United States Patent [19]

Witherspoon

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[54] **GOLF CLUB**

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[52] **U.S. Cl.** ..... **273/171,** 273/167 C, 273/175, 273/80.2

[51] **Int. Cl.** **A63b 53/02,** A63b 53/04

[58] **Field of Search** ..... 273/67 C, 77 R, 80 C, 273/83, 167 A–167 K, 167 R, 168, 175, 193 R, 193 A, 194 R, 80.1–80.8, 169–174

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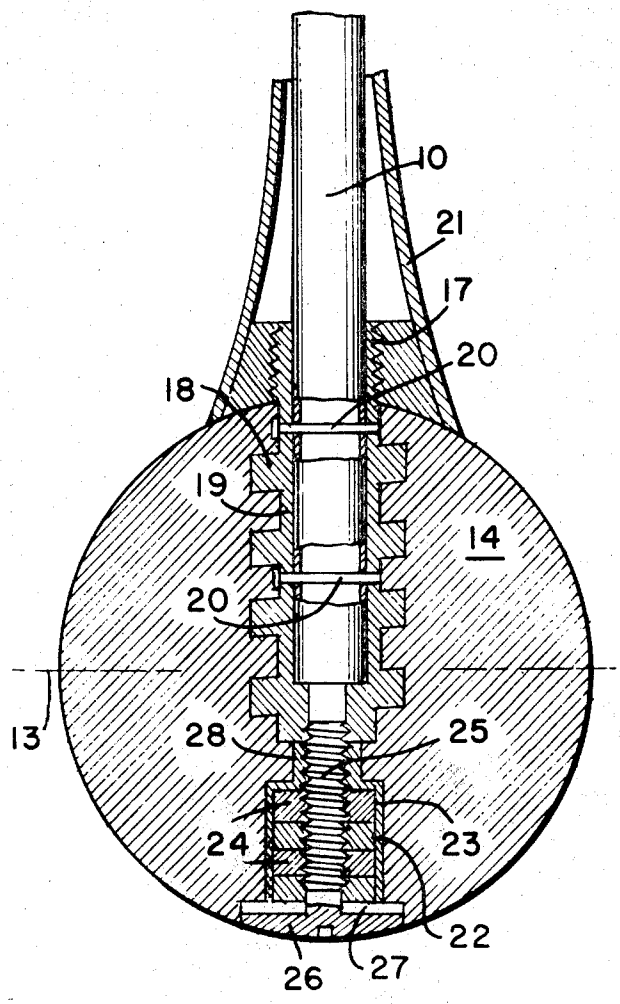
[57] **ABSTRACT**

The invention involves a substitute club head in the approximate form of an annulus or a sphere or section of a sphere having an endless succession of striking faces all around the club head. The shaft is positioned through the top surface of the club head and is received within a sleeve being coaxial and in alignment with the radius of the sphere. The sleeve cooperates with a weight means in a weight receptacle which is secured within said receptacle within the club head and wherein the weight means and weight securement means are coaxial and aligned with the shaft and shaft receiving sleeve.

