Dec. 5, 1950 G. H. SEVERIN 2,532,646

SIMULATED GOLF GAME PROJECTOR WITH FALLING HEAD FOR STRIKING A BALL

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FIG. 1

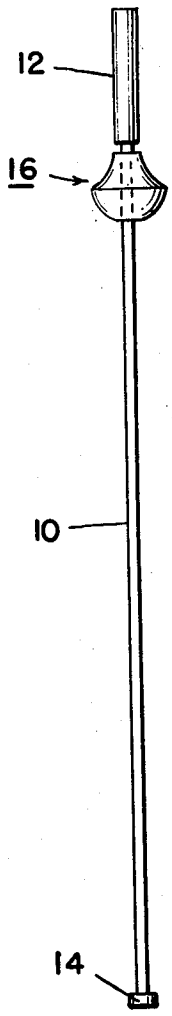


FIG. 2

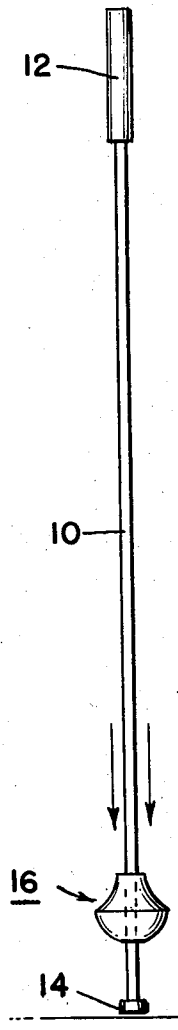


FIG. 3

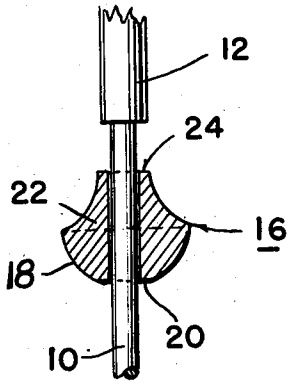


FIG. 4

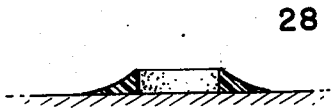
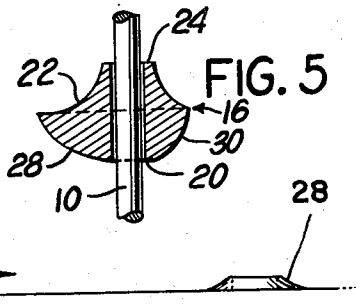


FIG. 5



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SIMULATED GOLF GAME PROJECTOR WITH FALLING HEAD FOR STRIKING A BALL

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9 Claims. (Cl. 273—129)

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This invention relates to a simulated golf game, especially adapted, but not limited, to indoor playing. In certain of its more specific aspects the invention pertains to a novel apparatus or club capable of imparting a variety of motions to a ball, depending on the skill of the player. The combination of club with ball is such that the various types of strokes common to golf can be simulated, including, for example, drives, chip shots and putts.

Many types of "indoor golf" games have been devised in which the object is to move the ball from one point to another much as in the regular game of outdoor golf. The various kinds of apparatus employed in place of the conventional clubs have often suffered from one or more defects which lessen the enjoyment to be obtained by the players. Thus, a mechanically complicated or cumbersome apparatus may be expensive, difficult to use, and easy to break or get out of adjustment. Most of the simpler forms are too limited to permit all of the desired types of shots, so that the ball motion may be exclusively a horizontal roll, or exclusively a pitch into the air. With certain forms of clubs heretofore devised it is simple to give a hard stroke to the ball but difficult to provide the controlled light tap necessary for putting, while the opposite is true with other types of clubs. Too often so much mechanical action is interposed between the motion of the player and the movement of the ball that exceptional sensitivity to and coordination for this type of activity is required of the player—hence the skill necessary for an entertaining game is too difficult of achievement for the average person.

An object of this invention is to provide a simulated golf game.

Another object of the invention is to provide a combination of ball and driving means adapted for relative adjustment of position to allow various desired motions of the ball with respect to the driving means.

A further object is to provide a method of driving a ball in any desired direction and for any desired distance.

Yet another object is to provide a "club," for use in an indoor golf game, of exceptionally simple and inexpensive construction.

Another object of the invention is to provide such a club having great versatility in the character of shots which can be made by its use.

Still another object is to provide means for imparting motion to a ball in an indoor simulated golf game whereby the player effects the said

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motion through the intermediary of a single moving element.

