June 16, 1953 E. VAN KINKLE 2,641,932

GOLF GAME AND PRACTICE APPARATUS

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Fig. 1.

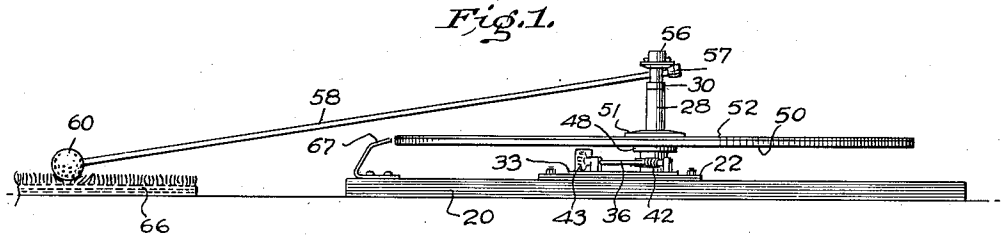


Fig. 2.

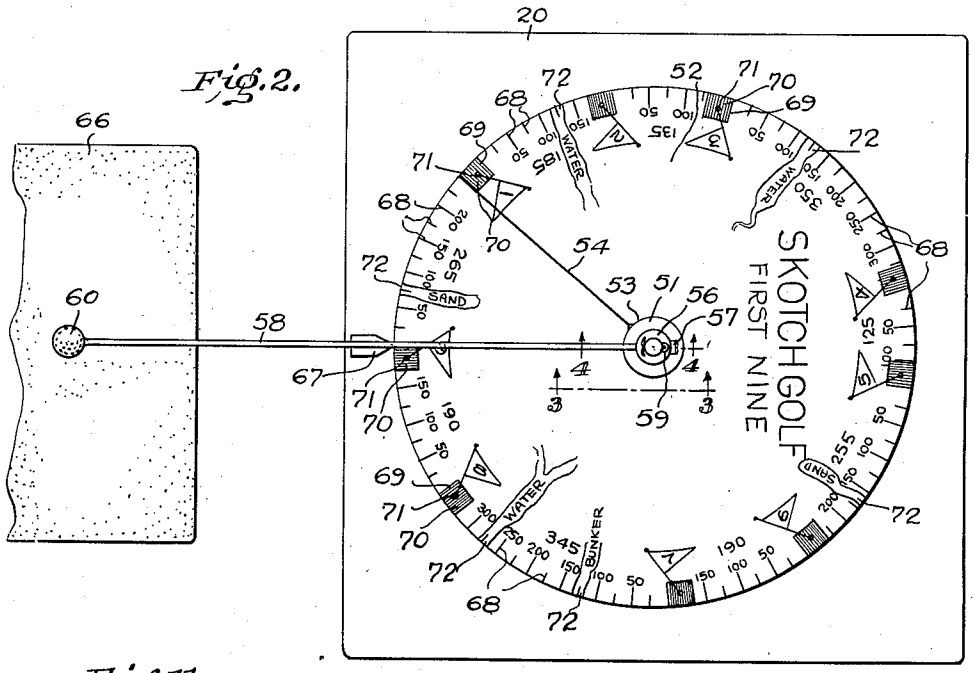


Fig. 11.

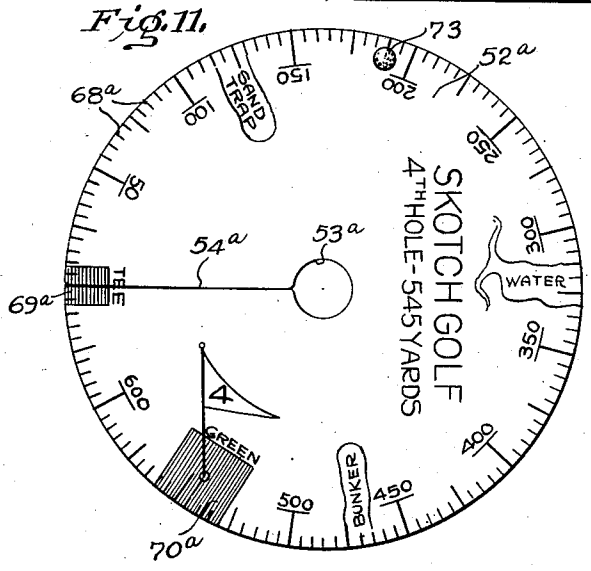
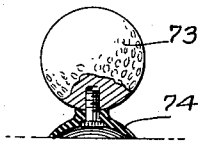


Fig. 10.



