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2,995,375

GOLF CLUB

Filed Oct. 8, 1959

FIG. 1

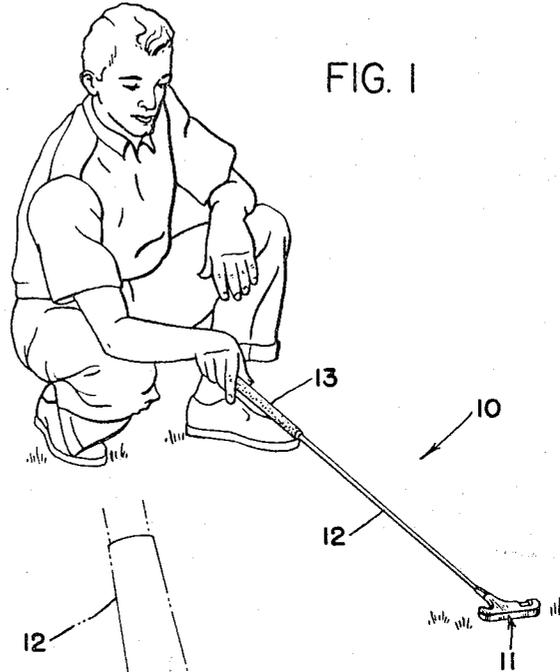


FIG. 2

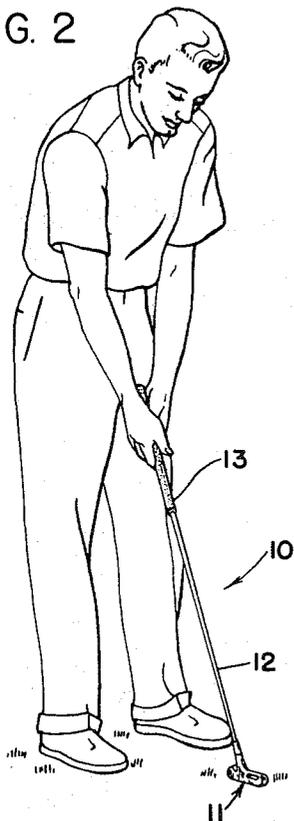


FIG. 3

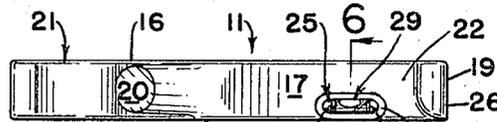
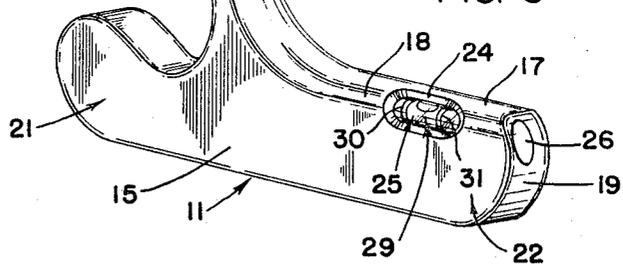


FIG. 4

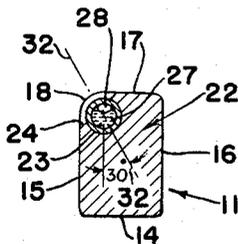
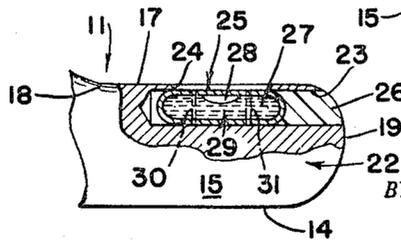


FIG. 5



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The present invention relates generally to a golf club. More particularly, the invention relates to an improved putter whereby the golfer can determine and compensate for the slope of the green. Specifically, the present invention relates to a putter which, by means of an incorporated level, adapted to be used prior the stroke to determine the slope of the green between the cup and the ball and then during the initial stages of the stroke guide the linksman into a level club head position for the final swing.

The human eye is grossly subject to deception. One of the most difficult of ocular perceptions is the determination of slight slope from level. When such a determination is attempted by the eye making comparisons and without a reference plane, the resolution of what is level is virtually impossible. Particularly in the rolling terrain of the golf course are such reference planes unavailable. The orientation, then, can only be satisfactorily accomplished by a mechanical aid.