2 Claims, 9 Drawing Figures



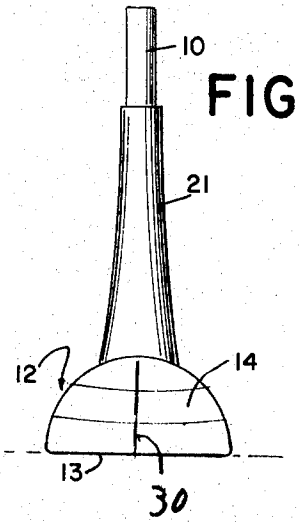


FIG. 4

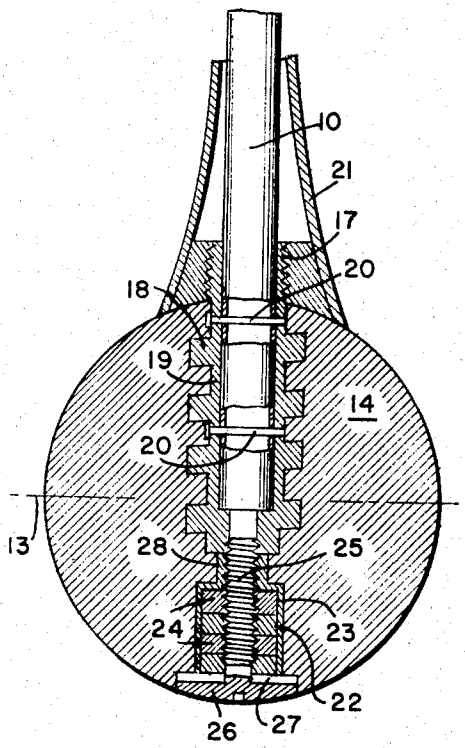


FIG. 2

FIG. 1

FIG. 3c

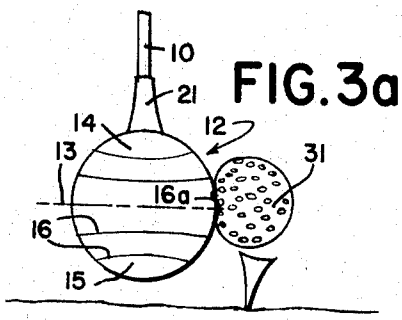
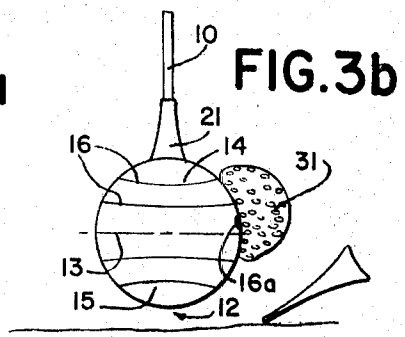


FIG. 3a



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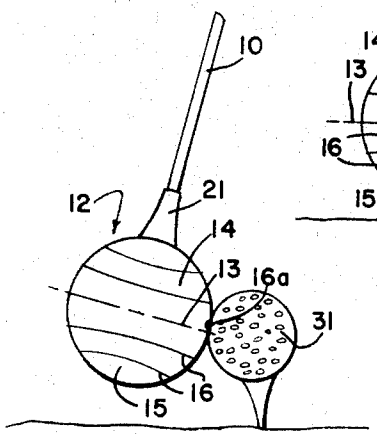

FIG. 3

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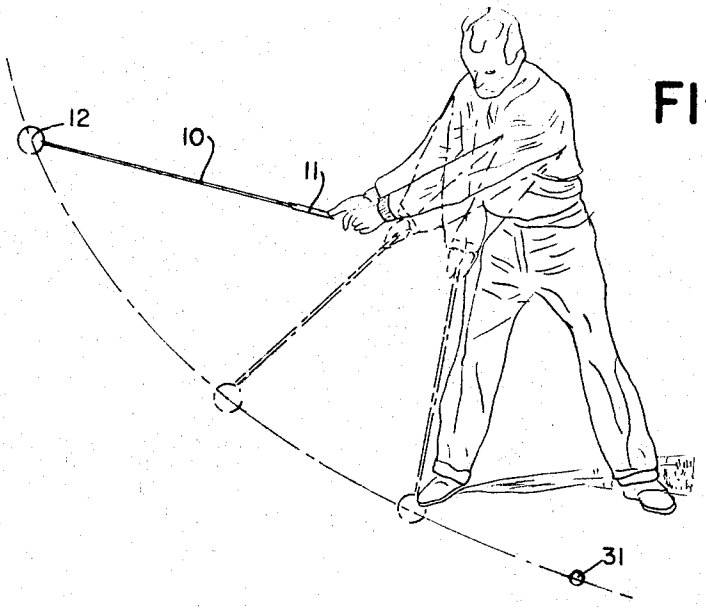