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Fig. 3.

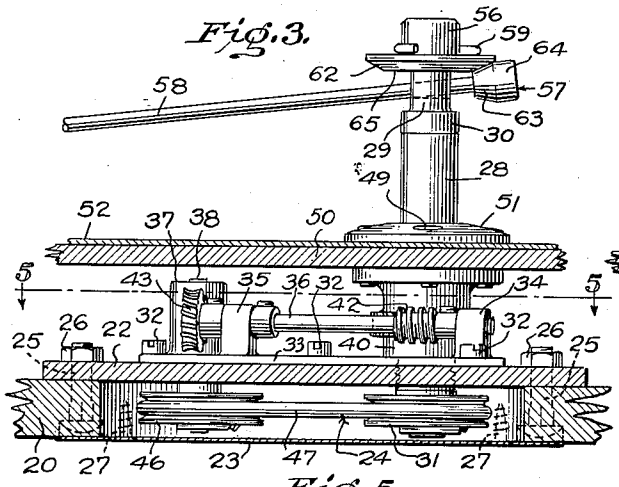


Fig. 4.

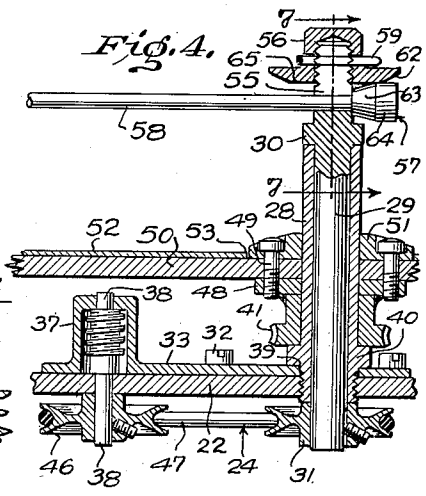


Fig. 5.

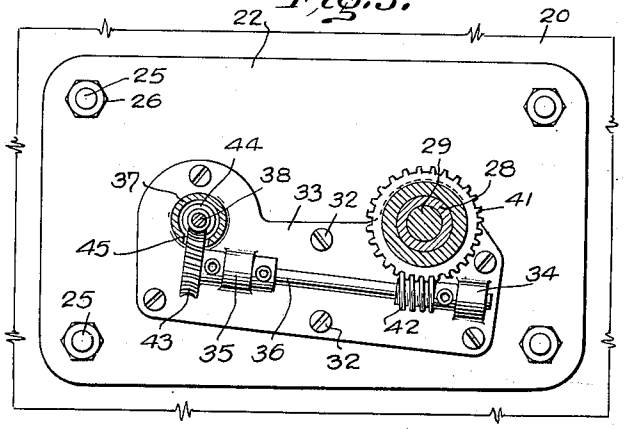


Fig. 7.

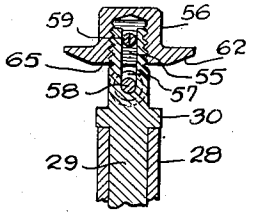


Fig. 8.

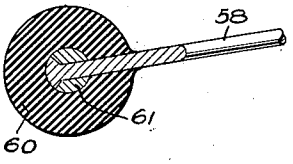


Fig. 6.

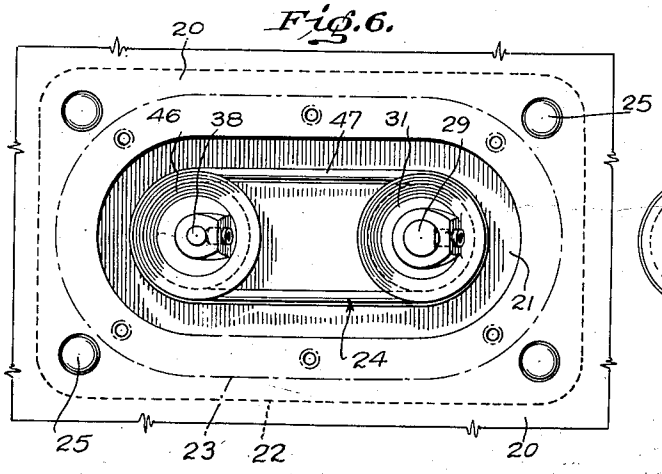
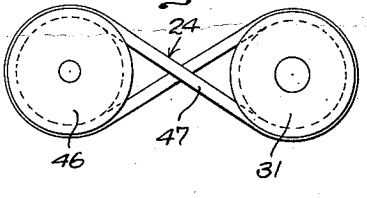


Fig. 9.



