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[54] **GOLF CLUB HEAD WITH MOVABLE WEIGHT**  
 6 Claims, 3 Drawing Figs.

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**ABSTRACT:** A golf club head incorporating a hollow interior with a movable weight supported on a mounting rod which can be oriented in different angular positions to counteract the tendency of a golfer to hook or slice the ball and to increase the distance which the ball is driven due to the additional forces exerted on the ball by the movable weight. The movable weight is centered on the mounting rod by spring devices and the overall shape and configuration of the golf club head is not changed.

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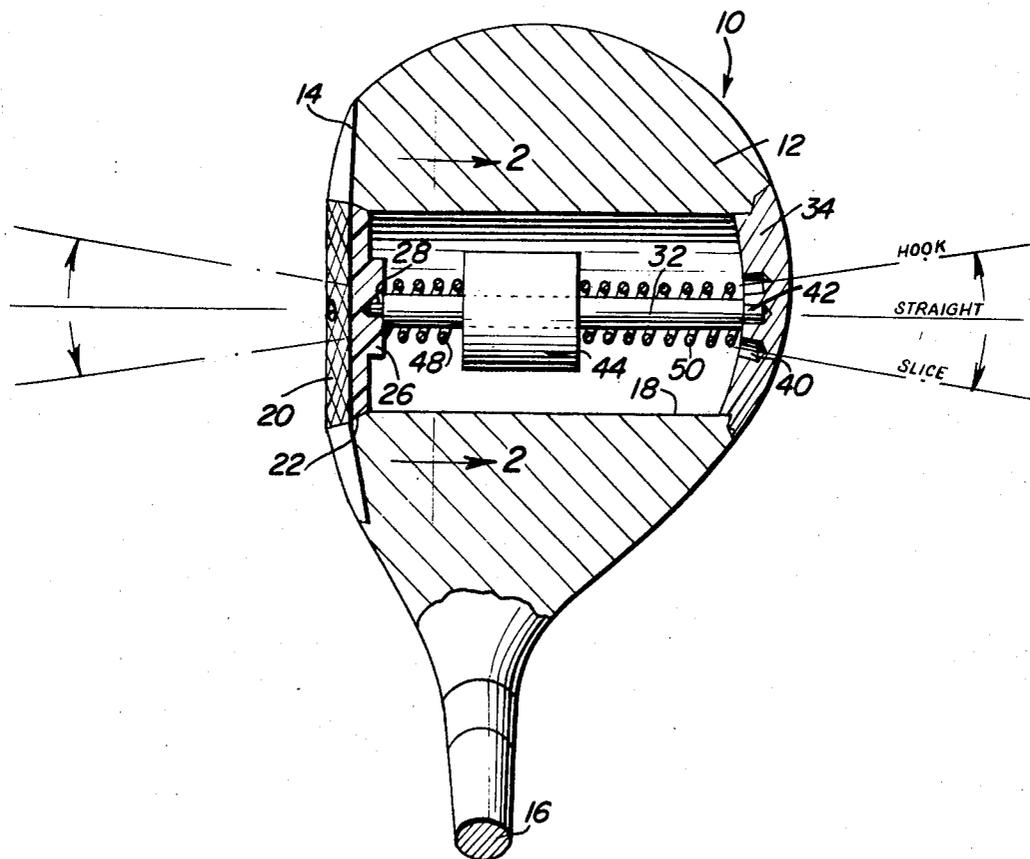