The non-golfer may wonder at the importance of determining the slope of the green, thinking that merely the proper alignment between the cup and the ball via the swing of the club will send the ball straight to the cup and in. However, this is not true where the slope is lateral of the line of travel of the ball. The gravitational effect on the ball during its course of travel to the cup tends to make it roll down the slope. Since there is a constant force acting to so displace the ball from its straight line course, the length of time the ball is en route will also be determinative of the magnitude of the displacement. This leads to the conclusion that the drifting of the ball from its straight line course can be minimized by speeding up the travel of the ball from its lay to the cup, i.e., hitting the ball harder to make it travel faster. But this has three disadvantages: (1) the ball may, because of its speed, travel right over the mouth of the cup and not drop; (2) accuracy is impaired by too vigorous a swing; and (3) in the event of a miss the speed will make the subsequent lie also be a substantial distance from the cup and no advantage will have been gained from the stroke.

From these considerations the pros agree that an easy putt, making the swing only hard enough to get the ball to the cup, is one of the tenets of a good game. This eases the ball toward the cup and should the putt be missed the lie will be in close. An easy stroke also permits greater accuracy. Only the amount of drift is increased by an easy putt. This is compensated by playing the slope and always assuming the same form for and during the shot. Form is thought of generally as comprising the foot stance—relative to the shoulders and location of the ball, grip, shoulder movement, eye on the ball, etc. However, one subtle element of form which is difficult to consistently assume and which is extremely important to putting technique is the angle the club shaft makes with the arms. Not only does this vitally affect the actual direction of the effective swing of the club, but it also affects the angle of contact of the club head with the ball, which can impart an undesired secondary rotation to the ball in travel. Such a secondary rotation, English, frictionally affects the direction of travel and, when unwelcome, can completely negate the compensatory technique employed to counteract slope drift.

Uniformity of arm to shaft disposition can be assured by maintaining the club head in a definite referential dis-

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position. Many golfers attempt such an orientation by conforming the base of the club head to the turf and then tightening their grip. This, however, adds error equivalent to the amount of the slope of the green and the direction of the slope.

It is, therefore, an object of the present invention to provide a golf club which is adapted to assist the golfer in playing the slope of the green.

It is a further object of the present invention to provide a golf putter whereby the golfer can determine the slope of the green.

It is a further object of the present invention to provide a golf club which assists the golfer in assuming a proper form.

It is a still further object of the present invention to provide a golf club which can be accurately oriented to a referential plane and be so maintained through the initial stage of the stroke.

These and other objects which will become apparent to the reader of the following specification are accomplished by means hereinafter described and claimed.

One preferred embodiment is shown by way of example in the accompanying drawings and hereinafter described in detail without attempting to show all of the various forms and modifications in which the invention might be embodied; the invention being measured by the scope of the appended claims and not by the exemplary details of the specification.

Referring to the drawings:

FIG. 1 is a perspective view of a golfer using the improved putter in sighting position to determine the slope of the green;

FIG. 2 is a perspective view of a golfer using the improved putter in addressing position to assist his assumption of the proper form;

FIG. 3 is a perspective view of the head of the improved putter;

FIG. 4 is a plan view of the head of the improved putter;

FIG. 5 is an enlarged partial elevation of the head partially broken away;

FIG. 6 is a sectional view taken substantially on line 6-6 in FIG. 4.

In general, after the approach shot places the ball on the green, the golfer must study the lay and determine distance, direction and slope or variation thereof between the ball and the cup. Using the improved putter of the invention, the determination of slope is no longer an uncertainty subject to the vagary of human perception. The improved putter is held loosely by the handle, which is elevated approximately 30° from the green, as hereinafter more fully explained, and the club head is permitted to rest longitudinally on the ground transverse an imaginary line joining the ball and the cup. Then the grip is tightened and the club is rotated about the axis of the shaft until the leveling device centers. As viewed from the eye of the golfer at the handle end of the shaft, if the shaft is rotated clockwise the right end of the club head is kept in contact with the green, and if the shaft is rotated counterclockwise the left end of the club head is kept in contact with the green. The angle formed between the green and the club head represents the slope of the green from level. The golfer will probably make several slope determinations along the line of travel intermediate the ball and the cup to ascertain whether the slope is constant or varied. This use of the improved putter, indicated generally by numeral 10, is best seen in FIG. 1.

During the actual stroke the impact with which the club strikes the ball is determined by the distance and the condition of the green. However, the summation of the information regarding distance to the cup and inter-

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mediate slope combined with the golfer's experience establishes an aiming point, a false cup, toward which he aims the ball. Putting the ball toward a properly selected aiming point will compensate for the drift caused by the slope of the green and increase putting proficiency.

