

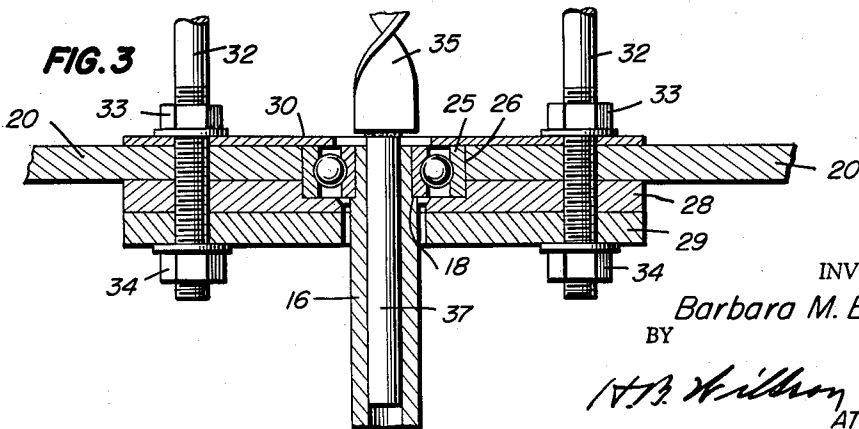
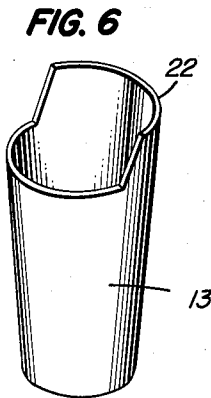
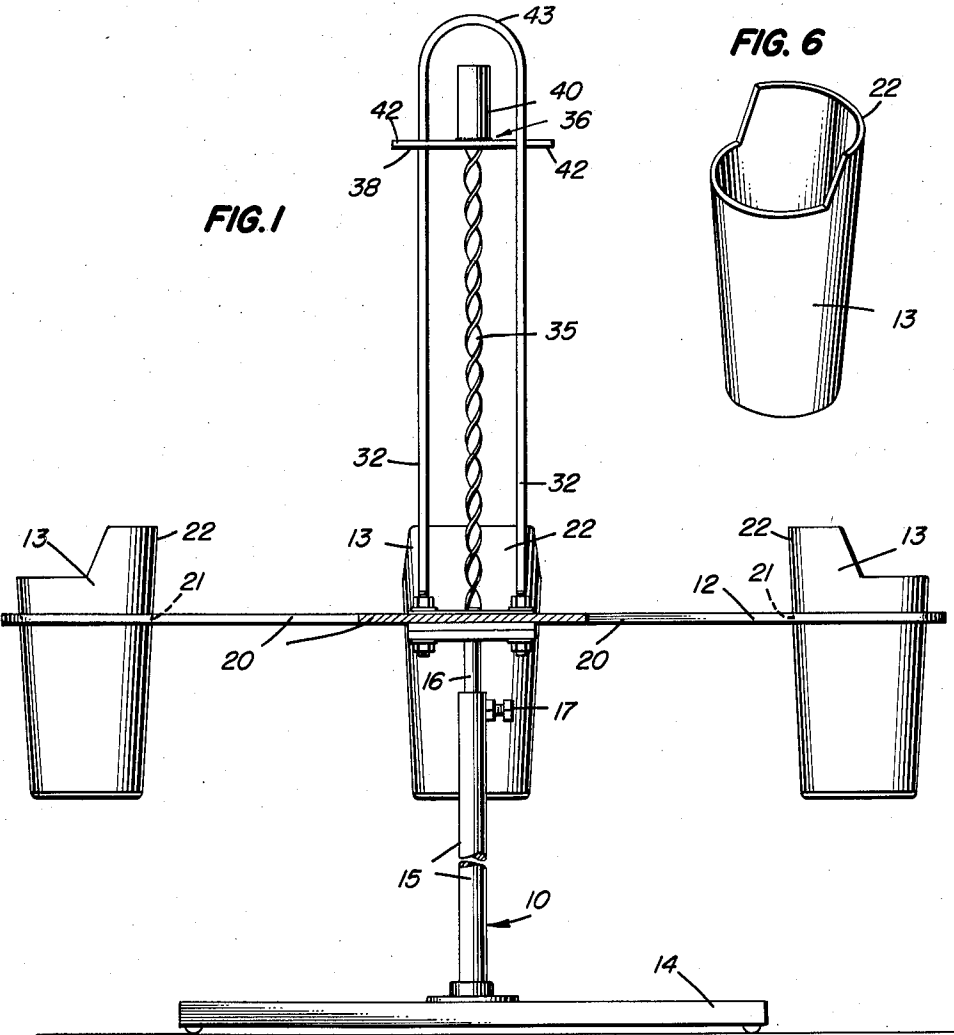
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B. M. ELOFSON
BALL TARGET GAME APPARATUS