FIG. 5

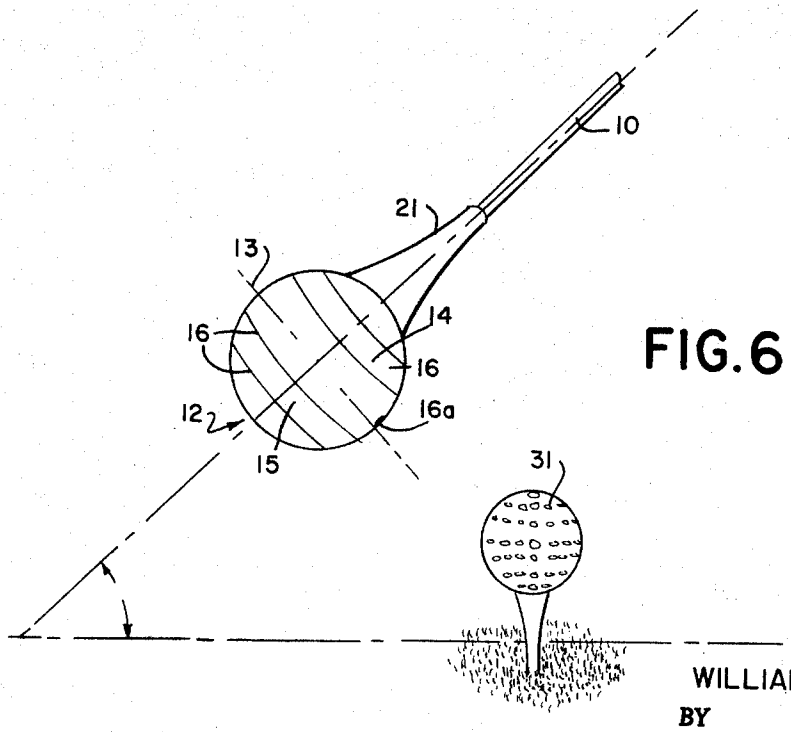

FIG. 6

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GOLF CLUB

The present invention relates to Golf Club and has the following objects and purposes.

The modern concept of swinging a golf club dictates that the wrist-cock, once established in the swing, must be maintained for as long a time as possible before releasing that wrist-cock at impact through the ball.

There is a tendency of many golfers to release the wrist-cock much too early in the down swing, and lose vital club head speed at impact with the ball. I have found that this action, hitting from the top of the back swing, indulged in by many golfers, occurs from an image formed in the mind of the golfer at the address position with the ball, before initiating his swing. He realizes that the club head has a nearly flat striking surface with which to strike the ball, and he feels that, before he can hit the ball in the proper line of flight, he must make an attempt to square or realign, in the down swing, that nearly flat striking surface to the ball before impact. Even knowing his objective throughout the swing, namely to retain the wrist-cock for as long a time as possible before impact, and let the centrifugal force of the club head release the wrist at the proper moment with the club face at the proper alignment, there is a reflex which takes over and slows his hand speed, and causes a manipulation of his wrists and hands too early, with a fear that the club face will not be aligned in time to hit the ball. This action reduces the vital club head speed.

The purpose of this new club head design, which is to be used for actual point-to-point contact with a golf ball or training aid simulating a golf ball, is to develop the proper muscular co-ordination for a more natural wrist release and remove the fear that the club head will not be aligned properly at impact with the ball.

The unique club head design is in the form of an annulus or sphere or section thereof, and has no planar surface with which to align the ball. Without any locus of orientation on the club head with which to be confronted, the player will be allowed to make a more natural wrist release through the ball, and have less tendency to manipulate the hands in an attempt to realign the club head before impact. This action will in effect produce the desired increase in hand speed through the impact zone.

The new club head is designed to produce a swing weight either equal to or approximating any golfers' standard golf club swing weight, and is designed for attachment to a standard club shaft of standard length with grip. This assures the golfer that the club will feel and swing in the same manner as his playing clubs.

As the club head is swung over and over again, the golfer will develop a feel of the proper wrist release through the impact zone, and discover that he can strike the ball in a desired direction, perhaps to a shorter distance, but that he can in fact hit the ball without having had to manipulate his hands in any fashion, and in time transfer the new feel and image into his swing using his standard golf clubs for actual play.

