March 16, 1965 J. W. KUNNEKE 3,173,691

BALL GAME WITH GRAVITY PROJECTING MEANS

Filed Feb. 13, 1964 2 Sheets-Sheet 1

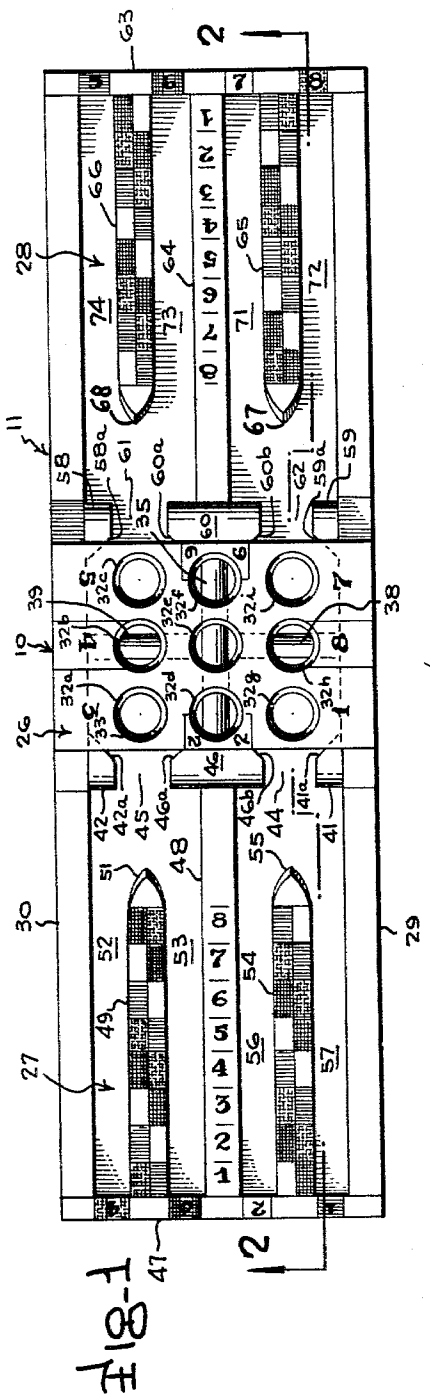


FIG. 1

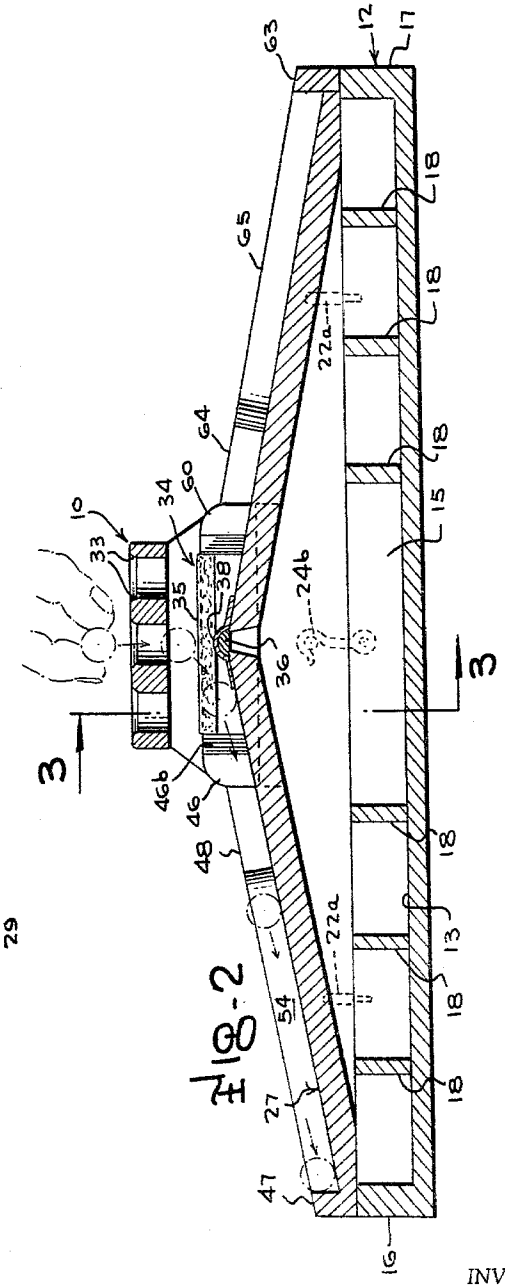


FIG. 2

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Filed Feb. 13, 1964 2 Sheets-Sheet 2