A further object is to permit a player to control the direction and distance of ball motion by his choice of the relative position of driving means and ball and/or the initial elevation of a gravity-moved element of said driving means.

Further objects and advantages of the invention will be apparent from the accompanying disclosure and discussion.

The attached drawing, forming part of this disclosure, illustrates one preferred embodiment of the invention. It is to be understood that variations from the precise form and dimensions shown in the drawing can be made without going beyond the scope of the invention in its broader aspects.

Figure 1 is a front elevation of the "club," with the sliding shooting head approximately in the initial "up" position. Figure 2 is a front elevation of the club together with the ball, with the shooting head shown in its path of downward travel towards the ball for a driving shot, the motion of the head and the motion which the ball will take when struck by the head being indicated by arrows. Figure 3 is a detailed view of the driving head, in vertical cross-section. Figure 4 is a view of a preferred form of "cup" into which the ball is to be shot. Figure 5 is detailed view, in vertical cross-section, of another form of the driving head having two bottom faces of different curvatures. Like elements in the various figures are indicated by like reference numerals.

In the drawing, numeral 10 refers to an elongated shaft, preferably though not necessarily cylindrical, and usually made of a polished wooden dowel. Advantageously, though not necessarily, the shaft 10 has a diameter in the neighborhood of one-half inch, and in the preferred form of the invention this is a $\frac{5}{16}$ inch dowel having a length of 27⅝ inches exclusive of the ends which are imbedded in the handle 12 and floor button 14. Handle 12 is preferably a larger diameter dowel of suitable size for holding by the human hand. This may advantageously be 6 inches long by $\frac{9}{16}$ inch diameter, and has a $\frac{5}{16}$ inch hole drilled axially in its lower portion into which the upper end of shaft 10 is securely fastened. On the lower end of shaft 10 is a stop or floor button, suitably ⅝ or ¾ inch in diameter and ⅜ inch high, and preferably made by cutting the proper sized wood dowel and drilling same with a $\frac{5}{16}$ inch hole for receiving the lower end of shaft 10. If preferred the handle and floor

button may be made integral with the shaft. The overall length of the "club" is in the neighborhood of three feet, and the preferable form is 34 inches, although it may be made longer or shorter to suit individual taste.

Freely sliding on shaft 10 is an annular shooting head 16 having a curved convex lower surface 18. The exact shape of this curved surface may be varied somewhat, so long as a smooth curve is used, but I have found that a shape approximating a segment of a sphere, such as an essentially hemispherical surface, is usually best adapted to the purpose. Thus, a flat surface at an angle of 45 degrees has been tried but was not nearly as satisfactory as a curve. Ordinarily the lowermost portion of surface 18 is cut on a plane perpendicular to the axis to provide a flat bottom 20 for impact on the floor button 14, the diameter of the resulting circular bottom 20 being slightly greater than the diameter of the hole through head 16, say ¾ inch. The vertical hole through head 16 is just enough larger than shaft 10 to allow free sliding movement thereon but without wobbling. The surface of said hole should be polished for best results. The diameter of shooting head 16 at its plane of maximum width is preferably 2 inches, although this may be somewhat greater or smaller if desired. The overall height of sliding head 16 in the preferred form is 1⅞ inches, with the lower half having a 1 inch vertical dimension and the upper half being ⅞ inch tall.

The upper half 22 of shooting head 16 may be of any desired shape, but is preferably symmetrical at least with respect to a vertical plane through the axis. The preferred form is as shown in the drawing, i. e. an axially symmetrical annular concave surface curving inwardly towards the center of the head 16 and corresponding to the surface generated by rotating about the vertical axis a line originating at the top edge of the lower hemisphere 18 and curving smoothly inwardly and upwardly to a point a short distance outward from the central vertical hole through the sliding head 16. It will be noted that the top 24 of the upper half 22 of head 16 in the preferred embodiment shown in the drawing is essentially cylindrical with a flat horizontal top surface, and has exactly the same diameter ($\frac{9}{16}$ inch) as handle 12. Thus when shooting head 16 is in the raised position its top abuts the bottom of handle 12, and being of the same diameter at this point the head 16 can readily be held stationary against the handle 12 by one finger, as will be discussed in more detail hereinbelow. The edges of top 24 and bottom 20 of head 16, bottom and top of handle 12, floor button 14, etc., may be chamferred for better appearance without impairing the utility of these parts of the club. While wood is the preferred material of construction, other materials such as metal or plastic may be substituted for wood for part or all of the components of the club.

