

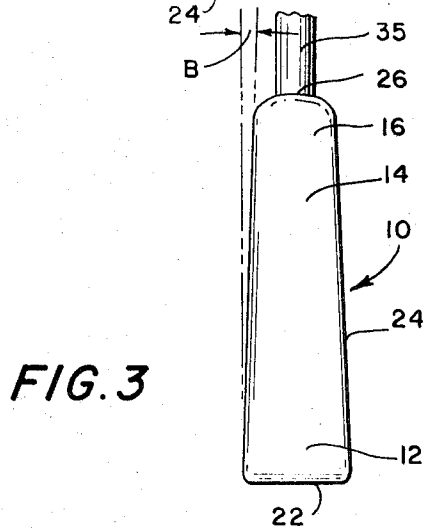
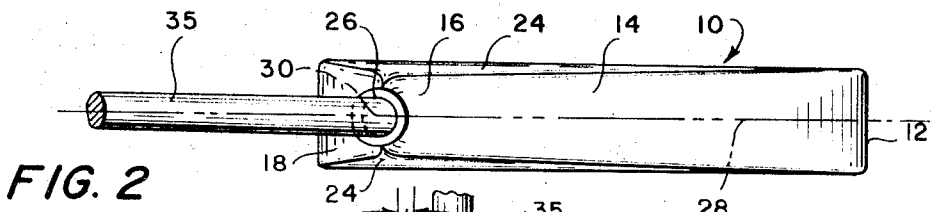
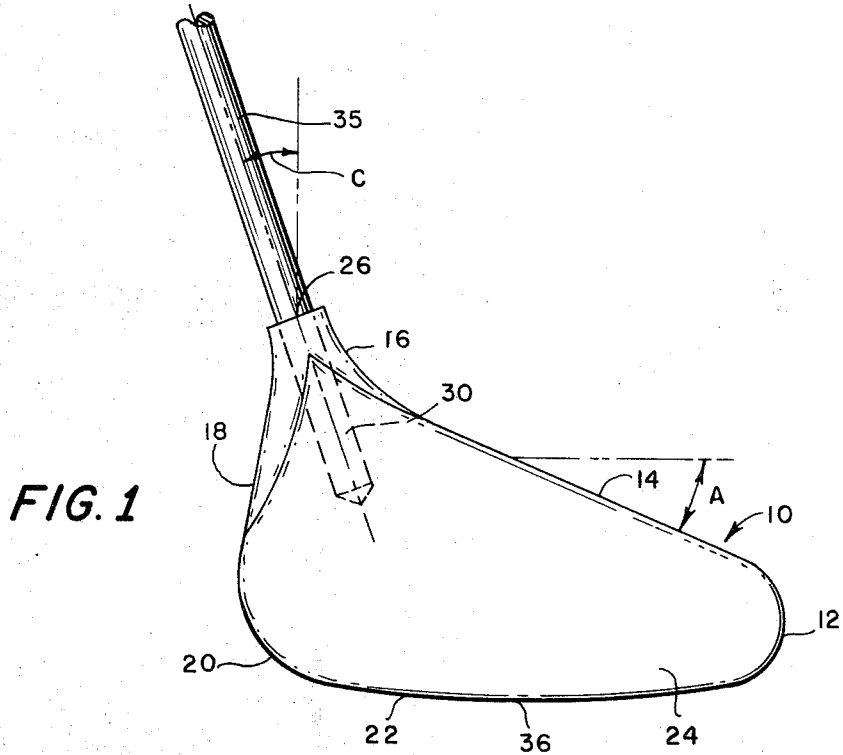
March 2, 1971

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3,567,227

GOLF PUTTER WITH TWO TRIANGULARLY SHAPED HITTING FACES

Filed Aug. 13, 1968



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GOLF PUTTER WITH TWO TRIANGULARLY SHAPED HITTING FACES

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Filed Aug. 13, 1968, Ser. No. 752,246

