TETHERED BALL APPARATUS ADAPTED FOR PLAY UNDER WEIGHTLESS CONDITIONS

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ABSTRACT

The disclosure is directed to a ball that is centrally tethered on a swivel. The ball is struck by opposed players standing beyond the length of the tether. The game is specially adapted for play in space under weightless conditions. The tethered ball is connected to a swivel disposed centrally within a weightless chamber. Goal loops are positioned at a point to be intersected by the tethered ball. Rungs and rings are provided by which players may pull themselves vertically or sidewardly to selectively desired ball striking positions.

7 Claims, 5 Drawing Figures
TETHERED BALL APPARATUS ADAPTED FOR 
PLAY UNDER WEIGHTLESS CONDITIONS

BACKGROUND OF THE INVENTION

In Macy U.S. Pat. No. 2,083,850, issued June 15, 1937, for Game Apparatus, a ball, tethered on a line swivelled at top of a centrally upstanding pole, swings, when batted by opposed players, score resulting when the ball hangs up in loops supported slightly above the level of the same base that supports the pole, and by support means extending from the base. The opposed batters, not to be contacted by the ball, must stand sufficiently outwardly of the space traversed by it, as batted.

In games of the type, (where the loops are fixed to the same base that supports the upright from the top of which the swiveled tether extends that carries the ball at free end), no adjustability is provided for changing goal distance apart, or goal radius from central pole. Also, in such games, with goals and base supported from a common structure, a ball, struck with too much of an angularly downwardly directed stroke, may strike upon the supported base structure, thus fouling the continued course of ball travel directed by the blow. Also, when the ball is orbited too high and outwardly on one side, an opposing player, anxious in his time to get in position to strike the ball, as it comes down in orbit, too low and too close to the pole on the other side, may move inwardly from safe playing annular space, and stumble over the common support for pole and goals.

As astronautics develops, "astrospace" stations are contemplated, where the astronauts will be required to remain as observers for considerable lengths of time, the astrospace stations comprising devices or machines on which the astronauts live, as such space machines or devices travel in predetermined orbits during predetermined, long periods of observation and experimentation. No method or structure has heretofore been provided which could provide exercise as well as game participation entertainment, carried as part of the "space station." A game of the class hereinabove introduced, and adapted to be played by players, substantially weightless in space, could provide for them opportunity for exercise and relief from the tedium of their missions.

SUMMARY OF THE INVENTION

The invention, in brief, relates to a game where a ball, tethered to swivel centrally of space of traverse, is struck by player in direction to swing into engagement with a goal spaced from the swivel supporting upright.

Thus, as a primary object, the invention sets out to provide a game, comprised of a swivel supporting upright for a tether with ball on free end, in which the tethered ball is struck in direction to engage with a goal spaced from the upright.

It is also an object of this invention to provide a game of this class in which the goal means may comprise a pair of opposed goals or a plurality of goals, equally radially spaced from the swivel support post, independent thereof, and selectively disposable as to distance from support post, and as to relative angularity therefrom with relation to each other.

It is also an object of this invention to provide a game of this class adapted to be played in substantially weightless space, as by astronauts at a space "station," or in astrospace observation device orbited to travel at length in a predetermined orbit.

It is another and further object to provide a game of this class which may have structure added thereto whereby the game may be played by players, substantially weightless in space, as by astronauts in service in "space stations."

Other and further objects will be apparent when the hereinafter specification is considered in connection with the drawings.

BRIEF DESCRIPTION OF THE FIGURES

FIG. 1 is an elevational view of a form of the invention to be used on the surface of the earth, or under gravity;

FIG. 2 is a plan view, small scale, of the game shown in elevation in FIG. 1;

FIG. 3 is an elevational view, part in section, showing a form of the invention as modified to be carried in a "space station" or at an elevation at which the players are substantially weightless in space;

FIG. 4 is a plan view, small scale, of the game shown in elevation in FIG. 3, the view showing player disposition, especially with relation to goal radial extension inwardly; and

FIG. 5 is an elevational view of a racket or bat with which player strikes the tethered ball.

DETAILS OF THE INVENTION

Referring now to FIG. 1, an upright 10 is shown, as mounted in the ground 11, at the top of the upright, pole or post 10, a conventional swivel 12 is indicated diagrammatically, with swivel axis vertical. Alternatively, the swivel action may be obtained by no more than a loop on a null, as or shown in Macy U.S. Pat. No. 2,083,850. The upper end portion of the cord or tether 13, which tethers a ball 14 on its lower, free end, extends into, or through a clamp 15, shown diagrammatically in FIG. 1, whereby the tether end portion may be released by adjustable latched with relation to the adjacent, parallel extending part of the tether in the clamp, and the effective ball suspending length of the tether thereby adjusted, clamp 15, as described, are well known and conventional.

The ball 14 is attached to the lower, free end of the tether 13, and when struck by a bat or racket 16 it swings around in an orbit about the top of the post 10, the plane of the orbit being dependent upon the angle at which the bat 16 strikes the ball. The object of the game is to direct the ball 14 in such an orbit that it passes into a loop 17 which is formed in a vertical plane at the top of an upstanding goal post 18. The goal post 18 may be adjustably spaced with relation to the post 10 since they are positioned simply by sticking their sharpened lower ends into the ground level. As indicated by the dotted line in FIG. 1, the distance of goal post 18 from post 10 is selectively adjustable and consequently if placed further outwardly the tether 13 will have to be lengthened so that the ball 14 will enter the loop 17 and hang up wherein as the outer end portion of the tether 13 wraps up around the loop 17.