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2,641,932

GOLF GAME AND PRACTICE APPARATUS

Edward Van Kinkle, Flint, Mich.

Application September 25, 1950, Serial No. 186,587

6 Claims. (Cl. 73—379)

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This invention relates to games and more particularly to a golf game and practice apparatus.

An object of the invention is to provide a golf game and practice device for enabling the equivalent of a game of golf with a captive ball to be played in restricted areas without restraint as regards the power put into strokes and with indicating means movable in accordance with the force or intensity of impact of a golf club head with the captive ball for recording the distance a normal golf ball would have traveled had it been hit on an ordinary golf links.

Another object of the invention is to provide a game apparatus of the character mentioned which will make it possible to simulate the playing of a complete game of golf, allowing two or more players, while following the rules of the game of golf, to play against each other.

A further object of the invention is to provide an apparatus of the above-indicated character having a relatively large, calibrated disk rotatably turned by a novel and improved speed reduction and shock absorbing mechanism upon the striking of the captive ball connected to said mechanism, said disk having the layout of a hole or holes of a golf course with various hazards thereon and being turned only a portion of a revolution upon rotation of the ball around the disk a number of times.

A still further object of the invention is the provision of a game apparatus as outlined above wherein a rod to which the ball is secured is connected to a vertical, rotatable post in a manner to permit the ball to be lowered and played off of a tee or a surface, and which will automatically raise and hold the ball elevated above the tee or surface while the ball rotates on a horizontal plane with and around the post, said connection also being of a nature which will permit the ball and rod to rotate with the rod as an axis in and with respect to the rotatable post.

It is also an object of the invention to provide a golf game and practice apparatus as previously set forth wherein one of a number of different, calibrated disks representing diversified golf holes may be conveniently placed on and removed from a turntable which is operated by striking the ball.

These, together with various auxiliary features and objects of the invention which will later become apparent as the following description proceeds, are attained by the present invention, a preferred embodiment of which has been illustrated, by way of example only, in the accompanying drawings, wherein:

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Figure 1 is a side elevation of the improved game and practice apparatus;

Figure 2 is a plan view of same;

Figures 3 and 4 are fragmentary vertical sections taken on lines 3—3 and 4—4, respectively, of Figure 2;

Figure 5 is a fragmentary horizontal section taken on line 5—5 of Figure 3;

Figure 6 is a fragmentary bottom plan of the belt drive mechanism with the bottom plate removed;

Figure 7 is a fragmentary vertical section taken on line 7—7 of Figure 4;

Figure 8 is a sectional view showing the manner of attachment of the golf ball to the flexible rod;

Figure 9 is a diagrammatic view of the belt and pulley mechanism shown in Figure 6, differing in that the belt is crossed on itself for retaining the same direction of travel of the turntable when the ball is struck in the opposite direction;

Figure 10 is an elevation and sectional view of an indicator to designate where the disk stopped when more than one person is playing the game; and

Figure 11 is a plan view of a slightly modified form of the invention wherein a separate disk is used for playing each hole.

Referring now more specifically to the accompanying drawings, wherein like numerals designate similar parts throughout the various views, the numeral 20 designates a rectangular base member, preferably constructed of plywood, and of a size and weight for supporting the apparatus in upright position and against movement on a floor or on the ground. An oblong opening 21 through the base 20 substantially centrally thereof and closed by an upper plate 22 and bottom plate 23 houses a belt and pulley arrangement 24. The upper plate 22 is of relatively heavy construction and is attached to the base member 20 by carriage bolts 25 countersunk above the undersurface of the wooden base 20 and extended upwardly and through the upper plate 22 with nuts 26 on their upper ends, while the bottom plate 23 is of light sheet metal and is attached by wood screws 27.

Threaded into the heavy upper plate 22 and extending upwardly in a vertical direction is a tubular bearing member 28 into which is rotatably mounted a post 29 that projects both above and below the member 28, said post having a collar 30 thereon in engagement with the upper end of the tubular member 28 and a pulley 31 detachably fixed thereto and engaging the

lower end of said member 28, which support the post against end movement in the member 28.