FIG-4

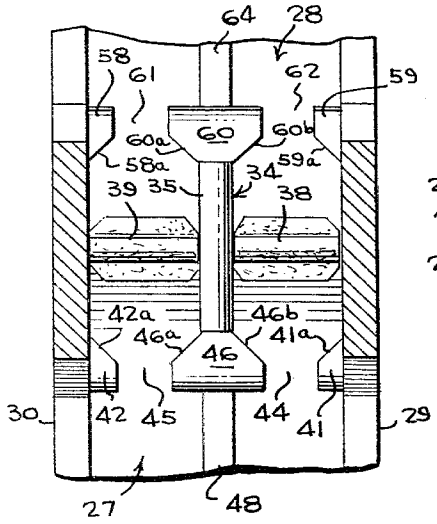


FIG-3

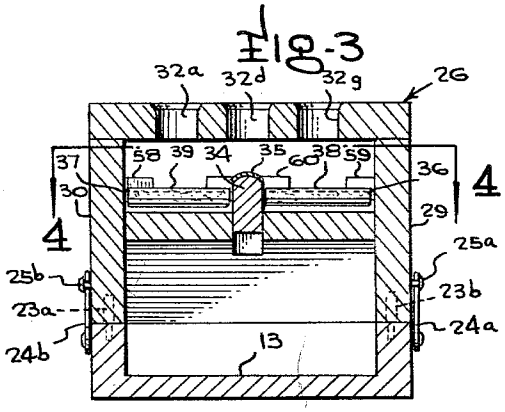
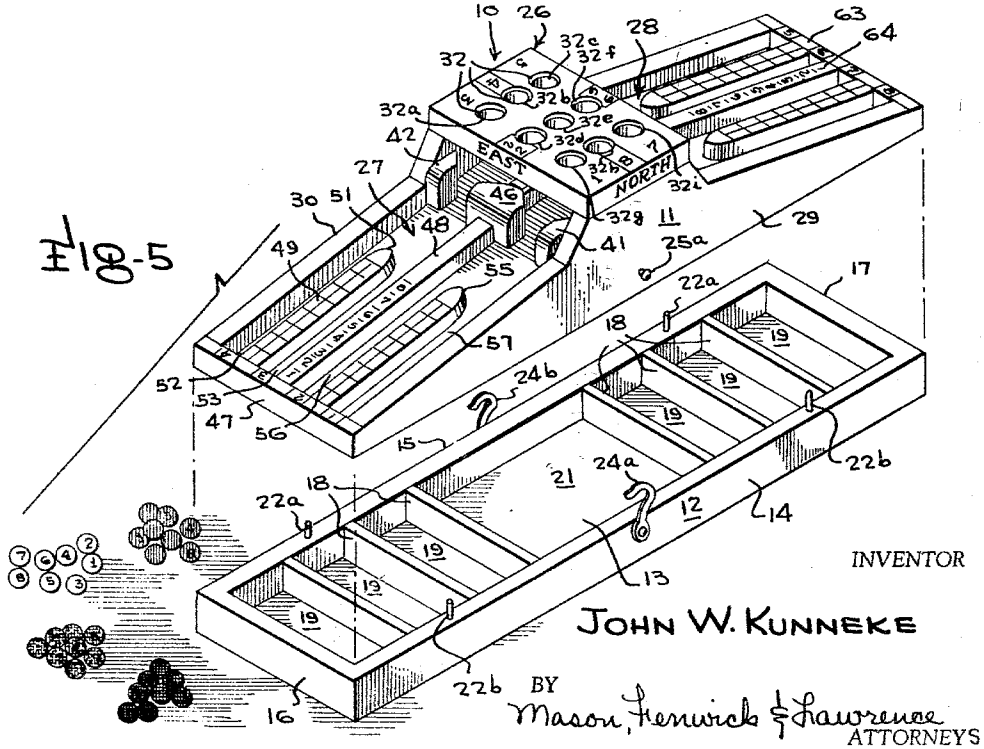


FIG-5



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BALL GAME WITH GRAVITY PROJECTING MEANS

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6 Claims. (Cl. 273—120)

This invention relates to games and the like and more particularly to games in which spherical objects or balls are utilized as the playing pieces.