With the foregoing and other objects in view, the invention will be more fully described hereinafter, and will be more particularly pointed out in the claims appended hereto.

In the drawings, wherein like symbols refer to like or corresponding parts throughout the several views.

FIG. 1 is a perspective view of a standard golf shaft and grip with a club head according to the invention affixed to the regulation shaft in place of the customary club head of conventional form,

FIG. 2 is a central sectional view of a form of golf club head according to the invention illustrating a form of connection to the shaft and a form of selective weight application,

FIG. 3 is a side elevational view with the shaft broken away and illustrating a spherical form of club head with the striking surface initially in approximate point-to-point contact with a teed golf ball,

FIG. 3*a* and 3*b* are similar views showing progression of the spherical club head "through the ball,"

FIG. 3*c* is a view similar to FIGS. 3*a* and 3*b* showing the ball in initial flight and the golf club head following through.

FIG. 4 is a side elevational view of a modified form of a hemispherical section club head with the golf shaft broken away,

FIG. 5 is a perspective view illustrating a golfer with a golf club according to the invention in the act of a normal down swing with a standard golf ball on the tee, and

FIG. 6 is a fragmentary perspective view of the club head and ball on an enlarged scale showing an approximate angle between projected golf shaft center line and the plane of the teeing ground.

Referring more particularly to the drawings, **10** designates a regulation golf club shaft and **11** a leather or other hand grip of any accepted form. To the lower end of the shaft **10** is connected in any suitable manner a club head **12**, which is unique in that it is in the general form of an annulus or sphere or a section thereof.

Geometrically considered a great circle **13** of the sphere **12** divides the sphere into two hemispheres, an upper or inner hemisphere **14** and a lower or outer hemisphere **15**. In this context the word "inner" means closer to the golfer and "outer" means further removed from the golfer.

The lower end of the club shaft **10** is connected in any suitable manner to the spherical club head **12** so that the axis of the shaft **10** is preferably in substantial alignment with a diameter of the sphere which is at substantially right angles to the plane passing through the spherical head **12** defined by the great circle or equatorial belt **13**.

Thus we have a lower or outer hemispherical section **15** constituting a pendulous weight mass and an upper or inner hemispherical section **14** which is the striking face of the club head. This upper hemispherical striking face **14** may be pitted, dimpled, lined or scored with shallow grooves or other delineations **16** usual to the striking faces of golf club heads to assist in imparting desired spins to the driven golf balls. A "sweet spot" **16***a* may also be delineated on the striking annular or hemispherical face if desired.

As illustrated in FIG. 2 the spherical club head **12** may be cored out along the diameter line coinciding with the axis of the golf shaft **10** to afford adequate connection of shaft and club head **12** and accomodating changeable weight means to weight and balance the shaft and to adjust weight and swing weight.

In this FIG. 2 the lower end of the golf shaft **10** is shown as received into a sleeve **17** having an external spiral thread **18** taking into mating threads **19** in the club head. Lateral screws **20** may be used to bind the

end of the shaft **10** into the sleeve **17.** A shank housing **21** is bound about the lower end of the shaft **10** and projecting end of the sleeve **17.**

A weight receptacle **22** is removably fitted in a recess **23** in the opposite end of the spherical club head, the weights being in the form of lead or other washers **24** threaded onto the externally threaded shank **25** of a screw having a head **26** fitted tightly against a compressible or other washer **27,** such shank **25** being threaded into the adjacent end of the sleeve **17.** The number of lead washers **24** may be substracted from or added to for the purpose of arriving at proper or desired club weight and for swing weight, it being understood that the washer threads will prevent the washers **24** from movement in the club head even when less than capacity of number of washers is in place. An internally threaded small diameter extension **28** of the weight receptacle **22** abuts the inner end of the sleeve **17** and is adapted to receive the inner end of the shank **25** which is threaded into the inner open threaded end of the sleeve **17.** Other arrangements of weighting the club head may be employed.

