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GOLF PUTTER

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This invention relates to golf clubs and, more particularly, to an improved pendulum-type putter.

It has been stated by some golf experts that one-half of the game of golfing is putting. The basis of this statement is that in the plan for a typical 18-hole, 72-stroke par golf course, provision is made for about 36 putts. Thus, it is apparent that even a relatively minor improvement in one's putting skill should result in a substantially improved golf score.

Of major importance in improving the golfer's putting ability and skill is the selection of a putter. Basically, there are three types of putters; mallet, blade and center-shafted putters. The mallet head putter is commonly made of aluminum and is often provided with a brass insert. The blade putter consists essentially of a shaft which has a blade of hard steel or steel alloy affixed to the lower end thereof. The shaft of the center-shafted putter runs and is affixed to the center of the club head. The center-shafted putter has less torsional tendencies than the mallet and blade type putters because of its center balance.

Ordinarily in using putters of the types aforementioned, the golfer assumes a stance over the ball with his feet positioned generally perpendicular to the line of flight and with an imaginary line passing through the tips of his shoes lying generally parallel to the line of flight of the ball. The golfer bends slightly over the ball and then strokes the ball toward the cup.

It has been found relatively difficult for the novice and sometimes for the more practiced golfer to line up the putt. When the golfer views the ball, then his eye is removed from the line of flight upon which the ball is to be propelled and accordingly there often results inaccuracies in putting. Further, when using conventional putters, there is often a tendency to pull with one hand or the other and thereby misdirect the ball.

A new innovation in putters is the croquet-type putter which enables the player to putt the ball by swinging the putter between his legs. Heretofore, such putters have comprised a shaft having a small blade affixed at the lower end thereof. To our knowledge, previous croquet-type putters have not had proper balance or feel due to inadequacies in their design and construction. Thus, little use has been made of croquet-type putters, notwithstanding their inherent advantage over more conventional putters of permitting better alignment of the stroke, for in use the golfer is facing directly toward the cup.

An important object of the present invention is to provide a novel pendulum putter having a curved shaft and a sole plate or head affixed to the lower end of the shaft in such manner as to provide a true pendulum feel to the putting action.

Another object of the present invention is to provide an improved pendulum putter wherein the shaft has a flattened surface on the front thereof squared with respect to the line of flight of the ball and the sole plate affixed to the lower end of the curved shaft has a planar striking face thereon, which lies substantially at right angles to the line of flight of the ball.

A further object of the present invention is to provide an improved pendulum putter wherein the intermediate portion of the shaft is curved and is affixed to the sole plate at the rear thereof so as to provide for increased lever action and wherein indicia are provided on the

head of the sole plate so as to permit alignment of the stroke with the line of flight.

Yet another object of this invention is to provide a novel head for a pendulum putter. These and other objects of the invention will be made more apparent hereafter.

The attached drawing illustrates a preferred embodiment of my invention, in which:

FIGURE 1 is a perspective view of a precision pendulum putter embodying the principles of the present invention and illustrating the position of the pendulum putter as it is addressed to the golf ball;

FIGURE 2 is a cross-sectional view of the handle portion of the putter shaft taken generally on line 2-2 of FIGURE 1;

FIGURE 3 is a side view on a reduced scale of the improved pendulum putter of the present invention;

FIGURE 4 is a cross-sectional view of the putter taken generally along the line 4-4 of FIGURE 3;

FIGURE 5 is a cross-sectional view of the sole plate or head of the putter taken generally on line 5-5 of FIGURE 4; and

FIGURE 6, is a front view of the putter looking toward the striking face of the sole plate or head, with the shaft being broken away.

Referring to FIGURES 1, 2 and 3, it is seen that our novel putter 10 comprises an elongated shaft of generally tubular construction. The shaft may be made from metal, such as aluminum, or glass fiber, or like material. Defined at the upper end of shaft 10 is a handle portion 12. A strip of leather or plastic 11 helically or spirally wound upon the upper end of the shaft and suitably affixed to the shaft forms a hand grip. The front face 13 of the handle portion is flattened and is generally planar to permit better gripping of the shaft and to facilitate alignment of the putter.

The intermediate portion 16 of the shaft 10 is curved or bent rearwardly and has rigidly affixed at its lower end 17, a sole plate or head 14 of substantial mass as compared to the mass of the golf ball to be propelled thereby. The shaft is secured to the head 14 along the center line thereof so that the weight of the head is evenly distributed on either side of the center line, thus providing a balanced putter.

The configuration of our novel head or sole plate 14 is best seen in FIGURES 4, 5 and 6. In a presently preferred embodiment of the invention, the head 14 is generally semicircular in horizontal cross section and is provided with an extended portion 15 at the rear thereof to provide for affixation of the shaft 10 to the head 14. It will be understood the head shape may be modified without departing from the spirit of the invention. The head 14 may be suitably formed as a block of metal, as for example, aluminum, brass, or steel, or may be formed from the suitable block having an inset striking face formed from metal. At the front, there is formed a planar striking face 18. The width of the striking face is several times the diameter of a golf ball. On the top of the sole plate 14, there is provided elongated alignment indicia 20 for assisting the golfer in aligning the club with the line of flight of the ball. Such indicia may comprise a line painted on the head but preferably comprises a groove 20 which is painted in a color which contrasts with the color of the head 14. This arrangement provides for better visibility of the indicia and is durable and will not readily be worn away. The groove 20 is perpendicular to the striking face 18 and generally indicates the projected line of stroke.