As shown in FIG. 2, a broken line circle 19 indicates an annular space that may delineate the field of operations of the players, with the exceptions that they can operate outwardly of this space, as chance or misstep may eventuate, whereas they can overextend into the
full line circle 20 air space, as to strike the swinging ball 14. However, it is not permissible for an opponent to interfere with, or deflect the course of directed travel of the ball, as struck by the other player at his time to "bat" or "serve." It can be noted in FIG. 2, as well as in FIG. 1, that there is a necessarily controlling relationship between the effective swivel length of the tether 13, and the position of the goal post 18, in radial distance, and of its loop 17 in elevation.

Referring now to FIGS. 3 and 4, a cylindrical chamber 21, with closed bottom and top, is illustrative of a play space in a "space station," or is illustrative of the "space station" itself, in any event entering and exit means for personnel may be assumed. In this chamber 21 a post 10a is shown upstanding from the bottom, centrally thereof, but since there is substantially no gravity high up in space, the tether 13a, shown suspended from the post 10a, may equally as effectively be suspended from a swivel suspending stud 10b, shown in broken lines as extending for a short distance, centrally downwardly from the top. As the tether 13a which swings the ball 14a, has to be swivel-mounted in some way, in any case, a swivel 12a is shown on top of the post 10a, and a swivel 12b is shown at the lower end of the stud 10b. The goals in this form of the invention may be disposed at a wide range of elevations, as the pull of gravity on the ball, when struck, is negligible, and it will travel in an orbit almost exactly as directed by contact with the ball striking bat or racket. As shown, the goals 18a comprise simple loops that may be selectively mounted in elevation, and radially around the chamber 21, as by suitable sockets provided in the wall of the chamber 21, such sockets not being shown because of the small scale of the drawings.

The drawings show vertically aligned, spaced apart hand lift bars or rails 22 that extend slightly, radially inwardly from the chamber wall in FIG. 3. Also, a player 23, in broken lines, is shown in FIG. 4, as holding on to a rail 22 with racket or bat 16 extending inwardly in this plan view to have struck the ball 14a, which is shown in this plan view, as in travel in direction to hang up upon entry into the approached goal or loop 18a. Of course, with this game being predicated upon three-dimensional determinants, it must be predicated that the trajectory or orbit of ball travel in FIG. 4, is such that it will arrive at a vertical, diametral plane through the goals 18a at an elevation to hang up in the approached goal 18a.

As the players are substantially weightless, they tend to float or rest in space wherever they become disposed, and it is necessary to provide some means of grasp whereby, by muscular exertion, they can direct themselves upwardly or downwardly into the range of another hand lift bar, grasp or rail, and thus stay in position to hit the ball as it swings by them in a next orbital course. Note also, a lift pole 24 is shown, by way of illustration in FIG. 3, and such lift poles may be provided in the chamber 21, at radius outwardly of any ball travel, thus to provide escalation and descent means, other than, or in supplementation to the hand lift rails 22. Particular notice should be made that the player 23 shown in FIG. 4 is disposed outwardly of the indicated orbit or trajectory of the ball 14a, as will be his oppositely disposed opponent, not shown, thus not to interfere with ball movement out of striking turn.

The complications of structure involved in playing the game, with players substantially weightless, adds to the ramifications of point making, or scoring procedures, whereby the game may be made more interesting. Also, it need not be limited to two oppositely disposed players, in either form thereof, nor to a pair of goals.

Although throughout the description hereinabove set forth, reference has been made to the goal piece or projectile as a tethered ball, it is not a necessary limitation that the game piece projectile should be of spheroid shape, but rather any other shaped game piece may be used, as cylindrical, cubical, conical, block or game pieces of a wide variety of shapes. Also, game pieces or projectiles may not be limited to material, rubber or plastic being materials that may well serve, but also other materials may be used as well.

In effect, the drawings and disclosure are by way of introduction to the broad spirit of the invention, while many other variations and embodiments may be included. Also, the appended claims are by way of illustration, as prosecution can develop.

1 claim:

1. Game apparatus comprising:
   a. a space station,
   b. a gravity free chamber provided within said station,
   c. a tethered ball,
   d. a centrally disposed support means within the chamber,
   e. swivel means disposed on the support means,
   f. said ball tethered to said swivel means constraining the ball to follow an orbit as directed by the impact of a game player,
   g. racket means to impact the tethered ball,
   h. goal means positioned at a distance spaced from said support means, the distance being slightly shorter than the length of the tether such that a player can direct the ball into a goal, and
   i. positioning means peripherally spaced about said support means by which players may pull themselves upwardly and downwardly in elevation and peripherally toward a better ball striking position.

2. Game apparatus as claimed in claim 1 in which said racket means comprise paddle shaped bats.

3. Game apparatus as claimed in claim 1 in which the swivel-associated tether end portion is clamp adjusted for tether length selection.

4. Game apparatus as claimed in claim 1 in which the goal means are selectively positionable in elevation and angle in relation to the support means.

5. Game apparatus as claimed in claim 1 in which the positioning means includes rung means elevationally and angularly positionable at a distance from the support means greater than the length of the tether and ball.

6. Game apparatus as claimed in claim 1, in which the positioning means also includes riser poles placed between the top and bottom of the chamber.

7. Game apparatus as claimed in claim 1 in which the swivel is suspended by a stud extending downwardly from the top of the chamber.

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