

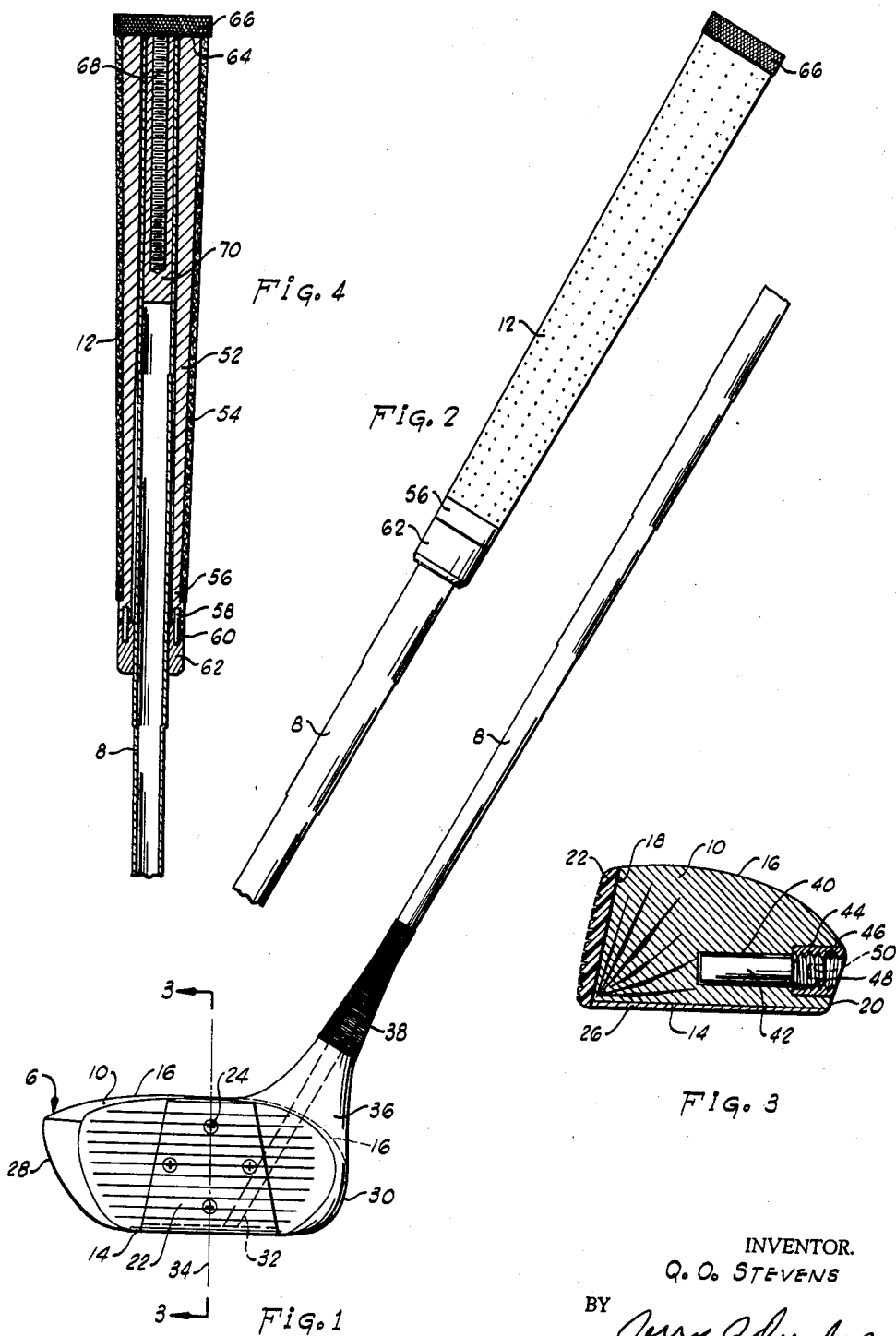
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GOLF CLUB

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GOLF CLUB

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This invention relates, as indicated, to improvements in golf clubs, and more particularly, but not by way of limitation, to an improved golf club of the type known as a wood.