Fig. 1

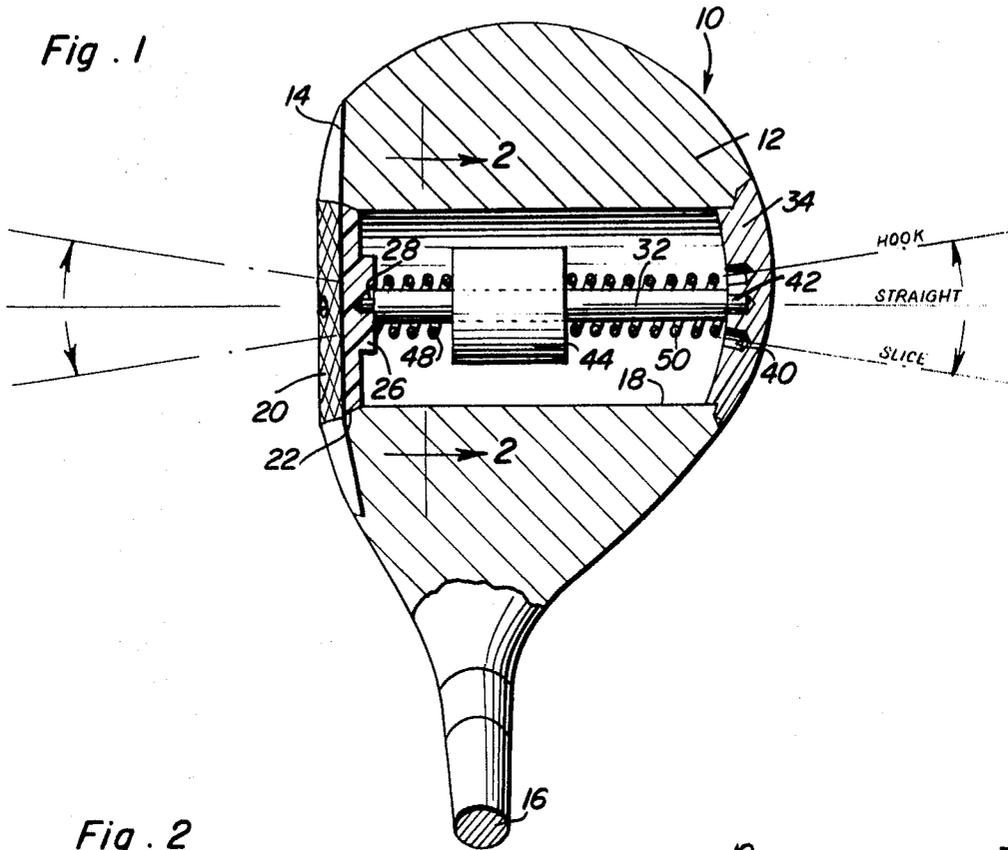


Fig. 2

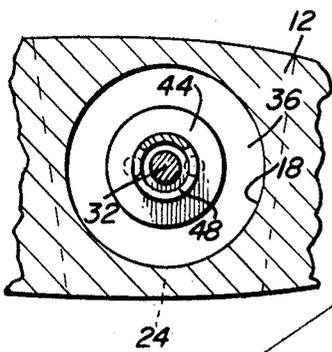
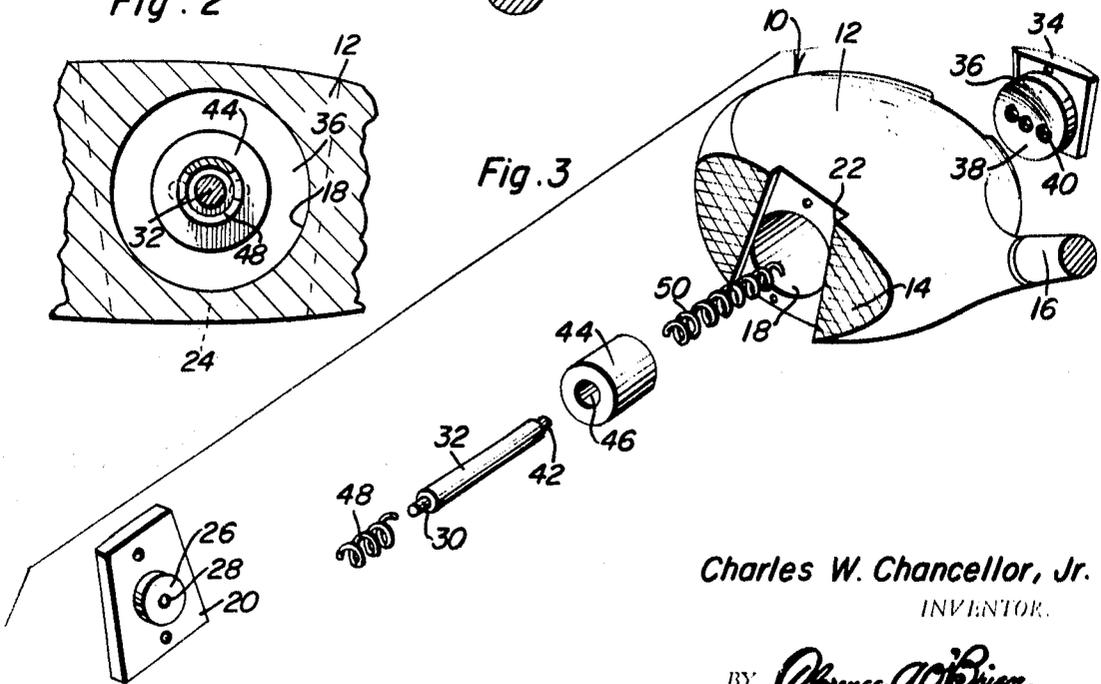


