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BALL REPROJECTOR

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BALL REPROJECTOR

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This invention relates to game apparatus and more particularly to ball reprojecting mechanism for such apparatus, which ball reprojecting mechanism will be relatively simple and economical in construction and highly efficient in use.

It is an object of this invention to provide in a ball game apparatus wherein balls are adapted to be projected in one direction, a means for reprojecting balls in an opposite direction, which reprojecting may be varied at the option of the player.

Another object of this invention is to provide in a game in which balls are projected along a given trajectory a means for reprojecting balls and means for adjusting such reprojecting means relative to the given trajectory.

A further object of this invention is the provision in games employing ball reprojecting mechanism, of means for adjusting such reprojecting mechanism laterally to control the reprojecting of balls so that such reprojected balls will be deflected along different paths of movement in accordance with the adjustment made.

Other objects and advantages of the present invention will appear more fully as the device is described in the accompanying specification in view of the drawing, in which:

Fig. 1 is a fragmentary perspective view of an amusement apparatus embodying our invention;

Fig. 2 is a fragmentary vertical section of our invention as seen along line 2—2 of Fig. 1;

Fig. 3 is a fragmentary bottom plan view of the game board illustrated in Fig. 1; and

Fig. 4 is an exploded perspective view illustrating the various parts associated with the adjustable reprojecting means.

As seen in Fig. 1 our adjustable reprojecting mechanism is shown associated with a game apparatus 10 having player pieces simulating baseball players. The apparatus includes a cabinet 11 having a playboard 12 upon which there is mounted an enclosure 13 consisting of glass sides, ends and top, suitably supported by a frame 14 supported on the board 12. Within this enclosure 13 there is arranged the actual game playing pieces. Such games may employ any one of a number of well-known ball projecting devices by which a ball will be projected along a predetermined trajectory.

In the present instance, there is shown a ball pitching unit 15 of a specific type forming the subject matter of our Patent No. 2,294,035. By this ball projecting means balls are adapted to be thrown or directed along a certain path of movement indicated by the dot-dash line T.

Ball pitching devices for such purpose are well known in the art, as is evidenced by Patent No. 1,285,132 issued to one Grimes, it being an object of the present invention to reproject balls so projected along a predetermined and definite path of movement. Other than for the purpose intended such ball projecting device does not form a part of this invention.

The ball reprojecting mechanism is indicated at 16 and in the present instance simulates a batter for a baseball game. The mechanism 16 includes a body, the lower portion 17 of which forms a standard, while the upper portion 18 thereof is mounted for rotatable movement about a substantially vertical axis. The standard 17 has a base formation 19 from which extends downwardly a boss formation 20. The base 19 is adapted to rest upon the upper surfaces of the playboard 12, with the downwardly extending boss 20 disposed in a slot 21 formed in the board 12 and extending transversely thereof. The slot formation 21 is disposed in the board with its long axis substantially at right angles to the trajectory T of the ball. By this arrangement the body 17—18 is disposed in the normal batting position assumed by a baseball player in the conventional game.

The underside of the board 12 is partially gouged out as at 22 and has a stationary plate 23 fixed thereto by threaded screws 24. A slot 25 is formed in the plate 23 and is arranged in alignment with the slot formation 21 so that the boss formation 20 will be free to move relative to such slots. A movable plate 26 has pin 27 and slot 28 connection with the mounting plate 23 and has a sleeve formation 29 into which the boss formation 20 is normally disposed, there being a suitable set screw 30 affixing the boss 20 within the sleeve 29 so that the standard and base 17—19 will be movable with the shifting plate 26 by means now to be described.

A control means by which the reprojecting device 16 is shiftable comprises a control handle 31 pivotally arranged on the cabinet 11 (exteriorly of the enclosure 13) through the medium of a bushing 32 mounted on the playboard 12.