Also supported on the upper plate 22 and attached to the upper surface thereof by machine screws 32 is a journal frame 33 provided with a pair of spaced bearings 34 and 35 that rotatably support a horizontal shaft 36 and a housing 37 on which is rotatably supported the upper end of a vertical shaft 38. The attaching plate portion of the journal frame 33 has an opening 39 therein through which the threaded lower end of the tubular member 28 extends and is clamped in engagement with the upper surface of the plate 22 by a collar 40 on said tubular member 28.

Rotatably mounted exteriorly on the tubular member 28 and resting on the collar 40 thereof is a worm gear 41 which meshes with a worm 42 fixed adjacent one end of the shaft 36, while on the opposite end of the shaft 36 is fixed a worm gear 43 meshing with a worm 44 secured to the vertical shaft 38 and located in the housing 37, said housing having an opening 45 in the side thereof through which the worm gear projects. The vertical shaft 38 is also journaled in and extends downwardly through the plate 22 and into the oblong opening 21 in the base member 20 where a pulley 46 of the belt and pulley arrangement 24 is secured thereto. Around the pulleys 46 and 31 is an elastic belt 47, the function and purpose of which will be further set forth as the description proceeds.

Fixed to and arranged above the worm gear 41 that is freely mounted on the tubular member 28 is an annular flange 48 to which is bolted, as at 49, a turntable 50 of considerable diameter, said turntable being preferably formed of thin plywood clamped at its hub portion between a ring member 51 and the annular flange through which the bolts 49 extend. On the upper surface of the turntable 50, any one of a number of different disks 52 representing a golf hole or a number of golf holes may be placed and removed for use of other disks. Each disk has a central hole 53 for engaging around the circumference of the ring member 51 and a slit 54 extending from the hole 53 to the outer edge of the disk for permitting the slipping of the disk over the tubular member 28.

From the foregoing, it can be seen that when the post 29 in the stationary tubular member 28 is rotated a considerable number of complete revolutions, the turntable 50 with a disk 52 thereon will be turned only a portion of a revolution due to the speed reduction gearing interposed between the post and the turntable.

Above the collar 30, the post 29 is slotted downwardly from its upper end, as at 55, and is exteriorly threaded at the upper portion of such slotted area for attaching a threaded hat-shaped member 56 that engages a head 57 on the inner end of a resilient rod 58 that extends through the slot 55. A cotter pin 59 passed through oppositely arranged openings in what would be the crown portion of the hat-shaped member 56 and through the slot 55 of the post prevents threading movement of the hat member 56 on the post and thus securely attaches the member 56 in proper adjusted position on the post.

On the end of the flexible rod opposite to that where the head 57 is arranged is securely attached a ball 60 of a size similar to that of a golf ball. While there is shown in Figure 8 a rubber ball molded over a head 61 that is riveted to the end of the resilient rod 58, it is to be understood that the construction of the ball and its manner of attachment may be of any approved construction so long as the ball is securely attached to the rod.

The under portion of what would be the brim of the hat-shaped member 56 and the inner portion of the head 57 on the resilient rod 58 are provided with tapered annular contacting surfaces 62 and 63, respectively, for elevating the ball end of the flexible rod while the ball is in flight and for permitting the ball end of the rod to be lowered when striking the ball.

When desiring to make a stroke, the ball is teed by moving the ball slightly towards the post 29, thus sliding the rod 58 in the slot 55 and locating the head 57 on said rod in a position where the relationship of the tapered annular surfaces 62 and 63 relative to one another are such that the ball may be lowered as shown in Figures 1 and 3. Upon striking the ball in a direction outwardly of the rotatable direction the ball is compelled to travel, and because of centrifugal force, the ball will pull the head 57 on the rod into abutting engagement with the post, as shown in Figure 4. This will hold the ball end of the resilient rod elevated during the entire rotation of the ball around the post due to the engagement of the rod with the end of the slot 55 and larger cylindrical diameter 64 of the head 57 with the inner flat undersurface 65 of the brim portion of the hat member. When playing indoors, an ordinary coco door mat, such as indicated by the numeral 66 and shown in Figures 1 and 2, may be used on which to tee the ball to prevent marring the surface of the floor with golf club heads; and it is partially because a mat is used that it is essential that the ball be raised and held elevated from the floor during rotation thereof around the post to prevent the ball from contacting the mat and thereby effecting an inaccurate reading of the normal yardage of the stroke.