In the modified form of the invention illustrated in FIG. **4** the lower hemisphere of the club head is omitted as the true striking face of the club head is confined to the upper hemisphere. Any annular portion of a sphere in the area of the belt **13** will suffice.

In the use of a club head, such as herein proposed, it will be obvious that any contact of the club head with the teed ball below the great circle or equatorial belt line **13** will only serve to drive the ball into the ground and the novice will early learn that initial contact with the ball must be made in the upper hemisphere or at least not substantially below the line **13** connecting the two hemispheres.

Also such initial contact of club head **12** with ball, for best results, must be made in alignment with the longitudinal center line of shaft **10** as contact to one side of this line will drive the ball to the right and contact of the club head to the other side of this line will result in driving the ball to the left. In FIGS. **1** and **4** the center line referred to is identified at **30,** this line being of course a curved line from the great circle **13** up to the area of the connection between shaft **10** and club head **12.**

Accordingly, there is a "sweet spot" **16*a*** on the striking face of the club head identified by the conjunction of the great circle **13** with the line **30** and the golfer should be instructed to use every effort to make initial contact with the teed golf ball **31** at this precise point or spot.

This initial contact is made on the down stroke of the club head as shown in FIG. **3.** It is essentially a point-to-point contact between the two involved spheres, the one the club head **12,** the other the spherical golf ball **31.**

The foregoing description of the mode of operation has been for clarafication restricted to a single striking face and single "sweet spot" **16*a*** but it will be understood that the globular or spherical or part-spherical or annular club head presents a great number of such striking faces. For instance the golfer may rotate the golf shaft **10** in his grip about the longitudinal axis of such shaft **10** and in doing so he brings into play a succession of striking faces all along the great circle **13** and just above such great circle **13.**

This reveals a great advantage with the use of the present invention in that the golfer does not have to exercise any minute care as to just how he must assume his grip in order to bring a single striking face of the club into correct position with the ball at impact. The spherical head will effectively strike the ball in any angular grip position of the hands.

Then there are tall and short golfers. In addressing the teed ball the golf shaft of a tall golfer will make a larger angle with the plane of the teeing ground than that of a short golfer and this variation will act to bring different series of striking surfaces on the spherical club head into play. This condition is illustrated in FIG. **6.**

The point made here is that the use of the spherical golf head of this invention with its many striking surfaces brought automatically into play in the down swing will free the mentality of the golfer of any concern as to manoeuvering a flat striking surface offset laterally from the axis of the shaft into a correct "squared" relation to the teed ball just at the moment of impact. The chief reason for releasing wrist-cock too early in the swing is thus removed. Moreover greater accuracy is instilled in the golfer in achieving point-to-point contact of a spherical club head with the spherical golf ball.

At all points in the down swing where the golfer can see the club head it reveals itself as an annulus or part sphere with a striking face or "sweet spot" in alignment with the teed ball so that the golfer's mind is eased as to any difficulty in adjusting wrist action to orientation to golf ball.

The club head may be made of wood, metal, plastic or other suitable material or a combination of the same.

I claim:

1. A golf club comprising:

a. a shaft;

b. a club head having at least a hemispherical upper surface, and having an opening through the radius thereof and having a bottom sole surface;

c. a shaft receiving sleeve positioned through the top surface of said club head and terminating a predetermined distance within said club head and having external threads for mating engagement with internal threads of said club head, and wherein means secure said shaft within said shaft receiving sleeve;

d. said shaft and said shaft receiving sleeve being coaxial and in alignment with the radius of said club head, wherein said radius is at right angles to the horizontal plane passing through the great circle of said club head;

e. a weighting receptacle removably fitted through said bottom surface of said club head;

f. weight means located within said weighting receptacle; and

g. weight securement means securing said weight means within said weighting receptacle and enclosing said weighting receptacle within said club head, and wherein said weighting receptacle, said weight means and said weight securement means are coaxial and aligned with said shaft and shaft receiving sleeve.

2. A golf club as claimed in claim **1** wherein the bottom sole surface is hemispherical forming the club head into a sphere.

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