playing surface **12**. A motor **104** drives the mechanism **100** through a pinion gear **106**. A double gear **108** is mounted on a shaft **110** journalled in the flanges **102**. Gear **108** is in mesh with the pinion gear **106** and the main drive disc **94** through a second double gear **112** which is also journalled between the flanges **102**. The gear **112** is formed as a unitary member with a large diameter shaft **114** and the drive disc **94**. A bell **116** is also supported on the left hand flange **102** by a post **118**. A small disc **120** is secured on the left end of shaft **110** as shown in FIG. **5**. A loose fitting washer-type hammer **122** is supported on disc **120** by a post **124** and strikes the bell **116** as gear **108** rotates.

When energized, the motor **104**, through pinion **106**, gear **108** and gear **112** rotate the main drive disc **94**. The drive disc **94**, through the connecting arm **90** and the crank **86** cause the shaft **72** to rotate counterclockwise, as viewed in FIGS. **2** and **3**, during one half of a rotation of the drive disc **94** and clockwise through the remaining half of a rotation. Thus, the ejecting arm tabs **82** contact the balls **18** in the holes **28**, eject the balls, and then the ejecting arms **76** return to their original position during one rotation of the main drive disc **94**.

The electrical system (FIG. **7**) illustrates an embodiment of the invention wherein four holes **28** and four balls **18** are used. Four electrical contacts **126**, **127**, 128 and **129** are mounted on ears **132** which depend from the playing surface, one directly under each hole **28**. These contacts **126**, **127**, **128** and **129** are normally open (FIG. **3**) and are closed by the weight of a ball **18** when it falls into a hole **28** (FIG. **2**).

It can be seen in FIG. **7** that when the combination of contacts **126** and **128** or **127** and **129** are closed by the weight of ball **18** in their respective holes, a circuit is completed between the electric motor **104** and batteries **134**. This causes the shaft **72** to rotate and the ejecting arms **76** to eject all the balls **18** from the holes **28**. This, however, would open the electrical contact combinations **126** and **128** or **127** and **129** and thus open the circuit and stop the motor. To prevent this occurence, an override switch, generally designated **138**, is provided on the right end of the shaft **72** (FIGS. **4** and **6**). The override switch is mounted on a post **140** which depends from the playing surface **12** (FIG. **7**). A switch arm **142** is secured on the shaft **72** such that when the shaft **72** begins to rotate, the override switch **138** is closed before the combination of switches **126** and **128** or **127** and **129** is opened. Thus the circuit is then closed until the drive disc **94** makes one complete revolution whereupon the switch arm **142** opens the override switch **138** and de-energizes the motor. The reboundable balls **18** then are again in their starting position for another game. of course, other combinations of "holes" (or all of the holes) for ejecting the balls are contemplated by the invention. The object is to be the player whose impelled ball is the first to fill a hole which fills the combination which closes the circuit to the motor to eject the balls.

The foregoing detailed description has been given for clearness of understanding only and no unnecessary limitations should be understood therefrom, as some modifications may be obvious to those skilled in the art.

We claim:

1. A game apparatus comprising:

a frame;

means defining a playing surface having peripheral confining means substantially thereabout;

a plurality of upstanding spaced pegs disposed on and extending substantially across said playing surface and dividing the playing surface into separate first and second playing areas;

target means disposed in said first playing area;

at least one reboundable playing piece supported for movement over the playing surface in said first playing area for movement toward said target means, said playing piece being of a size and shape so as to be exposed to striking from said second playing area through the spaces between said pegs but not of sufficiently large size to pass through said spaces; and

a cue piece for movement over the playing surface in said second area toward said pegs to strike a reboundable playing piece when disposed at a space between said pegs to propel the reboundable playing piece toward the target means in said first playing area.

2. The game apparatus of claim **1** wherein the playing surface in said first playing area is inclined downwardly from said target means to said pegs so that said reboundable playing piece tends to return toward said pegs after being struck by said cue piece.

3. The game apparatus of claim **1** wherein the playing surface of said second playing area is inclined downwardly from said pegs to a forward launching area so that said cue piece tends to return to the launching area after being launched toward the reboundable playing piece at the pegs.

4. The game apparatus of claim **3** wherein the playing surface in said first playing area is inclined downwardly from said target means to said pegs so that said reboundable playing piece tends to return toward said pegs after being struck by said cue piece.

5. The game apparatus of claim 1 wherein said target means comprises receptacle means to hold and retain said reboundable playing piece.

6. The game apparatus of claim 5 including means for automatically ejecting a reboundable playing piece from said receptacle means at the end of a game.

7. A game apparatus comprising:

a frame;

means defining a playing surface having peripheral confining means substantially thereabout;

apertured wall means disposed on and extending substantially across said playing surface dividing the playing surface into separate first and second playing areas;

target means disposed in said first playing area and including a plurality of target receptacles for holding and retaining a reboundable playing piece;

a plurality of reboundable playing pieces supported for movement over the playing surface in the first playing area for movement toward said receptacles, said playing pieces being of a size and shape so as to be exposed to striking from said second playing area through the apertures in said wall means but not of sufficiently large size to pass through said apertures;

a cue piece for movement over the playing surface in said second area to strike said reboundable playing pieces when disposed at said apertures in the wall means to propel said reboundable playing pieces toward said receptacles in said first playing area; and

means for automatically ejecting said reboundable playing pieces from said receptacles when a predetermined number of said target receptacles less than the total number thereof are occupied by playing pieces.

8. The game apparatus of claim 7 including means to automatically activate said ejecting means in response to a given combination of said target receptacles being occupied by said playing pieces.

9. The game apparatus of claim 8 wherein the means for activating the ejecting means includes a plurality of normally open switches mounted on the frame, one beneath each target receptacle such that the weight of the playing piece in said receptacle will close the switch causing the ejecting means to be activated when a predetermined series or combination of switches have been closed.

10. A game apparatus comprising:

a frame;

means defining a playing surface on said frame;

means defining a plurality of target receptacles on said playing surface;

a plurality of playing pieces rollingly supported on the playing surface for movement into said receptacles; and

means for automatically ejecting said playing pieces from said receptacles automatically in response to a predetermined number of said receptacles less than the total number thereof being occupied by playing pieces.

11. The game apparatus of claim 10 wherein said ejecting means is responsive to automatically eject the playing pieces from the receptacles in response to a specific given combination of receptacles being occupied by playing pieces.

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