Int. Cl. A63b 53/04

U.S. Cl. 273-168

10 Claims

ABSTRACT OF THE DISCLOSURE

A golf putter head is symmetrical about its vertical center plane and has generally triangularly shaped side faces, defined generally by a rounded sole portion, a sloped top surface, and a heel and back portion. The included angle between the shaft axis and the top portion is approximately 132°, and the angle between the top portion and a plane tangential to the curved sole portion in the general area of the center of the sole portion is approximately 22°. The heel and toe are rounded. The side faces are flat and slightly sloped to give a slight lofting tendency to the ball. The location of the shaft and the shape of the head are such as to give good results if the ball is hit on almost any area of the hitting face, thus minimizing the importance of striking the ball accurately with the "sweet spot" of the club. The design of the head gives a better perspective to the user when looking down from the putting position, facilitates use by different persons at different angles and distances, eliminates or minimizes the importance of a sweet spot, and tends to eliminate bounce in the ball when hit.

FIELD OF THE INVENTION

The present invention relates generally to golf clubs, and more particularly to an improved club of the type commonly known as a putter.

BACKGROUND OF THE INVENTION

The principal reason for using a putter is, of course, the attainment of maximum possible directional accuracy in the course of travel of the ball. Toward contributing to the achievement of this end, a putter should be designed so as to facilitate accurate alignment by the user of the club, the ball and the hole, should minimize the importance of striking the ball precisely with the sweet spot of the putter head, should tend to eliminate bounce in the travel of the ball during rolling, and should be sufficiently versatile as to permit its use by persons of different sizes and at different angles or distances from the user. This invention is intended to provide an improved putter meeting this description.

With many, if not all, presently available putters, advertising claims to the contrary, it usually has been necessary to determine the exact spot on the putter face with which to strike the ball in order to obtain accuracy. This spot is commonly referred to among golfers as the "sweet spot." Many solutions to the sweet spot problem have been directed toward providing a sweet spot index, that is, some indicia which facilitate location of the sweet spot. On the other hand, this invention aims toward enlarging the sweet spot, that is, eliminating or minimizing its importance.

Again, many, if not all, presently available putters are

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somewhat lacking in versatility in that they should be used in a precise manner, and do not provide for accurate use by persons of different sizes or persons of the same size who may wish to hold the putter at different angles or distances. These putters have flat sole portions which should remain parallel to the ground for maximum accuracy. Since the angle of the shaft, therefore, cannot be altered with respect to the ground, the golfer wanting to vary the distance to the ball can only change the location of his grip and the position of his arms, thereby leading to the uncomfortable position of having to hold his arms either too far away from or too close to his body in order to maintain the club in its unique intended orientation.

Finally, and this involves perhaps a subjective area which does not lend itself to precise analysis or explanation, most present putters do not facilitate accurate alignment by the user, that is, the perspective which they present to one looking down on the putter head from the putting position does not contribute to accuracy of alignment of the putter head with the ball and the cup.

SUMMARY OF THE INVENTION

It is generally the purpose of this invention to provide a new and improved golf putter which is more accurate and more versatile than those that are presently available and known to me. Generally this invention provides a putter of an improved design which gives a better perspective when looking down on the club from the putting position, thus allowing one to line up more accurately with the target, which minimizes or eliminates the importance of a sweet spot or sweet spot index, which has a versatility previously unavailable in putters, and which causes the stroked ball to roll in such a manner as to eliminate or at least reduce the tendency to bounce. Thus, in my improved putter, the shape of the head and the angle from the shaft to the toe of the putter head gives a better perspective when looking down on the club from the putting position, thus allowing one to line up more accurately. The more balanced head and the location of the shaft whereby it is nearly centered in the head for better weight distribution and balance give good results if the ball is hit on almost any area of the face, rendering it relatively unimportant that the ball be struck at a particular sweet spot. The rounded sole, and to a lesser extent the rounded heel and toe, provide for accurate use by any sized person who may wish to hold the club at different angles or distances. The putter is symmetrical about its longitudinal center line, providing for ambidextrous use, and the striking faces are flat but sloped with a slight loft to cause the ball to roll in such a manner as to eliminate or reduce bounce. The design gives a generally larger hitting surface, and the shape of the head and the fact that it is one solid piece, allow it to be made from a multitude of materials, such as plastics, epoxies, and aluminum alloys. Finally, and speaking of an intangible which can be appreciated fully only by golfers, my improved putter has a better "feel" and balance than those of which I am aware.