The lower end 17 of shaft 10 is rigidly affixed to the opening 24 in the projecting portion 15 at the rear of the head 14. The shaft may be held in the opening 24

by a force fit or may be connected to the head 14 by a suitable adhesive or bonding process compatible with the materials used. It will be noted that the end 17 of shaft 10 is substantially parallel with striking face 18 of head 14.

By reference to FIGURE 3, it will be seen that the axis of the handle means 12 extends through the club head 14 forward of the center of gravity of the club head and preferably extends through the lower portion of the striking face 18.

The bottom of the sole plate 14 is provided with a configuration which has been found to be particularly advantageous. The lower front edge of the sole plate 14 is cut off or rounded as indicated generally at 26 to keep the club from stubbing the turf or green if the head of the club is held too close to the ground. The lower rear edge of the head 14 has been curved or rounded as indicated generally at 28 to prevent the golfer from dragging the putter on the green after initial contact with the ball. It is to be noted that the ratio of the radius of curvature of the curved surface 28 to the curved surface 26 is preferably about two to one. In one presently preferred form of the invention, the radius of curvature of the curved surface 26 is about $\frac{1}{4}$ of an inch, whereas the radius of curvature of the curved surface 28 is about $\frac{1}{2}$ inch.

To use the putter of the present invention the golfer assumes a stance behind the ball and in line with the flight of the ball toward the cup and with his body squared toward the cup. The handle portion 12 of the putter 10 is gripped in such manner that the thumbs are positioned on the flattened surface 13 and the flattened surface is maintained generally at right angles to the proposed line of stroke when viewed from above. Similarly, the striking face 18 of the head is maintained perpendicular to the predetermined line of stroke. The cooperation and orientation of the flattened surface 13 of the handle portion of the shaft 10 and the striking face 18 of the head 14, coupled with the indicia provided on the head of the putter provides for accurate alignment of the putter with the projected line of flight of the ball and facilitates execution of a selected stroke.

By virtue of the rearwardly curved configuration of the lower end of the shaft, the alignment indicia 20 on the top surface of the head is visible to the golfer at all times as he addresses the ball and during the downswing of the stroke. The affixation of the shaft in the opening 24 at the rear of the head 14 provides for a better lever action of the putter and for the most part, the work of actually propelling the ball can be left to the putter. The stroke can be executed with a tapping action and there is little tendency for the head 14 to twist upon contact with the ball, even if the ball is not struck in the center of the face 18. Stabbing of the ball and its resulting inaccuracies of putting can be greatly eliminated by use of the present invention.

The golf novice can readily be taught the fundamentals of the use of the improved pendulum putter of this invention and it has been effectively demonstrated in use that the club can be used to reduce the number of putts required by a golfer and to improve the consistency

of his putting. This is true even for the more experienced player.

The pendulum putter of the present invention is constructed and designed to provide for a true pendulum feel and pendulum action during the stroke. The handle portion of the shaft has a flattened front face which lies generally at right angles to the line of flight of the ball when viewed from above. The plane of the striking face of the head of the putter is generally perpendicular to the line of flight of the ball. Indicia are provided on the head of the club for facilitating alignment of the putter as the golfer addresses the ball. These features combine to produce a golf club which is highly accurate in use and which can be readily utilized by all golfers to materially improve their putting game.

While we have described a preferred embodiment of our invention, it will be understood our invention is not limited thereto since it may be otherwise embodied in the scope of the following claims.

I claim:

1. A precision pendulum putter comprising a shaft having an elongated handle portion at the upper end thereof, a head affixed to the lower end of said shaft, the front face of said handle portion being flattened, said head having a planar striking face on the front thereof and being elongated rearwardly from said striking face, the intermediate portion of said shaft being curved rearwardly so that the axis of the handle portion of the shaft extends through the head in front of the center of gravity thereof, alignment indicia provided on the top of the head and lying in a plane which extends generally perpendicular to the plane of the flattened front face of the handle portion of the shaft and to the planar striking face of the head for facilitating alignment of the putter.

2. A precision pendulum putter as in claim 1 wherein the lower front surface of the head is rounded for reducing the likelihood of the putter stubbing the ground on the forward portion of the strike.

3. A precision pendulum putter as in claim 2 wherein said head has the lower rear surface thereof rounded for minimizing the opportunity for the putter to drag.

4. A precision pendulum putter as in claim 3 wherein the radius of curvature of the rounded lower front surface of the head is one-half the radius of curvature of the lower rear portion of the head.

5. A precision pendulum putter as in claim 1 wherein the shaft is secured adjacent the rear of the head for facilitating the lever action of the putter during the stroke.

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