The other principal elements of the game are the ball 26, shown in Figure 2, and the cups 28, one of which is shown in Figure 4. The ball I prefer to use is a sphere about 1½ inches in diameter, hollow, made of a thin resilient plastic material such as Celluloid or its equivalent, and has a smooth surface. The balls commonly used in playing "ping-pong" or table tennis are eminently suitable for use with the club having the preferred construction and dimensions just discussed. This type of ball has sufficient elasticity to provide a lively game, and is more effective in making chip shots than heavier and/or essentially non-elastic balls. Its smooth surface makes for uniformity of action for a given impact with the shooting head 16. Such balls with consistently uniform characteristics are readily available commercially. It is to be understood, however, that the invention includes the combination of the club with any other type of ball, such as wood, metal, solid plastic, or the like.

Figure 4 shows one form of floor-ring employed as the "cup" 28 into which he ball is to be shot in as few strokes as possible. The form of the cup may vary widely, and many types have been used heretofore in different simulated golf games. The type shown in Figure 4 is a collar or ring in a simple frusto-conical form. This is readily made in a die-press of a single piece of light sheet metal, say 0.010 inch thick (30–32 gauge) tin plated steel or 0.015 inch aluminum sheet. The size and dimensions should be such as to allow the ball to roll up into the cup easily yet roll off unless the opening is directly in the line of shot. I have found a desirable form to be 5½ inches outside diameter, 3⅜ inches inside diameter, with the total height (height of the edge of the center hole) being $\frac{9}{16}$ inch. A numeral may be painted, stamped, or otherwise placed on each "cup" to indicate the number of the "hole." A set of nine cups, or putting rings, numbered from 1 to 9 inclusive, is suitable for setting up the game for indoor play.

Figure 5 shows a modified driving head 16, provided with two bottom faces 28 and 30 of different curvatures.

Any set of rules for playing the game may be drawn up to suit the players' desires. Ordinarily the game is played essentially the same as regular golf. The course usually is laid out indoors, the putting rings being located in various rooms. Different pieces of furniture are arranged, together with any other desired objects, to act as hazards. Preferably all putting rings are placed on rugs to act as "greens." Nine holes may be placed, and played first in one direction and then in the opposite direction for an 18-hole course. Any number of players may participate. Of course the object is to move the ball from start to finish with the smallest possible number of strokes. Boundaries may be established, and if the ball goes outside same it may be placed on the boundary line for re-play with a one-stroke penalty.

The club and ball are used together as follows: For a drive, the club tip (floor button 14) is placed behind the ball 26, and the driving head 16 is held in the "up" position against the bottom of handle 12. The distance the ball is driven will depend on the nearness of the club tip to the ball, and the angle which the club makes with the floor. If desired, the height from which driving head 16 is released may also be varied in order to affect the force with which the ball is struck. When the player is set he releases the driving head 16 which, accelerated by gravity, slides downward on shaft 10. This slide can be essentially a free fall if the club is perfectly vertical. Impact of head 16 with the ball 26 drives the latter across the floor in a direction away from the club. A stroke is counted each time the head is dropped for hitting the ball, even if the ball should be missed entirely. One of the most effective methods of operating the club is to place the forefinger (of the hand holding the handle) laterally across both the bottom edge of handle 12 and the top edge of head 16 to hold the latter

firmly against the former, and then release the finger for the shot. It is for this reason that I prefer the diameters of these two edges to be essentially the same, as described hereinbefore. If the shaft of the club is caused to lean forward across the ball at an angle of say 20 to 40 degrees from the vertical, the ball on impact is elevated through the air a short distance, thus simulating a chip shot for carrying the ball over objects. For putting or short shots, the club tip is sufficiently spaced from the ball that the driving head barely touches the ball with a very light impact. A close control of the shot is possible in this manner. Alternatively, some players for some of their short shots prefer to leave the sliding head 16 down against the floor button 14 at the bottom of shaft 10, and use the club by laterally swinging it just as an ordinary putter.