Other objects, features and advantages of my invention will become apparent upon consideration of the ensuing detailed description of a preferred embodiment of the invention, taken in conjunction with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a side elevational view of the club head;
 FIG. 2 is a top plan view of the club head; and
 FIG. 3 is a front elevational view of the club head from the toe end.

DESCRIPTION OF THE PREFERRED EMBODIMENT

In accordance with the preferred embodiment of the present invention, FIG. 1 shows a golf putter head 10 having a toe portion 12, a top portion 14, a hosel 16, a back portion 18, a heel 20, a sole portion 22, and a face 24. As seen in FIG. 1, the face of the club is of generally triangular configuration, although the toe and the heel are well rounded.

The upper one-eighth of the head starting downward from the top of the shaft opening 26 is considered the hosel 16, from which shaft 35 extends upwardly. Below the hosel, the top surface 14 runs downwardly toward the toe portion 12 with a pronounced slope indicated by the angle A. With the club oriented as shown in FIG. 1, angle A is measured from the horizontal, and has a preferred value of 22° and a range of approximately 20°–25°. Since there is no precise correct orientation of the club, an angle measured from the horizontal, although meaningful, could perhaps be measured slightly differently by different persons. A more reliable measurement of the slope of top surface 14 can be designated by the included angle between the shaft 35 and the top surface 14. As will become clearer from the subsequent description of specific dimensional details of the illustrated embodiment, the included angle between the axis of shaft 35 and top portion 14 preferably is about 132°, and can range between approximately 125° and 140°. Alternatively, the slope of the top surface 14 can be taken as the angle between the top surface and a tangent to the curved sole portion 22 generally in the central part of the arc of the sole, but slightly to the rear of the center of the arc, at a point indicated at 36 in FIG. 1. In the orientation of the club as shown in FIG. 1, a tangent to the arc of the sole 22 at 36 is parallel with the horizontal, and accordingly angle A will have the same value as when measured with the horizontal. A precise location of point 36 in the illustrated embodiment will be discussed subsequently in connection with a specific description of the dimensional details of the preferred embodiment. Also in the orientation illustrated in FIG. 1, the angle between the axis of shaft 35 and a vertical line taken through the center of shaft opening 26, this angle being indicated at C in FIG. 1, is preferably 20°, but can range between 15° and 25°.

As mentioned previously, my improved putter has been found to be advantageous in that it gives the golfer a much better visual perspective in lining up the club relative to the cup for the putting stroke. It is believed to be these angles, that is, the slope of the top surface 14 and the shaft axis 35, or the slope of one relative to the other, that are the basic source of this advantageous feature and result.

The sole portion 22 of the club head is arcuately curved (e.g., an arc of 12 inches radius) along the longitudinal axis 28 of the putter head 10. The toe and heel portions, 12 and 20, respectively, are also arcuately curved (e.g., $\frac{7}{16}$ inch and $\frac{3}{4}$ inch radii, respectively) as shown in FIG. 1. The curvature primarily of the sole portion allows the club to be held at a variety of angles while maintaining consistent accuracy no matter at which of these angles the club is held.

Shaft 35 is installed in the shaft hole 30 in any of several known manners. As will be seen in FIG. 1, the shaft axis is nearly centered in the head for good weight distribution and balance, the shaft axis being substantially at the center of mass of the putter head.

The putter head is symmetrical on both sides of the longitudinal axis 28 so as to permit its use by either right

or left-handed golfers. As illustrated in FIG. 3, the faces 24 of club head 10 are flat and have a slight loft, that is, they are displaced from the vertical by an angle B of approximately 2°–4°, preferably 2°. I have found that this slight loft tends to cause the ball to roll in such a manner as to eliminate or minimize bounce or the tendency to bounce.