Mounted on the upper surface at the forward edge of the base member 20 and extending upwardly to approximately the level and adjacent the periphery of the turntable is a pointer 67 for indicating locations marked on the disk 52 according to the amount of turning motion of the disk. The marking on the disk 52 as shown in Figure 2 consists of a layout of nine different golf holes, numbered consecutively and of various lengths with equally spaced graduations 68 on each hole representing the yardage of the different holes, said graduations being measured from the following edge 69 of each green 70 to the cup 71 of the next hole. On certain holes, hazards 72, such as a sand trap, bunker, and water, are illustrated to indicate the lie of a ball should the disk stop with the pointer 67 within the width of the area laid out for a hazard.

The disk 52^a, illustrated in Figure 11 is of the same construction and size as that shown in Figure 2 and has the same central opening and slit which are designated as at 53^a and 54^a, respectively. This disk differs in that the graduations 68^a are calibrated for a much shorter distance around the circumference of the disk, and the disk has the layout of a single golf hole thereon, which, of course, necessitates a different speed reducing mechanism of less reduction than that used with the nine-hole disk. Also, the disk 52^a has a tee 69^a illustrated thereon which is necessarily separate and spaced from the green 70^a due to the difference in the lengths of various holes. Should there be two or more

short holes, the combined length of which is of less distance than that calibrated on the disk, such short holes may be laid out on a single disk, thus reducing the number of disks required to play the game.

When two or more persons are playing the game, and it is not desired for one player to complete a hole before another person plays the same hole, several indicators, such as shown in Figures 10 and 11 and designated by the numeral **73**, may be used to mark the locations where the disk stopped after each stroke of each player, thus permitting the game to be played according to the rules of the game of golf. The indicators may represent golf balls and may be of different colors to distinguish one from another, and each has a small suction cup **74** secured thereto for attaching the indicators at different locations and to prevent accidental movement on the disk. While this type of indicator is shown and described, it is to be understood that any other satisfactory form of indicating means may be used.

As partially stated and previously inferred, a gear reduction mechanism interposed between the turntable **50** and the rod which carries the ball **60** rotates the turntable **50** a portion of a revolution upon the rotation of the ball **60** a number of times around the turntable, and the disk on the turntable has graduations thereon proportional to the distance of circular travel of the ball which is determined by the force or intensity of impact of a golf club head with the ball, the construction and design of parts being such to indicate by the graduations on the disk the distance a normal golf ball would have traveled had it been hit on an ordinary golf links.

While the elastic belt **47** may be arranged either in the customary manner for turning the disk in a counterclockwise direction as shown in Figure 6, or crossed as shown in Figure 9 for turning the disk in the same counterclockwise direction when the ball is to be struck in an opposite direction, thereby permitting the use of the apparatus by either left- or right-hand golfers, said elastic belt also performs the function of a shock absorber for the gear reduction mechanism and turntable structure when the ball is struck.

When using the apparatus to play an imitative game of golf, the disk to be used is placed on the turntable **52** with the pointer **67** at the tee indication of the first hole. The ball is then aligned with the pointer **67** and is moved slightly towards the turntable to permit a lowering of the ball for teeing.

The ball is then struck in the usual manner of playing golf. The force of the stroke causes rotation of the post **29**, and the direction in which the ball is struck produces an outward pull on the rod **58** engaging the surface **64** of the head **57** with the surface **65** on the hat member **56** for holding the ball elevated during its horizontal rotary movement around the turntable. Rotation of the post **29** through the pulley and belt arrangement **24** and gear reduction mechanism moves the turntable in a counterclockwise direction an amount according to the force used in striking the ball and registers the graduations on the disk with the pointer to indicate the length of the shot and the distance to the cup. The player then may play out the hole or may place an indicator **73** on the disk at the location shown by the pointer **67** and then move the disk back on the turntable to the tee indication for the next player to make his drive. After all players have made their drives, the disk can then be moved to the player's indicator **73** which is farthest from the cup for such player to make his next shot. By proceeding in this manner, the entire game of golf may be played.

The same operation as described for playing an imitative game of golf can be carried out in using the apparatus for practice, as the yardage of each individual stroke will be indicated.

In view of the foregoing description taken in conjunction with the accompanying drawings, it is believed that a clear understanding of the construction, operation, and advantages of the device will be quite apparent to those skilled in this art. A more detailed description is accordingly deemed unnecessary.

It is to be understood, however, that even though there is herein shown and described a preferred embodiment of the invention, various changes may be made without departing from the spirit and full intendment of the invention.