3,103,362

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2 Sheets-Sheet 1



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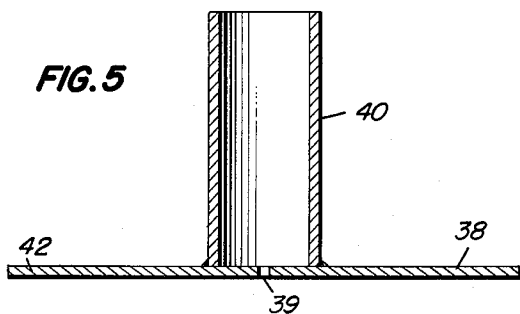
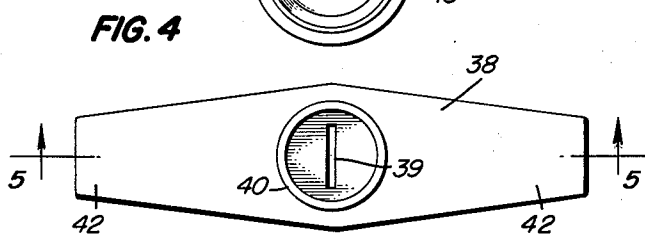
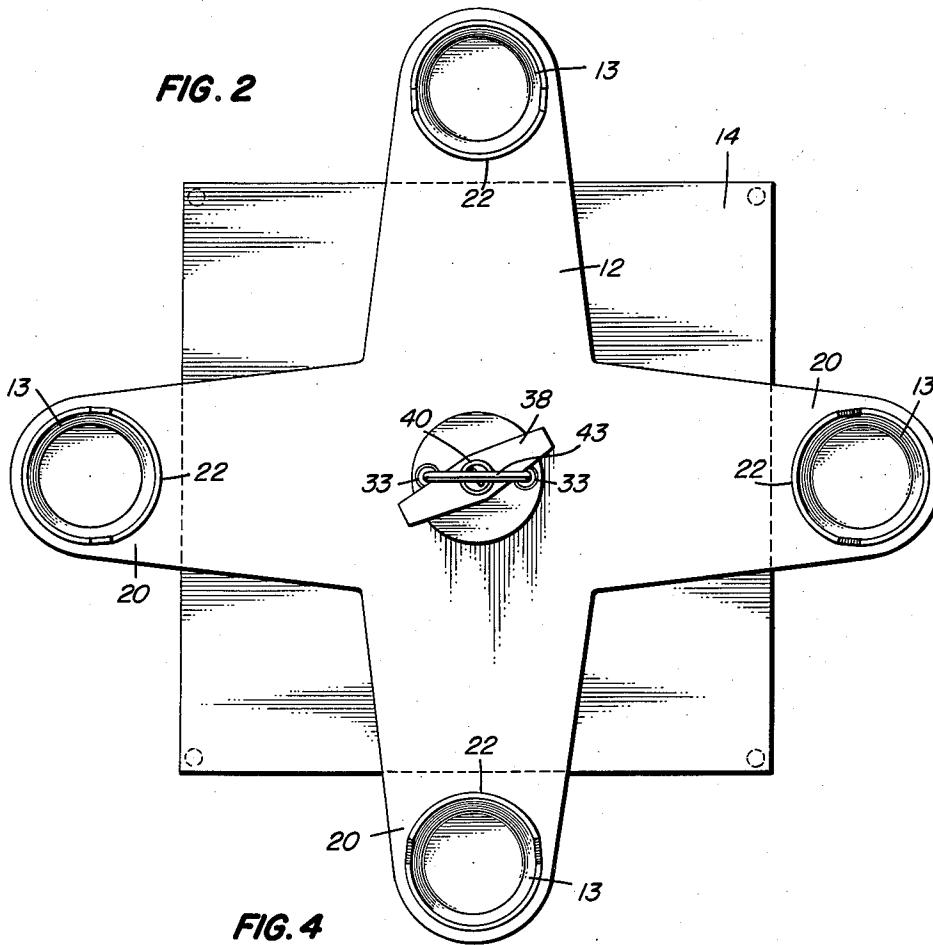
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BALL TARGET GAME APPARATUS

