

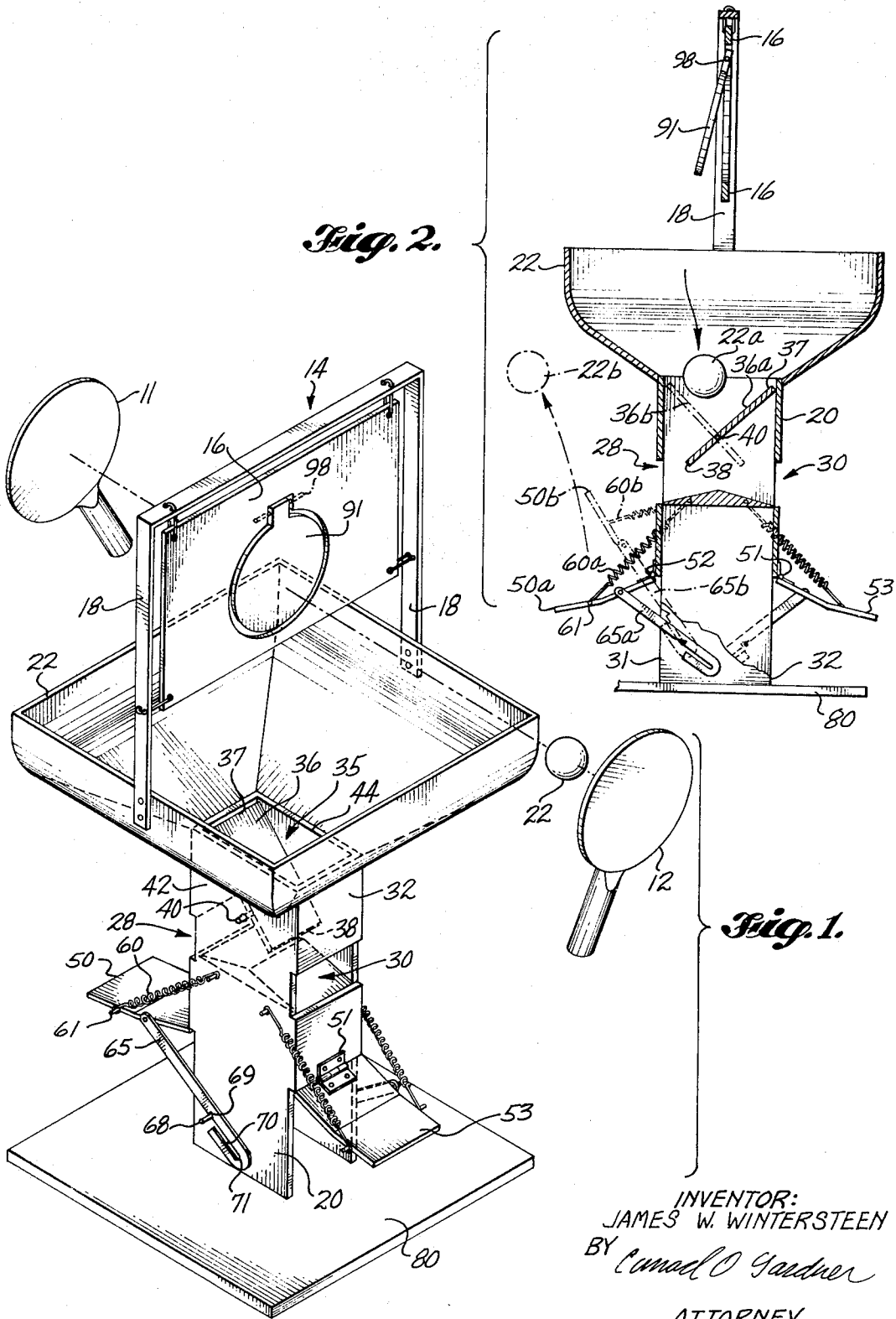
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BALL TARGET AND ALTERNATELY OPERATED BALL PROJECTOR

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**BALL TARGET AND ALTERNATELY OPERATED BALL PROJECTOR**

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**ABSTRACT OF THE DISCLOSURE**

A ball game device having a target supported above a tubular member having an outwardly extending funnel like upper portion to receive a ball directed toward either side of the target. The tubular member receives a ball and passes the ball successively to alternate openings located at the bottom and on opposite sides of the tubular member. When the ball passes from a bottom opening it is then projected outward and upward to be then directed by a player toward the target side opposite to that last played on. The ball may be directed by a paddle toward an aperture in the target larger than the ball diameter thus permitting with skill its passage therethrough for a score.