A vertically disposed shaft 33 is rotatably mounted in the bushing 32 and has affixed to its upper end the handle 31. The lower end of the shaft 33 carries a lever 34 for swinging movement with the shaft and has pin and slot connection 35 with one end of a rocker arm or lever 36. This rocker arm is pivoted at its central portion as at 37 to the underside of the board 12 and has its opposite end portion operatively connected

to the shiftable plate 25. In the present instance the rocking lever 36 has a slot formation 38 at its inner end, there being a pin means 39 extending through the slot 38 for threadable connection to a depending lug 40 formed integrally with the shiftable plate 26.

The reprojecting mechanism 16, as hereinbefore explained, has an upper portion 18 mounted for rotatable movement about a vertical axis; and means for causing rotation of this upper portion 18 is provided by a vertical shaft 41 mounted for rotatable movement through one leg portion 42 of the standard 17, which leg portion 42 is aligned coaxially with the boss formation 20. The rotatable shaft 41 has its lower end portion extending beyond the boss formation 20 and is adapted to have a lever arm 43 fixedly attached thereto by a set screw 44. The lever 43 is pivotally connected as at 45 to a link bar 46 near one end thereof, and this link bar has its opposite end pivotally connected as at 47 to a lever 48 carried at the lower end of a vertically disposed shaft 49 mounted for rotatable movement in a bushing 50 carried by the playboard 12 to the right of the bushing 32, as seen in Fig. 1. A hand-operated control lever 51 is fixed to the upper end of the vertically disposed shaft 49 to impart rocking motion to the shaft. The inner free end 52 of the link 46 has a spring 53 attached thereto, the opposite end of the spring being anchored as at 54 to the underside of the board 12 to urge the member 46 and associated parts into a normal position as shown.

The movable body 18 has a pair of laterally extending arms 55 with a bat 56 extending therefrom in such a manner that when the body 18 is oscillated the bat 56 will swing through an arc indicated at A. The swinging action of the bat 56 is brought about through the hand-operated lever 51, which, when urged clockwise as seen in Fig. 1, will cause the bat to assume the dotted-line position in readiness to strike an oncoming ball.

In operating the game the player is free to manipulate the bat to strike balls traveling along the trajectory T, for the purpose of reprojecting the ball back upon the board in an attempt to lodge the ball in various objectives (not shown) placed in different positions within the enclosure 13. As is a general rule, the various objectives may have different score values or these objectives may be such that once a ball is lodged therein the objective is out of play. For this reason it is apparent that the skill of the player may be employed in directing balls toward one or another objective as he may choose.

To this end it will be noted that the lengthening or shortening of the leverage provided by the bat portion 56 will aid the player in directing the ball toward a particular objective. To accomplish such skillful operation of the reprojecting means, the player will use his left hand to control the positioning of the batter with respect to the line of flight of the ball; for instance, with the lever 31 shown in the position in Fig. 1, the batter is in a position whereby a maximum long stroke of the bat will be accomplished. If a shorter stroke is desired, the lever 31 will be rotated counterclockwise (Fig. 1), thereby rocking the lever 36 clockwise on its pivot 37 to shift the movable plate 26 to the right, and by reason of the connection of the base 19 and standard 17 with the plate 26, the entire body of the batter will be shifted closer to the trajectory of the ball whereupon the ball will strike the bat closer to

the arms 55 of the body portion 18, thus rendering a shorter stroke of the bat through the hand control 51 as heretofore described, and causing the ball to be reprojected more in a direction to the right of the ball projecting unit, or toward the "right field" in the usual baseball playfield.

The swinging action of the bat 56 may likewise be skillfully controlled to attain a particular directional flight of the ball, the movement of the bat, however, being limited to a particular segmental area by reason of the link 46 contacting the sleeve formation 29 in extreme positions. With the bat in the position shown in Fig. 1, the link 46 is in the position shown in Fig. 3, with one side edge 45' thereof bearing against the sleeve formation 29. When the handle 51 is rotated clockwise, such clockwise movement of the lever 51 and the corresponding lever 43 is limited by reason of the pivotal connection 45 on the link 46 passing through an arc about the vertically disposed shaft 41 until the link 46 again engages the sleeve formation 29, such engagement occurring approximately at the point indicated at 46'.