Although the invention has been described hereinabove in its embodiment now preferred by me, it is contemplated that variations therefrom may be made with equivalent effects or in some cases different specific effects. By way of non-limiting examples may be mentioned the use of a shaft with non-circular cross-section, i. e. an ellipse, triangle, rectangle, hexagon, etc. A plurality of shafts can also be used, though less preferably, with suitable modification of the sliding head to provide holes or slots or other means for insuring slidable engagement with the shafts. Thus a striking ball could be used within a runway of three equally spaced parallel rods. A hollow vertical tube having a longitudinal slot for most of its length can act as a shaft, with the sliding element sliding within the tube but having a striking head portion extending through the slot. A circular shaft as shown in the drawing can be spirally grooved over part of its length to an extent which will not slow the downward travel of the driving head too much, and the resulting circular component of the head motion will introduce an additional factor into the game; preferably only the upper half of the shaft would be thus formed as a spiral, with a smooth lower half. Of course the sliding head would be internally rifled to correspond to the spiral on the shaft. The sliding driving head may have two or more bottom faces of different curvatures, such as one relatively flat nearly horizontal face and another face sharply curved upward so as to be more vertical than horizontal; with this embodiment the head is preferably prevented from rotating on the shaft, as by use of a non-circular shaft. These and other modifications are comprehended as part of my invention in its broader scope.

I claim:

1. In a ball game, a smooth cylindrical shaft of such length that on placing one end thereof on the floor a standing person can comfortably hold the other end, a stop on said one end, a handle on said other end, an annular striking ring symmetrical with respect to its axis having a hemispherical lower surface and a smooth hole through the center sliding freely on said shaft between said handle and said stop, said stop being sufficiently large to stop the fall of said sliding ring at the bottom of said shaft but sufficiently small to allow the bottom end of said shaft to be placed close enough to a ball on the floor that the ball will be moved by impact of said striking ring when the latter is allowed to fall down the shaft by gravity.

2. A club for use in a simulated golf game which comprises a shaft, a handle on the upper end of said shaft having a bottom larger than

and extending beyond said shaft, a stop on the lower end of said shaft for placing on the floor or ground near a ball to be struck, a striking element mounted on said shaft for free sliding motion thereon between said handle and said stop, a convexly curved lower impact surface on said striking element for striking the ball when the striking element is dropped, and an upper portion of said striking element having a top of the same size and configuration as said bottom of the handle for registering therewith, whereby the player can hold the striking element in the up position against the handle with a single finger across both the bottom of the handle and the top of the striking element for easy release of the latter.

3. A club according to claim 2 wherein said shaft is a cylinder, said handle is an elongated cylinder of larger diameter than said shaft and axially positioned on said shaft, said striking element is an annular ring symmetrical with respect to its axis and axially mounted on said shaft, and said lower impact surface is essentially hemispherical.

4. A club according to claim 3 wherein said stop is a short cylinder of larger diameter than said shaft and axially positioned on said shaft.

5. A club for use in a simulated golf game which comprises a smooth cylindrical wooden shaft having a diameter in the neighborhood of ½ inch, a cylindrical wooden handle of larger diameter and of length suitable for grasping by the hand and having an axial hole in one end thereof into which one end of said shaft is secured, a short cylindrical wooden floor button or stop of larger diameter than said shaft having an axial hole therein into which the other end of said shaft is secured, the total height of said club being in the neighborhood of three feet, a wooden annular striking element having a diameter in the neighborhood of two inches and having a smooth axial hole of diameter slightly larger than said shaft and freely sliding on said shaft between said handle and said floor button without wobble, said striking element being composed of a lower essentially hemispherical half symmetrical about the axis comprising a striking face for impact with a ball when said element is allowed to slide down said shaft and an upper half of a configuration suitable for convenient holding against the handle in the up position and release therefrom, the bottom of said lower hemispherical half being cut plane perpendicular to the axis for resting on the top of said floor button in the down position.

6. A game device comprising a shaft for positioning near a ball to be projected, a striking ring slidably mounted on said shaft and having a convex lower striking surface, a handle on one end of said shaft, a stop member for said ring on the other end of said shaft so located that when the stop end of said shaft is placed beside said ball on a surface and said striking ring is allowed to slide downward on said shaft to said stop, said ball is struck by said ring and a lateral motion thereby imparted to said ball.

7. A game according to claim 6 wherein said striking ring has at least two differently shaped lower striking surfaces.

8. In a ball game wherein a ball is to be projected, the improvement comprising a striking element for moving said ball on impact therewith, and an elongated member slidably engaged by said striking element in such manner that when the lower end of said elongated member is placed

on a surface adjacent said ball resting on said surface and said striking element allowed to slide down the said member by gravity the ball is struck by said element and thereby moved away from the striking element and elongated member.

9. A game device comprising a shaft, a striking element slidably engaged with said shaft and having a convex lower striking surface, a stop member for said striking element attached to one end of said shaft of such size and so located that when the stop end of said shaft is rested on a surface beside a ball having a diameter in the neighborhood of 1½ inches and said striking element is allowed to slide down said shaft to said

stop said ball is struck by said element and a lateral motion thereby imparted to said ball.

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