Fig. 3



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### GOLF CLUB HEAD WITH MOVABLE WEIGHT

The present invention generally relates to a golf club head and more particularly to a golf club head having a movable weight incorporated therein with the angular direction of movement of the weight in relation to the golf club head being adjustable so that if the golfer has a tendency to hook the ball, slide the ball or hit a straight ball, the adjustable weight can be preset for the particular requirements of each individual golfer.

One of the many problems encountered by golfers is the tendency to engage the face of the club head with the ball in a manner that causes the ball to deviate from the desired path of flight. Generally, a golfer will have a tendency to slide the ball, hook the ball or drive the ball straight and will consistently drive the ball in the same manner. That is, if a person slices the ball, he usually will consistently slide the ball on each drive off the tee or if he has a tendency to hook the ball, he usually will hook the ball when he drives off each tee. While this tendency can be compensated for to a degree by varying the position of a golfer in relation to the golf ball and desired flight path, this does not effectively serve the problem inasmuch as substantial distance is lost when the ball is either sliced or hooked.

Accordingly, it is an object of the present invention to construct a golf club head with a movable weight therein which will counteract the tendency to slice or hook the golf ball and increase the distance where the golf ball is driven as well as increase the degree of accuracy of the flightpath.

Another object of the invention is to provide a golf club head having a longitudinally elongated mounting rod slidably supporting a weight in the hollow interior of the golf club with the angular position of the rod in relation to the club head face being adjustable so that the characteristics of the golf club head can be preset to adapt the golf club for each individual golfer depending upon the tendency of that golfer to either slice, hook or drive the ball straight.

A further important object of the present invention is to provide a golf club head in accordance with the preceding objects which is simple in construction, easy to preset, relatively inexpensive to manufacture and effective for correcting the tendency to slice or hook and also impart additional impact forces to the golf ball.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

FIG. 1 is a plan sectional view of a golf club head with the present invention incorporated therein.

FIG. 2 is a transverse, sectional view taken substantially upon a plane passing along section line 2-2 of FIG. 1 illustrating the structural relationship of the movable weight, the mounting rod, coil spring and hollow interior of the golf club head.

FIG. 3 is an exploded group perspective view of the golf club head of the present invention.

Referring now specifically to the drawings, the numeral 10 generally designates the golf club head of the present invention which may be any of the usual wood clubs employed to drive the golf ball from a tee or from the fairway with the club head being of conventional shape and configuration and constructed of conventional materials such as laminated wood or the like with the club head including a body 12 having a face 14 oriented thereon in a conventional manner and an upwardly extending shank 16 to which the usual club handle is attached.

The club head body 12 includes a longitudinal passage or bore 18 extending from front to rear thereof with the bore 18 being generally cylindrical in configuration and generally having a central axis coincident with the center of the club face 14. The club face 14 is provided with an insert plate 20 having upwardly converging side edges received in a correspondingly

shaped recess 22 in the club face 14. Countersunk screw-threaded fasteners 24 are provided for securing the insert plate 20 in position with this structure being that found in presently available wood clubs.

The inner surface of the insert plate 20 is provided with a projecting boss 26 of cylindrical construction having a centrally disposed recess 28 formed therein for receiving the reduced end 30 of an elongated cylindrical mounting rod 32 with the recess 28 being such that the mounting rod 32 may be angularly disposed in relation to the surface of the boss 26.