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BALL TARGET GAME APPARATUS

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6 Claims. (Cl. 273-105)

This invention relates to game apparatus of the type in which balls or other missiles are thrown by the players into cups or other target receptacles that rotate about a vertical axis, in order to make scoring plays.

The invention is more particularly directed to the means for periodically rotating the target cups, and contemplates a member mounted for rotation on a vertical axis and carrying an annular series of ball catching or receiving cups and means for causing the cup carrying member to be rotated at a constant speed and for a definite period of time during each player's turn for throwing his several balls. In the past such rotary target carrying members have been spun at varying speeds by hand or rotated by an electric or other motor; and the principal object of the invention is to provide an effective periodically operated driving means which will turn the target carrying member at a constant speed and for the same period of time so that there will be the same number of rotations during each player's turn for throwing his balls.

Another object is to provide a driving means of the above indicated character in which a coarse pitched screw member and a traveling nut or weight are used as the driving means.

Another object is to provide such a driving means which is simple and relatively inexpensive in construction, reliable in operation, and durable in use.

With the above and other objects and advantages in view, the invention resides in the novel combinations and arrangements of parts and the novel features of construction hereinafter described and claimed, and illustrated in the accompanying drawings which show the present preferred embodiment of the invention.

In the drawings:

FIG. 1 is a side elevation of the improved game apparatus, with one of the cups omitted and a part in section;

FIG. 2 is a top plan view;

FIG. 3 is a detail sectional view on an enlarged scale through the central portion of the cup carrying member and the associated parts;

FIG. 4 is a top view of the nut or weight member on an enlarged scale;

FIG. 5 is a detail section taken on the line 5-5 in FIG. 4; and

FIG. 6 is a detail perspective of one of the cups.

Referring more in detail to the drawings, the numeral 10 denotes an upright support adapted to rest on the floor or ground and on the top of which is rotatably mounted a member 12 which preferably carries an annular series of target cups or other receptacles 13. The support 10 is preferably vertically adjustable, and as shown, comprises a base 14 from which rises a standard made of telescoped tubular sections 15 and 16. The upper section 16 may be a ¼" pipe 25" long that may be held in an adjusted position by a set screw 17 to hold the cup carrier 12 at the desired height. The upper end of the section 16 is reduced to provide an annular shoulder 18 that supports the weight of the cup holder or carrier 12, the latter being removably as well as rotatably mounted on the standard, as presently explained.

In order to permit 4 persons to play the game, the carrier may be a flat plate of metal or other material having four equally spaced radially projecting arms 20 each of which may be about 15" long and on each of which may be permanently or removably mounted one of the cups 13. The latter may be variously constructed of metal

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or a suitable modern plastic material and are rigidly supported on the arms 20. As shown the cups 13 are of cylindrical shape but tapered to partly enter the circular openings 21 formed in the outer portions of the arms 20. The taper of the cups permit them to be seated in the openings and frictionally held, but they may be otherwise fixed. When balls having a diameter of 2" are used, the open tops of the cups may have a diameter of about 4½". If desired the cups may be provided with upwardly projecting back stops or deflectors 22 to aid the players in getting the balls into the cups. These deflectors are formed by extending the wall of the cup an inch or more above its upper edge or rim for a distance of about half way around the rim. The cups are positioned on the arms so that the deflectors are disposed inwardly or toward the axis of rotation of the carrier as seen in FIG. 1.