An object of invention is the provision of a portable game apparatus which may be played with spherical objects and positioned upon a table or other means and designed to be played by one or more persons.

Another object of invention is the provision of a portable game apparatus in which spherical objects are inserted through a desired aperture and impinge means erected in the structure of the apparatus and in the path of the free falling spherical objects to alter the movement of the objects.

Another object of the invention is the provision of a portable game apparatus having means within the structure to allow the free fall of spherical objects therethrough and means in the path of the free falling objects to alter the path thereof to deflect the objects to conducting passageways having both numbered and colored designations.

Another object of the invention is the provision of a portable game apparatus in which spherical objects are initially played in the apparatus as a game of chance and then after the objects have completed all gravitational movements the players may engage in a game of skill.

Other objects, advantages and capabilities of the invention will become apparent from the following description, taken in conjunction with the accompanying drawings showing only a preferred embodiment of the invention.

FIGURE 1 is a top plan view of the game board of the present invention;

FIGURE 2 is a vertical longitudinal sectional view of the game board of the present invention taken along lines 2—2 of FIGURE 1;

FIGURE 3 is a vertical transverse sectional view of the game board taken along lines 3—3 of FIGURE 2;

FIGURE 4 is a horizontal transverse sectional view of the game board taken along lines 4—4 of FIGURE 3; and

FIGURE 5 is an exploded perspective view of the entire game board and also showing the playing objects.

Referring to the drawings wherein like reference characters designate corresponding parts throughout the several figures, the game board of the present invention is designated generally by the reference character 10. The game board 10 comprises an upper playing surface member 11 and a lower storage tray 12 adapted to be intimately joined to the bottom of upper member 11.

Storage tray 12 is of generally rectangular shape having a bottom 13 and side walls 14, 15 and end walls 16, 17 which define a compartmentized internal storage tray. The storage tray 12 has a series of dividers 18 which partition its interior into six spaces 19 each of which will normally be used to store one complete set of numbered balls that are used in playing the game of the present invention. The additional storage space 21 may be conveniently used to house score sheets or other paraphernalia that one may wish to use with the game board 10. Located atop side wall 15 and projecting upwardly are locating pegs 22*a*, and atop side wall 16 are pegs 22*b* which are adapted to be received in locating recesses 23*a*, 23*b* respectively of playing member 11. When it is desired to attach storage tray 12 to playing member 11, pegs 22*a*, 22*b* are positioned in recess 23*a*, 23*b* to locate

the playing member 11 in registry with storage tray 12. To hold playing member 11 and tray 12 of the game board together, latch hooks 24*a*, 24*b* are rotated upwardly to engage catch member 25*a*, 25*b* respectively, thereby affording a secure fit between member 11 and tray 12.

The playing member 11 generally comprises a playing deck 26 and two oppositely inclined surfaces 27, 28 that are supported between side walls 29, 30. More specifically the inclined surfaces 27, 28 might better be called "declined" surfaces when referenced to the playing deck 26. The playing deck 26 has three rows of three apertures or holes 32, or as they are individually designated 32*a*, 32*b*, 32*c*, 32*d*, 32*e*, 32*f*, 32*g*, 32*h*, 32*i*, equally spaced upon the upper surface of the deck 26 with the holes having an internal diameter just sufficiently larger than the outer diameter of the ball that will be used to play the game. The topmost portion of the holes 32 are beveled, as indicated by numeral 33, to more readily force the played ball to drop through the center of the holes 32 and prevent a player from directing the fall of the ball. As is seen from FIGURE 5 the playing deck 26 is labeled about two peripheral sides with the notation "north" and "east," and it is anticipated the other two sides will have "south," and "west," and for game purposes the holes 32 are numbered "1" through "8," with the exception that the center hole has no numerical designation. The above notations provide various combinations which are ideally suited for making numerous games to be played on the game board 10 of the present invention.

Immediately beneath the center hole 32*e* in the playing deck 26 and the holes designated 32*d* and 32*f*, and in substantially vertical alignment therewith, is a first impact member or deflector 34 spanning a portion of both inclined surfaces 27, 28 and lying in a plane parallel to the longitudinal axis of the game board 10 and having a rounded upper surface 35 spaced equidistant from the playing surface 26 throughout its entire length which encompasses the diameters of the center hole 32*e* and holes 32*d* and 32*f*. Transverse to the first deflector 34 and immediately beneath in substantially vertical alignment with the playing deck 26, center hole 32*e* and the holes 32*b* and 32*h*, are deflectors 36, 37 having rounded upper surfaces 38, 39 respectively. The deflectors 36, 37 have a height less than that of deflector 34 with respect to playing deck 26 and are further located atop the apex of the juncture of inclined surfaces 27, 28.