The trailing or rear end of the bore 18 is closed with an insert plate 34 having an external curvature conforming with the curvature of the trailing surface of the club head. The insert plate 24 is secured in place by screw-threaded fasteners similar to the threaded fasteners 24 and the inner surface thereof is provided with a projecting boss 36 having a concave inner surface 38 and three horizontally recesses 40 therein for receiving a reduced end 42 on the mounting rod 32 which is opposite from the reduced end 30. Thus, the rod 32 may be positioned with the longitudinal axis thereof parallel with the front-to-rear axis of the bore 18 or disposed in angular relation thereto with the three positions of the axis of the rod 32 being illustrated in FIG. 1 and designated as "hook," "straight" and "slice."

Slidably mounted on the rod 32 is a cylindrical weight 44 having a central bore 46 slightly larger than the rod 32 to enable free sliding movement thereon. A relatively short compression coil spring 48 encircles the rod 32 between the sliding weight 44 and the boss 26 on the insert plate 20 and the relatively longer compression coil spring 50 encircles the rod 32 and is interposed between the weight 44 and the concave surface 38 of the insert plate 34. With this construction, the springs will retain the weight 44 in a normal position spaced away from both the insert plate 20 and the insert plate 34 but yet enable relative movement of the weight 44 as the springs 48 and 50 are compressed during acceleration of the club head and deceleration thereof.

If the rod 32 and the weight have been reset along the "slice" line in FIG. 1, upon impact of the club head face with the golf ball, the weight moves outwardly in an angular path along the rod 32 thus moving outwardly of the club head and counteracting the out-to-in swing which originally caused the slice. Correspondingly, when the weight and mounting rod have been oriented along the "hook" line in FIG. 1, upon impact with the golf ball, the weight moves along the rod 32 toward the inside of the club head thus counteracting the into-out swing which causes the hook. When the club head face engages the ball in a straight line manner and the rod 32 has been oriented in the center position indicated as "straight" in FIG. 1, the weight moves forward along the rod 32 thus giving the golf ball added momentum and the golf club added followthrough.

The angular position of the rod 32 may be preset at the factory upon custom order of an individual golfer or the retail establishment or the customer himself may adjust or set the angle of the rod 32 to solve his particular tendencies.

By actually shifting the weight to counteract the errors in the swing of the club head which causes the hook or slice, the golfer will actually change his swing by following the forces of the weight thus enabling the golfer to more properly swing the club head in a proper path even when a club is being used that does not have the movable weight of the present invention incorporated therein.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What I claim as new is as follows:

1. A golf club head comprising a body having a substantially flat golf ball impact surface on the leading surface thereof, a

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bore in said body having a longitudinal axis extending from said impact surface area to the rear of the club head, a mounting rod disposed in said bore generally along said axis, a weight means mounting said weight on said rod for slidable movement in response to the swing of the golf club, and means for adjustably supporting the mounting rod in said bore so that the longitudinal axis thereof may be angularly varied in relation to the longitudinal axis of the bore so that movement of the golf club head in a path to cause the golf ball to deviate from a straight line flight path will be compensated for by the shifting of the movable weight.

2. The structure as defined in claim 1 wherein said means mounting the rod includes opposed recesses in the opposite ends of said bore, one end of said bore having a plurality of spaced recesses for selectively receiving the end of a mounting rod to orient the rod in a selected angular relation to the bore.

3. The structure as defined in claim 2 wherein the plurality of recesses are oriented in the rear of said bore, an insert plate mounted on the rear of the club body and forming a closure for the rear end of the bore, said insert plate having a projecting boss extending into the bore and provided with a concave

inwardly facing surface, said recesses being disposed in said concave surfaces and being horizontally disposed for enabling the mounting rod to be disposed in different angular positions in a horizontal plane to counteract the out-to-in swing which causes a slice and the in-to-out swing which causes a hook of a driven golf ball.

4. The structure as defined in claim 3 wherein said golf ball impact face includes an insert plate forming a closure for the forward end of the bore, said insert plate including a boss on the inner surface thereof extending into the bore and including a recess receiving the forward end of the mounting rod.

5. The structure as defined in claim 4 wherein said mounting rod includes a reduced end at each end thereof for reception in the recesses.

6. The structure as defined in claim 5 wherein said bore, mounting rod and weight are of cylindrical construction, and a coil spring interposed between each side of the weight and the insert plates to retain the weight in resiliently spaced relationship to the plates to enable movement of the weight during acceleration and deceleration of the golf club head.

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