In order to permit of a free rotation of the carrier 12, an anti-friction ball bearing 25 is disposed between it and the supporting shoulder 18. I preferably use a bearing known as Federal #1201 FF made by Federal Mogul Mfg. Co., of Poughkeepsie, New York. The casing of the bearing 25 unit surrounds and has a sliding fit on the reduced upper end of the tubular part 16 of the standard and has a tight fit in a central opening 26 formed in the carrier plate 12, as shown in FIG. 3. The projecting lower portion of the bearing casing is seated in a circular nesting plate 28 disposed beneath the plate 12 and above a circular clamping plate 29, the plates 28 and 29 having circular openings to freely receive the pipe section 16 below the shoulder 18. A second circular stop and clamping plate 30 is disposed on top of the plate 12 and the casing of the bearing 25 and has a central opening of greater diameter than the reduced upper end of the pipe section 16. The several plates are held assembled by two threaded bolts or rods 32 diametrically located and passing through aligned openings in the several plates, nuts 33 being screw threaded on the rods above the upper plate 30 and nuts 34 below the plate 29, as will be seen on reference to FIG. 3.

The means for causing the cup carrying member or plate 12 to be rotated at a constant or uniform speed and for the same number of rotations during each operation of the apparatus, comprises a coarse pitched stationary screw member 35 and a traveling weight or nut member 36 which moves down the screw by gravity and is interconnected with the cup carrier to rotate it. The screw member 35 may be a flat strip of metal twisted into spiral or screw form and it projects upwardly from pipe section 16 in which it is suitably fixed, preferably by welding to the lower end of the screw a cylindrical stem 37 which has a tight fit in the tubular part 16 but is removable therefrom.

The combined nut and weight member 36, as shown in FIGS. 4 and 5, comprises an elongated plate 38 at the center of which is a rectangular slot or opening 39 of slightly larger size than the cross section of the screw rod. The plate 38 thus serves as a nut to be rotated as it moves along the stationary screw 35 but to add to its weight there may be welded on its top around the opening an upright metal tube or pipe section 40 which surrounds the screw. At least one of the ends or arms 42 of the weighted nut member 38 coacts with a fixed part or element on the cup carrier parallel with the screw for the purpose of rotating the carrier. That fixed part may be one of the rods 32 if it is extended upwardly throughout the length of the screw rod. The preferred interconnection between the nut and carrier is illustrated and consists in making the rods 32 from a single metal rod bent upon itself, as at 43, into U-form and screw threading its free lower ends to receive the nuts 33 and 34. Thus the two arms 42 of the nut member are long

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enough to extend between the rods 32 and engage one or the other of them when the nut member rotates. The weight tube 40 may be used as a handle and the loop 43 will prevent the weighted nut member from leaving the screw 35.

When the nut member is turned in one direction it will travel to the top of the screw and when released, its weight will cause it to travel downwardly by gravity and thus rotate the cup holder or carrier 12 at a constant speed and the same number of times. Since the stem 37 of the screw has a tight fit in the top of the standard 16, it and the nut member, will tend to retain the cup carrier on the standard but both may be detached from the standard for compact storage and shipment.

The apparatus may be used for playing various games. The balls are preferably of 2" diameter and made of a soft rubber or rubber-like compound. The player stands about 6 feet from the cup carrier when throwing the balls at the rotating cups. Each player has 4 balls which have different scoring values such as 25, 50, 75 and 100. The balls have different colors for each player, such as blue, green, red and yellow and the cups 13 may be similarly colored. Each player attempts to throw his balls into his cup, that is, the colored cup that corresponds to the color of his balls. The players take turns in throwing their balls and score the value of the balls they get in their cups. After one or more rounds of play the player with the highest score wins the game. Various other rules may be used, but before each player throws, he rotates the weighted nut member in a direction to move it to the top of the screw and he must then throw his 4 balls before that member stops rotating as it reaches the lower end of the screw.

From the foregoing, taken in connection with the accompanying drawing, it will be seen that novel and advantageous provision has been made for carrying out the objects of the invention, and while preferences have been disclosed, attention is invited to the possibility of making variations within the scope of the invention as claimed.