This invention relates to a ball game device and more particularly to a ball game device for two or more players which returns and maintains the ball in play without undue delays regardless of the dexterity of the individual players.

It is an object of this invention to provide a novel game device which may be played within the narrow and limited confines of a table top surface.

It is a further object of this invention to provide a novel means for improving certain of those skilled required in the playing of table tennis without requiring the expected extended table surface area.

It is yet a further object of this invention to provide means for returning a batted ball to the opposing player in substantially the same time period whether a score is made upon the target with the ball by a player or not.

Further objects and advantages of this unusual game will become apparent as the description proceeds when taken in conjunction with the accompanying drawings wherein:

FIG. 1 is a perspective view of the ball game device.

FIG. 2 is a side elevational view of the ball game device partially broken away to show more clearly the inner parts of the device during the several stages of ball play through the device.

Referring now to FIG. 1, paddles 11 and 12 are provided for players standing on opposite sides of target means 14. Target means 14 comprises a panel member 16 supported by a U-shaped upright 18. Panel member 16 extends in a vertical plane bisecting tubular member 20. Tubular member 20 has an upwardly extending funnel like portion 22 located beneath target means 14 for receiving a ball 22 directed by either player against either side of panel member 16 and which subsequently drops downward due to the force of gravity. The ball receiving tubular member 20 which is of lesser cross sectional area than its upwardly extending funnel like portion 22 receives balls dropping from the panel member 16 and passes each successive ball alternately through first and second bottom openings 28 and 30 respectively which are apertures in the opposing walls 31 and 32 of tubular member 20 which is of rectangular cross section. There is included means intermediate top opening 35 and first and second bottom openings 28 and 30 of tubular member 20 for directing balls passing successively through

top opening 35 alternately through the first and second bottom openings 28 and 30, such means comprises a panel member 36 which has an upper edge 37 and a lower edge 38 at the upper and lower portions thereof with respect to the pivotal axis thereof 40 which axis may comprise a pin as shown extending horizontally through panel member 36 through the opposing side walls 42 and 44. The upper edge 37 runs parallel to pin 40 of the pivotal axis but is further removed at all times from pin 40 than is the corresponding lower edge 38 of panel member 36 since the top portion of panel member 36 is longer than the bottom portion and this relative dimension of panel member 36 causes the top portion to weigh more than the bottom portion below pin 40 and further permits a ball rolling by force of gravity down the length of panel member 40 to cause the panel to then flip over to its other stable condition causing a subsequent ball entering top opening 35 to travel to the other of bottom openings 28 and 30. Panel member 36 thus has its top edge 37 lying against inside surface of one and then the other of opposing walls 31 and 32 of tubular member 20 after each successive pass of a ball through top opening 35. The gravity forces of the ball alone travelling down through tubular member 20 provides those forces on panel member 36 which cause passage of successive balls alternately through bottom openings 28 and 30. Subsequent to travel of the ball through opening 28 it falls upon a ball propelling means which is disposed below the opening 28 and which upon impact of the ball thereon, projects the ball upward and back into play. In FIG. 1 this ball propelling means is shown to comprise a panel member 50 which is hingedly attached by a hinge 52 (see FIG. 2) in the same manner as opposite panel member 53 is attached by its corresponding hinge 51 to the outer of the side wall 31 of tubular member 20 which is shown here as rectangular in cross section. Spring 60 coupled between fastener 61 in a side edge of panel member 50 and fastener 62 on an outer wall of tubular member 20 permits panel member 50 to flip up when the spring 60 is becoming unbiased due to its discharge by a panel member 50 retaining means comprising side arm member 65. Side arm member 65 also limits the distance of travel upward of panel member 50 to its second position since nail 68 limits the upward travel of side arm member 65 when the end 71 of slot 70 is reached. A small vertical slot or notch 69 prevents motion of side arm member 65 while spring 61 is maintained in its first position in a biased or extended state. Ball impact on panel member 50 drives panel member 50 downward slightly causing nail 68 to jump out of notch 69 and subsequent release of tension in spring 60 causing motion of panel member 50 upward and projection of the ball upward and outward from the center axis of tubular member 20 toward the player. While a spring 60 is shown, a rubber band has also been successfully employed in its place. Instead of hinge 52 and spring 60, an alternative ball propelling means which is more compact includes simply the substitution of a pin running along the same axis as the pin axis of the hinge as shown in FIGS. 1 and 2 which acts to pivot panel member 50 the pin including a spring employed in the same manner as the spring mechanism on the conventional mousetrap however in this application acting to urge panel member 50 upward. Side arm member 65 in either case is retained for the purpose of discharging the propelling means at the right instant, viz upon impact of the ball on panel member 50 and also for the purpose of limiting the extent of upward travel of panel member 50. A bias adjusting means can be utilized in series with the spring 60 to increase its extension in the biased first position thereby providing increased propelling action due to the extra force applied in urging