Specific details of the illustrated and presently preferred embodiment are as follows: In the illustrated orientation, angle A is 22° measured relative to the horizontal, and angle C is 20° measured relative to the vertical. Angle A can vary between approximately 20° and 25°, and angle C can range between approximately 15° and 25°. Therefore, the included angle between the axis of shaft 35 and top portion 14 preferably is 132°, and can range between approximately 125° and 140°. Point 36 is the lowermost extent of the curved sole in the illustrated orientation, and the curve of the sole has a radius of 12 inches from a center lying vertically above point 36 and $1\frac{1}{2}$ inches horizontally to the right of a vertical line passing through the center of shaft opening 26. The heel and toe arcs have radii of $\frac{3}{4}$ inch and $\frac{7}{16}$ inch, respectively, from centers located $1\frac{3}{16}$ inches measured horizontally to the left and $1\frac{1}{2}$ inches measured horizontally to the right, respectively, from a vertical line extending between point 36 and the center of curvature of the sole. The upper curved surface of the hosel has a radius of $1\frac{3}{8}$ inches from a center lying $3\frac{1}{8}$ inches vertically above point 36. The extreme upper point of the hosel lies in a horizontal plane located $2\frac{9}{16}$ inches vertically above point 36. The arc at the rear of the hosel which merges into the back has a $\frac{3}{4}$ inch radius from a center lying in the plane of shaft opening 26, the plane of the shaft opening being normal to the shaft axis. The top of the hosel has a diameter of $\frac{7}{16}$ inch. The toe-to-heel dimension is $3\frac{3}{8}$ inches. As viewed in FIG. 3, angle B is 2°, and may range up to about 4°. The illustrated club head is of plastic, and its maximum thickness at the bottom of the sole is $\frac{3}{4}$ inch. When made of a heavy material, the thickness would be about $\frac{1}{2}$ inch.

It will be understood that various modifications may be made in the details of design and construction of the specifically described preferred embodiment without departing from the scope and spirit of the invention, and that the scope of the invention is limited only by the subjoined claims construed in the light of the foregoing description and illustrations.

I claim:

1. A golf putter comprising a shaft and a putter head connected thereto, said putter head having oppositely disposed hitting faces, each of said faces being of generally triangular shape, one relatively long side of the triangle forming the sole portion of the putter head, another relatively long side being substantially straight and forming the top portion of the putter head, and the shortest side forming the back portion of the putter head, said shaft being connected to said head substantially at the intersection of said top portion and said back portion, said top portion and said sole portion meeting in a relatively sharply arcuate toe portion, said back portion and said sole portion meeting in a relatively gradually arcuate heel portion, said sole portion being slightly arcuate along its length, and said hitting faces each having a substantially flat ball-striking surface area extending from said toe portion to said heel portion with a substantially uniform slight loft angle, said putter head being substantially symmetrical relative to a plane passing along the center line of said shaft and through the midpoint of the width of said toe portion.

2. A golf putter as claimed in claim 1 wherein the included angle between said top portion and said shaft is at least about 125°.

3. A golf putter as claimed in claim 2 wherein said included angle is not more than about 140°.

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4. A golf putter as claimed in claim 1 wherein the angle between said top portion and a tangent to the sole portion at a point near the center of the arc of the sole portion is between about 20° and 25°

5. A golf putter as claimed in claim 4 wherein said point is about midway of the length of said putter head.

6. A golf putter as claimed in claim 5 wherein the angle between said shaft and a line normal to said tangent is between about 15° and 25°.

7. A golf putter as claimed in claim 1 wherein said loft angle lies between about 2° and 4°, and said sole portion, as viewed from the bottom thereof, is of substantially uniform thickness along the length of its arc.

8. A golf putter as claimed in claim 1 wherein, with said sole portion resting upon a horizontal surface at a point approximately midway of the length of the putter head, said shaft makes an angle of about 15°-25° with the vertical, and said top portion makes an angle of about 20°-25° with the horizontal.

9. A golf putter as claimed in claim 8 including an arcuate portion at the upper end of said top portion for gradually merging said top portion into a condition of parallelism with said shaft.

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10. A golf putter as claimed in claim 9 wherein said sole portion, as viewed from the bottom thereof, is of substantially uniform thickness along the length of its arc.

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U.S. Cl. X.R.

D. 34-5; 273-80