Having weighed the variables and decided on an aiming point and impact, the golfer assumes his putting stance (see FIG. 2). Here again the improved putter supplies another welcomed constant. By centering the leveling device associated with the putter, the club head is brought to level—the referential plane—and the club itself then is brought into a uniform position for each putt. To hold, or grip, is adjusted to easily maintain the level position and aim is taken. As the backstroke starts the leveling device should remain centered. If it does not, the hold is adjusted until it does, and then the stroke is completed.

Referring now to the drawings, the improved putter, indicated generally by the numeral 10, comprises a head 11 to which is attached shaft 12. A handle grip 13 is mounted on the terminal portion of shaft 12 opposite head 11. As best seen in FIG. 6, the head 11 is substantially rectangular in cross section, having a base 14, sides 15 and 16 and top 17. It is preferred that the surfaces presented by sides 15 and 16, base 14 and top 17 intersect at arcuately rounded right angle corners. As best seen in FIG. 3, edge 18 extends from the rounded front face 19 to the circularly constructed shaft connector 20 which angularly protrudes from the top 17. The shaft connector 20 is preferably placed rearwardly of front face 19 approximately $\frac{2}{3}$ the overall longitudinal dimension. This permits the weight of the rear portion 21 of head 11 to partially counterbalance the front portion 22 and lend balance to the weight distribution of putter 10. As shown in FIG. 5, a bore 23 extends longitudinally rearwardly in portion 22 from face 19 and is medially provided with a cut away window or open oblong aperture 24 located along edge 18. The axis of bore 23 is parallel to base 14 and side 15. A level tube 25 is fitted into bore 23 and retained by a sealant 26, any suitable and well known moisture resistant mastic or plastic putty.

The level tube 25 comprises a closed tube 25 which is slightly arcuate between its ends and substantially filled with a suitable liquid media indicated at 27, such as alcohol, the concave meniscus of which defines a bubble 28 which is freely movable. The central portion 29 of tube 25 is marked off by encircling lines 30 and 31. Note, however, that tube 25 could as easily contain a movable steel ball (not shown) in a dampening fluid and be as satisfactory.

Since, when the bubble 28 lies between lines 30 and 31, i.e., it is centered, the tangent to the arc of the tube at the midpoint of portion 29 between line 30 and 31 is truly horizontal, it is important in what position level tube 25 is placed in bore 23. This is especially so since the level 25 must be used in two positions of the club, as in FIGS. 1 and 2. Were the level 25 to be used solely when club 10 is in a position similar to that shown in FIG. 1, the plane of the leveling arc of level 25 should lie parallel to top 17. On the other hand, were the level

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25 to be used solely when club 10 is in a position similar to that shown in FIG. 2, the plane of the leveling arc of level 25 should lie parallel to side 15. Since neither of these level tube orientations would give satisfactory results for both positions of club 10, it has been found that the most satisfactory results are obtained when the plane of the leveling arc of level tube 25 is levorotated approximately 30° from a position parallel to side 15. That is, when the plane lies in a position indicated generally by chain line 32—32. To obtain the full advantage of this positioning, the handle (12—13) is raised the 30° hereinbefore noted when used in the position shown in FIG. 1.

It should now be apparent that the improved putter 10 not only provides a means for the golfer to determine the slope of the green, but also assists him in assuming the proper form for the stance and the swing to aid the playing of the slope.

What is claimed is:

1. A golf club for putting which can be leveled in both an addressing and sighting position comprising, a shaft, a handle grip on one end of said shaft and a head on the other end of said shaft, said head comprising, a base surface and top surface, two side surfaces interconnecting said top and base surfaces, the first of said side surfaces being a ball contacting surface, a bore extending parallel and adjacent the intersection of said second side surface and said top surface, a window in said intersection to provide visual communication with said bore, an arcuate spirit level seated in said bore, the arc of said spirit level angularly inclined to both said side ball engaging surface and said base surface for leveling the head either when said base surface is in proximity to the ground or when said side ball contacting surface is in proximity to the ground.

2. A golf club for putting which can be leveled in both an addressing and sighting position comprising, a shaft, a handle grip on one end of said shaft and a head on the other end of said shaft, said head comprising, a base surface and top surface, two side surfaces interconnecting said top and base surfaces, the first of said side surfaces being a ball contacting surface, a bore extending parallel and adjacent the intersection of said second side surface and said top surface, an open oblong aperture through said intersection to provide visual communication with said bore, an arcuate spirit level seated in said bore, the arc of said spirit level rotated approximately 30° from perpendicularity with said base surface to provide for leveling said head in both addressing and sighting positions.

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