panel member 50 upward at time of discharge to the second or unbiased condition. Such fine adjustment in biasing if desired may be provided by means for moving fastener 62 with the end of spring 60 slideably on a track to a position further along and away from the main spring body thereby increasing the extension tension of, or biasing of the spring. While tubular member 20 is shown as having a base or standard means comprising a base panel 80 attached to the base of tubular member 20 which extends centrally and vertically upward therefrom and which may be attached thereto by glueing in the case where tubular member 20 and base panel 80 are constructed of wood it should also be recognized that in certain applications where for example 4 players desire to participate, the tubular member 20 may be fixedly mounted on a turntable top with an outwardly extending arm which permits rotation of the target 90 degrees for example so that two further oppositely facing players may continue the ball in play after the other opposing players have completed their volley. The turntable base is not necessary for the accommodation of four players however since two players on either side can play alternately in the fixed base embodiment as shown in FIGS. 1 and 2 in a manner similar to the way a doubles game is played in the game of Ping-pong where two players are on each end of the table.

#### OPERATION

In order to illustrate the operation of this invention it will be necessary to refer to FIG. 2 which shows the flow path of a ball through the device with the position and status of the various elements subsequent to ball ejection toward a player. Solid lines show the initially set state of the elements and the dotted lines show the final positions of these same elements after discharge of the ball upward and into play. In order to describe briefly the various human skills that are developed by utilization of this device and further indicate the function of this apparatus in response to a score it is perhaps best to show the interaction of two players with this device. For convenience and simplicity the case of two players may be considered and their interaction with the machine described. The first player Reg holds a paddle which may be a Ping-pong type paddle as shown in FIG. 1. Reg stands on the left side of panel member 16 facing it and also facing opening 28. Standing on the other side of panel member 16 also holding a paddle is Ed. Now Reg is somewhat more dexterious than Ed although Ed while not as dexterious sometimes however has luck on her side. Referring now to FIG. 2 it can be seen that Ed standing on the right side has hit the ball a rather lucky shot since trapdoor means 91 is seen deflected to our left. Trapdoor means 91 is preferably located between the players eye level and waist level. Ed has hit the ball into trapdoor means 91 which is suspended by pin 98 causing trapdoor means 91 to swing to the left and allow passage of the ball 22a then through panel 16 by way of trapdoor means 91. Ball 22a is seen now dropping through the top opening 35 (see FIG. 1) of tubular member 20. Ball 22a rolls down panel member 36a past pivot 40 and down across the bottom portion of panel member 36a off its lower edge 38 and out first bottom opening 28 which we see on our left since we see a side view in FIG. 2. As ball 22a runs across lower edge 38 it causes the top portion of panel member 36a above the pivot 40 to swing over until top edge 37 rests against the left or opposing inside surface of tubular member 20 as shown in dotted form at 36b. Now the ball 22a coming out of first bottom opening 28 falls on panel 50a which has been previously pushed down into its first or biased position with spring 60a in its extended position as shown. The impact of ball 22a on panel 50a causes side arm member 65a to be released for travel previously described in a manner which allows travel of panel 50a upward sending the ball 22a upward to the position 22b as shown. The spring extension at 60a is relaxed as shown