What is claimed is:

1. A golf game and practice apparatus comprising a base member, a vertically arranged tubular bearing member on said base member, a post rotatably supported in said tubular bearing member, a turntable rotatably supported by said tubular bearing member exteriorly thereof, a speed reduction mechanism connecting said post to said turntable for rotating said turntable at a slower rate of speed than rotation of said post, a removable disk supported on said turntable with calibrations thereon proportional to the rotation of the post, a rod connected to said post above said turntable and extending laterally beyond the periphery of said disk and turntable, a ball secured to the extended end of said rod, and a pointer on said base aligned with the calibrations on said disk to indicate the movement of the turntable.

2. A golf game and practice apparatus comprising a base member, a vertically arranged tubular bearing member on said base member, a post rotatably supported in said tubular bearing member and projecting through opposite ends thereof, a disk rotatably supported by said tubular bearing member, a pulley secured to the lower end of said post, a rotatably mounted vertical shaft supported by said base member and spaced from said post, a second pulley secured on said vertical shaft, an elastic belt extending around both of said pulleys, a speed reduction mechanism connecting said vertical shaft to said disk for rotating said disk at a slower rate of speed than rotation of said post, said disk having calibrations thereon proportional to the rotation of the post, a laterally extending rod connected adjacent one of its ends to the upper projecting end of said post, a ball secured to the other end of said rod outwardly of the periphery of said disk, and a pointer on said base aligned with the calibrations on said disk to indicate the movement of the disk.

3. A golf game and practice apparatus comprising a base member, a vertically arranged tubular bearing member on said base member, a post rotatably supported in said tubular bearing member and projecting through opposite ends thereof, a turntable rotatably supported by said tubular bearing member exteriorly thereof, a pulley secured to the lower end of said post, a rotatably mounted vertical shaft supported by said base member and spaced from said post, a second pulley secured on said vertical shaft, an elastic belt extending around both of said pulleys, a speed reduction worm gear drive connecting said vertical shaft to said turntable for rotating said turntable at a slower rate of

speed than rotation of said post, a removable disk supported on said turntable with calibrations thereon proportional to the rotation of the post, a laterally extending rod connected adjacent one of its ends to the upper projecting end of said post above said turntable, a ball secured to the other end of said rod outwardly of the periphery of said turntable, and a pointer on said base aligned with the calibrations on said disk to indicate the movement of the turntable.

4. A golf game and practice apparatus comprising a base structure, an upstanding vertically arranged rotatable post supported by said base structure, said post having the upper end thereof vertically slotted, a rod extending laterally through said slotted end of said post and being slidably and rotatably arranged therein, a cap secured to the upper slotted end of said post above said rod, a head on one end of said rod, and a ball on the opposite end of said rod, said head and cap having adjustably arranged contacting surfaces thereon when said rod engages the end of the slot for raising and lowering the ball end of the rod upon sliding movement of said rod in the slot.

5. A golf game and practice apparatus comprising a base structure, an upstanding vertically arranged rotatable post supported by said base structure, said post having the upper end thereof vertically slotted, a rod extending laterally through said slotted end of said post and being slidably and rotatably arranged therein, a cap adjustably threaded on the upper slotted end of said post above said rod, a head on one end of said rod, and a ball on the opposite end of said rod, said head and cap having contacting surfaces thereon when said rod contacts the end of the slot for permitting a lowering of the ball end of the rod upon manual inward sliding movement of the rod through the slot and for raising the ball end of the rod upon an outward pull on the ball end of the rod.

6. A golf game and practice apparatus comprising a base structure, a vertically arranged rotatable post supported by said base structure, a turntable also rotatably supported by said base structure and rotatable on the same axis as said post, a driving mechanism arranged below said turntable and connecting said post to said turntable for rotating said turntable upon rotation of the post, a removable disk supported on said turntable with calibrations thereon proportional to the rotation of the post, a stationary pointer aligned with the calibrations on said disk to indicate movement of the disk, said post projecting upwardly above said turntable and disk and having the upper end thereof vertically slotted, a rod extending laterally through said slotted end of said post and being slidably and rotatably arranged therein, a cap detachably secured to the upper slotted end of said post above said rod, a head on one end of said rod, and a ball on the opposite end of said rod, said head and cap having adjustably arranged contacting surfaces thereon when said rod engages the end of the slot for permitting a lowering of the ball end of the rod by sliding movement of said rod in the slot.

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