I claim:

1. In a game apparatus of the character set forth, the combination of

- (A) a support,
- (B) a target carrier disposed horizontally and mounted on said support for rotation about a vertical axis, said carrier having at least one ball-receiving target displaced relative to the axis of rotation of the carrier, and

(C) means for periodically rotating said carrier at a constant speed during uniform periods of time, said means being associated with said support and said carrier and comprising

- (a) an upright stationary screw member fixed to said support and disposed at the axis of rotation of said carrier,
- (b) a rotatable nut member to travel on said screw member between its top and bottom, said nut member moving downwardly by gravity at a constant speed, from the beginning to the end of its downward travel, and
- (c) means for imparting the rotary movement of said nut member to said carrier as the latter rotates downwardly on said screw member.

2. In a game apparatus of the character set forth, the combination of

- (A) a support,
- (B) a target carrier disposed horizontally and mounted on said support for rotation about a vertical axis, said carrier having at least one ball-receiving target displaced relative to the axis of rotation of the carrier, and

(C) means for periodically rotating said carrier at a constant speed and during uniform periods of time, said means being associated with said support and said carrier and comprising

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(a) an upright stationary screw member fixed to the top of said support at the axis of rotation of said carrier and extending above the latter,

(b) a rotatable nut member to travel on said screw member between its top and bottom, said nut member moving downwardly by gravity at a constant speed, from the beginning to the end of its downward travel, and

(c) means for imparting the rotary movement of said nut member to said carrier as the latter moves downwardly on said screw member, the last mentioned means including two slidably engaged parts one carried by said nut member and the other carried by said carrier.

3. In a game apparatus of the character set forth, the combination of a support, a target cup carrier mounted on said support for rotation about a vertical axis, at least one upwardly open ball-receiving target cup mounted on an outer portion of said carrier, and means for periodically rotating said carrier at a constant speed and during uniform periods of time, said means comprising a stationary upright screw member mounted on said support and disposed at the axis of rotation of said carrier, a nut member on said screw member to travel downwardly on the latter by gravity and an interconnection between said nut member and said carrier to rotate the latter when said nut member travels on said screw member, said interconnection comprising a rigid element fixed to said carrier and disposed in parallel relation to said screw member, and a laterally projecting arm on said nut member to engage and move said element, said target cup being displaced relative to the axis of rotation of the screw member whereby said target cup will rotate in a circular path.

4. In a game apparatus of the character set forth, the combination of a support including an upright standard, a target cup carrier having at least one ball-receiving target cup and mounted for rotation on the upper end of said standard, an upright stationary screw member supported at the top of said standard, an upright inverted U-shaped member of greater length than said screw member and having parallel rod-like arms disposed in parallel relation to said screw member and on diametrically opposed sides of the same, the curved upper end of said U-shaped member being above and spaced from the upper end of said screw member, means fixing the lower ends of said rod-like arms to said carrier, a nut member to travel on said screw member and having laterally projecting arm portions to engage and move said arms of the U-shaped member, and a tubular weight fixed to the top of said nut member and surrounding said screw member, said target cup being displaced relative to the axis of rotation of said screw member whereby said target cup will rotate in a circular path.

5. The combination of claim 4 in which the upper end of said standard is reduced to provide an annular shoulder, an anti-friction bearing supported on said shoulder of the standard, said carrier including a flat plate having a central opening in which said bearing is disposed, centrally apertured clamp plates disposed above and below said carrier plate to fasten the bearing thereto and provide for the rotatable mounting of the carrier, all of said plates having diametrically arranged and aligned openings to receive the lower ends of said rod-like arms of the U-shaped member, and nuts threaded on said rod-like arms to hold the several plates assembled and provide said means for fixing the lower ends of the rod-like arms to the carrier.

6. In a game apparatus wherein a missile is thrown at a revolving target, the combination of

- (a) an upright support,
- (b) an upright stationary screw member rising from said support,
- (c) a horizontally disposed member carrying a target spaced outwardly from its center,
- (d) means rotatably mounting said target carrying

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member at its center on said upright support and below said screw member,

(e) a rotatable nut member to travel vertically on said screw member,

(f) at least one radially projecting arm on said nut member, 5

(g) and means for constantly rotating said target carrying member as said nut member moves downwardly, such means including an upright rigid element disposed in spaced parallel relation to said screw member and along which said arm is slidable, said element having its lower end fixed to said target carrying member to rotate therewith and revolve 10

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around said screw member, said element being disposed in the path of rotation of said arm, whereby the rotation of said nut member will cause the rotation of said target carrying member.

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