Located down the inclined surface 27 from deflectors 36, 37 are exit side baffles 41, 42 in intimate contact with side walls 29, 30 respectively. Baffles 41, 42 have beveled ball directing surfaces 41*a*, 42*a* directed toward deflectors 36, 37 in order that a ball striking the surfaces will be directed toward the center of respective exits 44, 45. Separating exits 44, 45, and forming an extension of the first deflector 34, is exit center baffle 46 having beveled ball directing surfaces 46*a*, 46*b* for directing the rolling balls toward exits 44, 45 on a predetermined ball-path as will be hereinafter described.

Extending from center baffle 46 to curb wall 47 is partition 48 which acts to divide inclined surface 27 in two portions. Partition 48 in one emodiment of the invention is shown to have imprinted thereupon a series of numbers from "1" through "8" evenly spaced along a portion of its length whereby the spacing corresponds generally to the diameter of the playing balls. These numbers are also used for game playing purposes in the manner of the imprinted numbers on playing deck 26. Between partition 48 and side wall 30 is a runway divider 49 having a rounded end 51 projecting up inclined surface 27 and terminating short of baffles 42 and 46, wherein the longitudinal axis of divider 49 projects through the center of exit 45. The placement of the divider between partition 48 and side wall 30 provides run-

ways 52, 53 to receive the played balls. Once a ball is in either runway 52 or 53 it continues under gravity down the inclined surface 27 until it rests against curb wall 47. For game playing purposes the runway divider 49 is colored in segments equal to the segment spacing of partition 48 and the location of the colored segments are alternated on each side of the longitudinal axis of the divider 49.

Between partition 48 and side wall 29 there is mounted on inclined surface 27 a runway divider 54 of identical construction to divider 49 and having a rounded end 55 directly opposite the center of discharge exit 45 and providing runways 56, 57. Along a substantial portion of the length of divider 54 are colored segments in the same manner as shown for divider 49, and the upper portion of curb wall 47 is delineated by both colored and numbered runway notations to be used in playing the game.

Mounted upon inclined surface 28 is generally the identical structure found on inclined surface 27 which comprises exit side baffles 58, 59 having beveled ball directing surfaces 58*a*, 59*b* and a center exit baffle 60 with beveled ball directing surfaces 60*a*, 60*b* for directing rolling balls toward exits 61, 62. Extending from center baffle 60 to curb wall 63 is a partition 64 dividing the inclined surface 28 in two portions. Located between partition 64 and side walls 29 and 30 are runway dividers 65, 66 having rounded ends 67, 68 respectively. For the purpose of playing particular games upon the present invention runway dividers 65, 66 and curb wall 63 have colored and numerical notations in the manner disclosed for similar elements mounted on inclined surface 27. Between partition 64 and side wall 29 the runway divider 65 divides one half of inclined surface 28 into runways 71, 72. On the other half of inclined surface 28 the runway divider 66 partitions the area into runways 73, 74.

The structural units of the game board of the invention may be produced from any suitable rigid material having sufficient strength for the intended purposes. The balls used in the game are preferably made of an extremely rigid and durable material.