The back stop 63 may be provided to prevent projected balls from constantly hitting the front face of the enclosure 13, and this back stop 60 may be of a rather resilient character, such for instance as Celluloid, whereby balls striking such back stop will be caused to roll back toward the pitching unit 15 for return to its supply source.

From the foregoing description it is apparent that we have provided a novel ball reprojecting mechanism having a dual control whereby a player may exhibit his skill in reprojecting balls toward any one of a number of pre-selected objectives.

While we have illustrated and described the preferred form of construction for carrying our invention into effect, this is capable of variation and modification without departing from the spirit of the invention. We therefore, do not wish to be limited to the precise details of construction set forth, but desire to avail ourselves of such variations and modifications as come within the scope of the appended claims.

Having thus described our invention, what we claim as new and desire to protect by Letters Patent is:

1. In a ball reprojector adapted to deflect a ball traveling along a predetermined trajectory, the provision of a movable standard, lever means pivotally mounted on said standard, means for controlling the pivotal movement of the lever means, and means for shifting said standard toward and away from said predetermined trajectory; said last named means comprising in combination a fixed plate having a slot formed therein extending transversely of said trajectory, a movable plate arranged for shifting movement on said fixed plate and having a depending boss formation thereon for supporting said lever means for pivotal movement on said standard, said boss formation extending through said slot and into said movable plate, and manually controlled lever means operatively associated with said movable plate for shifting the latter.

2. In a ball game apparatus including a cabinet and a transparent enclosure together with means for pitching a ball along a particular trajectory, the provision of means for reprojecting balls comprising a movable standard, means mounting said standard on the cabinet within the enclosure for movement relative to said trajectory, said means comprising in combination a

stationary plate having a slot formation at right angle to said trajectory, a shifting plate arranged on said stationary plate for movement parallel to said slot, boss means on said standard and extending downwardly through said slot into said shiftable plate joining the latter with said standard, and manual control means for said shiftable plate and disposed exteriorly of said enclosure on said cabinet.

3. In a ball game apparatus including a cabinet having a playboard and a transparent enclosure together with means on said playboard for pitching a ball along a particular trajectory together with means for reprojecting balls comprising a movable standard, ball batting means pivotally mounted on said standard and adapted to reproject balls passing along said trajectory and control means for said batting means and arranged exteriorly of said enclosure, the combination of means mounting said standard on the playboard for movement relative to said trajectory, said means comprising a sole formation in said playboard, a movable plate mounted beneath said playboard for movement transversely of said trajectory, means mounting the movable plate as aforesaid said standard having a boss formation for pivotally supporting said batting means, said boss formation extending downwardly through said slot and into said movable plate, and manual control means for said movable plate and disposed exteriorly of said enclosure on said cabinet.

4. In a game board having a ball reprojector adapted to deflect a ball traveling along a predetermined trajectory, said ball reprojector having a vertically disposed shaft rotatable for swinging a bat together with means for manually

controlling the bat and further having a standard arranged for movement crosswise of said trajectory, the combination of a base for said standard and having a depending boss formation for supporting said vertically disposed shaft, a slot formation in said game board and disposed at substantially right angle with respect to said trajectory, a stationary plate supported on the underside of said game board and having a slot formed therein arranged in register with said slot formation, a movable plate arranged for shifting movement on said stationary plate in a direction parallel to the long axis of said slot formation and having a sleeve formation for grippingly engaging said depending boss, pin and slot means for arranging said movable plate for shifting movement as aforesaid, and manually operable means for said movable plate for shifting the latter transversely of said trajectory.

5. In combination with a nether portion of a manikin for batting balls projected along a certain trajectory, means for shifting said nether portion transversely of said trajectory and comprising a base for the nether portion, a stationary horizontal panel having a slot formed therein at right angle to said trajectory, a movable plate, means supporting said movable plate beneath said stationary panel for movement parallel to the long axis of said slot, said base having a depending boss formation extending through said slot into engagement with said movable plate, and lever means operatively associated with said movable plate for shifting the latter relative to said stationary panel.

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