at 60b and panel 50a goes as far up as indicated at 50b its second and final upward position limited by the panel member retaining means comprising side arm member 65a shown in its final position also at 65b in the manner as previously indicated. It can now be seen that it is up to Reg on the left side to exercise his dexterity and skill to hit the ball through trapdoor means 91 if he is also to score and keep even with Ed. In any case whether Reg is successful in hitting the ball 22b subsequently through trapdoor means 91 or not the ball will go down panel member 36b and out the second bottom opening 30 on Ed's side setting the ball up on her side for her next shot. The set up time after Reg's shot in which Ed must again hit the ball is about the same whether Reg's successful in scoring or not since in either case the ball must fall down from the vertically suspended target means including scoring trapdoor 91 or the panel 16 which catches the balls that are not scored and subsequently be processed through the remainder of the system and ejected to the correct player. The game may be expanded to include two more players Lynn and Doug and as in Ping-pong two of the above mentioned players may team up to play the remaining two, each team of two players standing on opposite sides of panel member 16. The turntable mount previously referred to may also be utilized to accommodate two teams of two of the above players, and the game device may be rotated through 90 degrees with four players distributed opposite the four sides of tubular member 20. A developed model utilizing pieces of plywood to form the flat panel surface portions has been constructed and found to provide a game device which can be played quite enjoyable by those who are dexterious, and those who are not so dexterious, since the size of the trapdoor may be varied in diameter and increased to a diameter of e.g. about 3 inches to in effect afford even matching of players and fun for all.

Although a preferred embodiment and a modification thereof have been described and disclosed hereinbefore, it is to be remembered that various alterations and changes can be made thereto without departing from the true spirit and scope of the invention as defined in the appended claims.

I claim:

1. A ball game device comprising vertically suspended target means, a ball receiving tubular member having a top opening disposed beneath said target means, said ball receiving tubular member having first and second bottom openings at opposite sides thereof, means intermediate said top opening and said first and second bottom openings for directing balls passing successively through said top opening alternately through said first and second bottom openings, first and second ball propelling means disposed beneath said first and second bottom openings respectively for projecting a ball subsequent to the time of impact of a ball thereon.

2. A ball game device according to claim 1 wherein said means intermediate said top opening and said first and second bottom openings for directing balls passing successively through said top opening alternately through said first and second bottom openings comprises a panel member pivotally supported within said tubular member about a horizontal axis, said panel member having a top portion extending upward within said tubular member above said pivotal support and a bottom portion extending downward within said tubular member below said pivotal support, said top portion having a weight exceeding that of said bottom portion so that a ball passing along said bottom portion causes the top portion to be pivoted to fall against the opposite side wall of said tubular member thereby causing a subsequent ball passing along said bottom portion to pass through an alternate one of said first and second bottom openings.

3. A ball game device according to claim 2 wherein said upward portion of said panel member and said lower portion of said panel member have edges extending along

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lines parallel with said horizontal axis, the edge of said top portion disposed a greater distance from said horizontal axis than the edge of said bottom axis, said edges being limited in travel by the inner walls of said tubular member.

4. A ball game device according to claim 1 wherein said first ball propelling means comprises a resettable device including a further panel member having a flat surface including an end hingedly attached to said tubular member below said first bottom opening and spring means coupled between said panel member and said tubular member, said panel member being manually set in a spring biased first position, and discharged subsequent to the time of impact of a ball thereon by relaxation of said bias and motion of said panel member in an upward direction to a second position.

5. A ball game device according to claim 4 wherein the motion of said panel member in an upward direction to said second position is limited by panel member retaining means coupled between said panel member and said tubular member.

6. A ball game device according to claim 1 wherein said ball receiving tubular member includes an outwardly extending funnel like upper portion for supporting said target means, said target means comprising a further panel member extending in a plane substantially bisecting said tubular member, said tubular member having a rectangular cross section, and each of said opposite sides of said tubular member having said first and second bottom openings extending in further planes parallel to said plane bisecting said tubular member.

7. A ball game device according to claim 6 wherein

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said outwardly extending funnel like upper portion is detachable from said tubular member thereby facilitating disassembly and storage of said ball game device.

8. A ball game device according to claim 1 wherein said target means comprises a further panel member having an aperture therein for passage of a ball there-through.

9. A ball game device according to claim 8 wherein said further panel member includes trapdoor means hingedly mounted therefrom along a horizontal axis and extending downward in a vertical direction across said aperture.

10. A ball game device according to claim 1 wherein said ball propelling means for projecting a ball comprises a downwardly extending further panel member arranged to move further in a downward direction upon impact of a ball thereon before projecting the ball in an upward direction and back into play.

#### References Cited

##### UNITED STATES PATENTS

1,393,408	10/1921	Tenney	273—95
1,576,140	3/1926	Schneider	46—43 X
3,043,592	7/1962	Lohr	273—30

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