The game may be played by one or more persons with each being provided with a set of balls each of which would normally be designated numerically different. The balls would normally be inserted through one of the desired holes 32 and allowed to travel under the force of gravity into one of the runways located upon either inclined surface 27 or inclined surface 28. Specifically the game is played substantially as follows, a ball would be dropped through one of the holes 32 of the player's choice and assuming the choice was center hole 32*e* the ball would drop through the hole onto the rounded upper surface 35 of deflector 34 and thus be deflected therefrom either to deflector 37 or deflector 36 from whence it would roll to one of the exits on either inclined surface 27 or inclined surface 28. Assuming the ball is deflected from deflector 34 onto deflector 36 it might take the path then of rolling toward exit 44 and being deflected toward the center of exit 44 by beveled ball directing surface 46*b* or 41*a*. Rolling from the center of exit 44 the ball encounters rounded end 55 of the runway divider 54 from which it rebounds and is deflected into either runway 56 or runway 57 at which time it would continue rolling down one of the above mentioned runways until it would come to rest against the curb wall 47. FIGURE 2 shows a ball being dropped through hole 32*e* and coursing down runway 57 in the manner above described. As is apparent, a ball initially dropped through hole 32*e* may by chance be directed to any one of the eight different runways, but a ball being initially dropped through one of the other eight holes will take substantially different courses. A ball being initially dropped through holes 32*a*, 32*c*, 32*g* or 32*i* would not encounter deflectors 34, 36, or 37 and would merely fall upon the respective inclined surface 27 or 28 and be directed through the respective exits under the holes from which chance would dictate that such a played ball would roll into only one of two runways. However, a ball being initially played through holes 32*d* and 32*f* would impinge upon deflector 34 and, depending upon which hole was played, would have a chance of being deflected to any one of four different runways. If a ball was played through hole 32*b* it is apparent that it would impact deflector 37 and would be deflected either down inclined surface 27 or inclined surface 28 and would by chance be directed to runways 52, 53, 73 or 74 which are all located on the "south" side of the game board. If a ball was played through hole 32*h*, a movement similar to that just described would enable it to impact upon deflector 36 and be deflected to one of the four runways 56, 57, 71 or 72 on the "north" side of the game board. After all the balls are played a gam of skill may then ensue in which the various players may, according to the rule of the particular game, move their balls from one runway to another.

The above description has shown how a new and novel game board using spherical objects for game pieces in which both a game of chance and a game of skill may be played concurrently to provide the combination of games that make for an interesting pastime.

While I have particularly shown and described one particular embodiment of the invention, it is distinctly understood that the invention is not limited thereto but that modifications may be made within the scope of the invention and such variations as are covered by the scope of the appended claims.

What is claimed is:

1. A game board structure for play with spherical objects, comprising a horizontal playing deck, a plurality of apertures in said playing deck adapted for the passage of spherical objects in free-fall therethrough, a pair of adjacent oppositely declined surfaces, deflecting means projecting upwardly from said declined surfaces adapted to deflect said spherical objects from the free-fall path, converging guide means on said declined surfaces to guide said spherical objects to a predetermined fall-path, diverging means on said declined surfaces beyond said guide means in said predetermined fall-path, said diverging means extending the remaining length of said declined surfaces and segregating portions of said declined surfaces into a plurality of runways, curb wall means at the end of said declined surfaces adapted to stop the fall of said spherical objects, and indicia on said game board denoting playing positions for said spherical objects.

2. A game board structure for play with spherical objects, comprising an upper playing surface member, a lower storage tray member, said storage tray member having locating means thereon, said playing surface member having recesses adapted to receive said locating means whereby when said locating means and said recesses are in registry a unitary game board structure is formed, said upper playing surface member further having side walls, a horizontal playing deck bridging said side walls, a plurality of apertures in said playing deck adapted for the passage of spherical objects in free-fall therethrough, a pair of adjacent oppositely declined surfaces, deflecting means projecting upwardly from said declined surfaces adapted to deflect said spherical objects from the free-fall path, converging guide means on said declined surfaces to guide said spherical objects to a predetermined fall-path, diverging means on said declined surfaces beyond said guide means in said predetermined fall-path, said diverging means extending the remaining length of said declined surfaces and segregating portions of said declined surfaces into a plurality of runways, curb wall means at the end of said declined surfaces adapted to stop the fall of said spherical objects, and indicia on said game board denoting playing positions for said spherical objects.

3. A game board structure for play with spherical objects, comprising an upper playing surface member, a lower storage tray member, said storage tray member having locating means thereon, said playing surface member having recesses adapted to receive said locating means whereby when said locating means and said recesses are in registry a unitary game board structure is formed, said upper playing surface member further having side walls, a horizontal playing deck bridging said side walls, a plurality of symmetrically located apertures in said playing deck adapted for the passage of spherical objects in free-fall therethrough, a pair of adjacent oppositely declined surfaces, a first deflecting means spanning a portion of both declined surfaces in longitudinal alignment therewith and positioned to project upwardly from said declined surfaces in substantially vertical alignment with certain of said apertures to cause deflection of said spherical objects from the free-fall path, a second deflecting means positioned atop of the juncture of said declined surfaces transverse to said declined surfaces and said first deflecting means and positioned to project upwardly from said declined surfaces in substantially vertical alignment with certain other of said apertures to cause deflection of said spherical objects, converging guide means on said declined surfaces to guide said spherical objects to a predetermined fall-path, diverging means on said declined surfaces beyond said guide means in said predetermined fall-path, said diverging means extending the remaining length of said declined surfaces and segregating portions of said declined surfaces into a plurality of runways, curb wall means at the end of said declined surfaces adapted to stop the fall of said spherical objects, and indicia on said game board denoting playing positions for said spherical objects.

4. A game board structure for play with spherical objects, comprising an upper playing surface member, a lower storage tray member, said storage tray member having locating means thereon, said playing surface member having recesses adapted to receive said locating means whereby when said locating means and said recesses are in registry a unitary game board structure is formed, said upper playing surface member further having side walls, a horizontal playing deck bridging said side walls, a plurality of apertures in said playing deck adapted for the passage of spherical objects in free-fall therethrough, the upper periphery of said apertures having a beveled edge to facilitate the entry of said spherical objects therethrough, a pair of adjacent oppositely declined surfaces, deflecting means projecting upwardly from said declined surfaces adapted to deflect said spherical objects from the free-fall path, converging guide means on said declined surfaces to guide said spherical objects to a predetermined fall-path, diverging means on said declined surfaces beyond said guide means in said predetermined fall-path, said diverging means extending the remaining length of said declined surfaces and segregating portions of said declined surfaces into a plurality of runways, whereby when said spherical objects impinge upon said diverging means the objects are directed at random into one of said runways, curb wall means at the end of said declined surfaces adapted to stop the fall of said spherical objects, and indicia on said game board denoting playing positions for said spherical objects.

5. A game board structure for play with spherical objects, comprising a horizontal playing deck, a plurality of symmetrically located apertures in said playing deck adapted for the passage of spherical objects in free-fall

therethrough, a pair of adjacent oppositely declined surfaces, a first deflecting means spanning a portion of both declined surfaces in longitudinal alignment therewith and positioned to project upwardly from said declined surfaces in substantially vertical alignment with certain of said apertures to cause deflection of said spherical objects from the free-fall path, a second deflecting means positioned atop of the juncture of said declined surfaces transverse to said declined surfaces and said first deflecting means and positioned to project upwardly from said declined surfaces in substantially vertical alignment with certain other of said apertures to cause deflection of said spherical objects, converging guide means on said declined surfaces to guide said spherical objects to a predetermined fall-path, diverging means on said declined surfaces beyond said guide means in said predetermined fall-path, said diverging means extending the remaining length of said declined surfaces and segregating portions of said declined surfaces into a plurality of runways, curb wall means at the end of said declined surfaces adapted to stop the fall of said spherical objects, and indicia on said game board denoting playing positions for said spherical objects.

6. A game board structure for play with spherical objects, comprising an upper playing surface member, a lower storage tray member, said storage tray member having locating means thereon, said playing surface member having recesses adapted to receive said locating means whereby when said locating means and said recesses are in registry a unitary game board structure is formed, said upper playing surface member further having side walls, a horizontal playing deck bridging said side walls, a plurality of symmetrically located apertures in said playing deck adapted for the passage of spherical objects in free-fall therethrough, the upper periphery of said apertures having a beveled edge to facilitate the entry of said spherical objects therethrough, a pair of adjacent oppositely declined surfaces, a first deflecting means spanning a portion of both declined surfaces in longitudinal alignment therewith and positioned to project upwardly from said declined surfaces in substantially vertical alignment with certain of said apertures to cause deflection of said spherical objects from the free-fall path, a second deflecting means positioned atop of the juncture of said declined surfaces transverse to said declined surfaces and said first deflecting means and positioned to project upwardly from said declined surfaces in substantially vertical alignment with certain other of said apertures to cause deflection of said spherical objects, converging guide means on said declined surfaces to guide said spherical objects to a predetermined fall-path, diverging means on said declined surfaces beyond said guide means in said predetermined fall-path, said diverging means extending the remaining length of said declined surfaces and segregating portions of said declined surfaces into a plurality of runways, curb wall means at the end of said declined surfaces adapted to stop the fall of said spherical objects, and indicia on said game board denoting playing positions for said spherical objects.

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