The designs of golf clubs, other than the putter, have changed very little since the game of golf has become a popular sport. With the present concept of golf club construction, each type of club generally comprises an elongated shaft having a head portion rigidly secured on the lower end of the shaft and a grip portion on the upper end of the shaft. Heretofore, all woods and irons have been constructed in such a manner that the shaft is secured to the extreme rear end of the golf club head; whereas the striking area of the head, i.e., the portion of the head the golf ball should be contacted, is located in substantially the central portion of the head. As a result, a golf ball is usually struck with a portion of the head spaced a substantial distance from the point of connection of the shaft to the head, which tends to turn or twist the golf club, and requires the player to maintain a substantial grip on the golf club shaft to maintain the striking face of the club at right angles to the desired path of flight of the ball. This tendency of the golf club to twist when the ball is struck is most prominent when using woods, due to the longer shafts of the woods and the tendency of the player to strike the ball harder when swinging a wood.

The only appreciable differences in golf clubs presently in use are in the weights and the lengths of the clubs. Some players desire heavier golf clubs than are usually available, and other players desire longer golf clubs than are usually available. It is desirable to control the weights and lengths of the clubs, and particularly the woods, at the locations where the golf clubs are purchased and tried by the players, such as at professional golfer's shops. At the present time, the weights of the woods are usually controlled by a lead or babbitt slug poured into a shallow bore formed in the bottom face of the club head. This slug may be replaced to provide the desired weight for the golf club head. However, almost all woods are provided with a base plate secured over the bottom face of the head, and it is necessary to remove and replace this base plate when varying the weight of the club. At the present time, a player has no practical way to vary the length of a golf club.

The present invention contemplates a novel golf club construction wherein the shaft is secured to the head at a point which is substantially closer to the portion of the club used to strike a golf ball, such that the club has a minimum tendency to twist as a ball is struck, yet the shaft is extended from the club head at substantially the same angle as presently utilized in golf club constructions to prevent the necessity of a golfer changing his swing when using a club constructed in accordance with the present invention. The present invention also contemplates a wooden golf club head construction wherein the weight of the club may be changed in a

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minimum of time by the addition or removal of the desired amount of weight from the club head, with the weight being added or subtracted from the central portion of the club head in alignment with the center of gravity of the club head, such that the required swing of the golf club will not be changed by a variation in the amount of weight in the head. This invention further contemplates a novel grip construction for the shaft of a golf club wherein the length of a golf club may be changed as desired by replacing only the grip portion of the club. More specifically, the present invention contemplates a replaceable grip which may be easily slipped on and off of a golf club shaft to control the length of the golf club, and yet the grip may be fastened on the golf club shaft against either a turning movement or an endwise movement of the grip on the shaft to provide a practical and useful golf club of the desired length.

An important object of this invention is to provide a golf club which may be fitted to the individual needs or desires of a player.

Another object of this invention is to provide a golf club which will have a minimum tendency to twist when the golf club strikes a ball with the desired portion of the golf club.

A further object of this invention is to provide a golf club construction wherein the weight of the club may be changed as desired, in a minimum of time and with a minimum of effort.

Another object of this invention is to provide a golf club construction wherein the length of the club may be changed with a minimum of effort and in a minimum length of time, without changing the normal operation of the club.

A still further object of this invention is to provide a golf club which is simple in construction, may be economically manufactured, and which will have a long service life.

Other objects and advantages of the invention will be evident from the following detailed description, when read in conjunction with the accompanying drawings which illustrate my invention.

In the drawings:

Figure 1 is a front elevational view of the lower portion of a golf club constructed in accordance with this invention.

Figure 2 is a continuation from the upper end of Fig. 1, and is an elevational view of the upper portion of a golf club constructed in accordance with this invention.

Figure 3 is a vertical sectional view through the central portion of the head of the golf club shown in Fig. 1, as taken along lines 3—3 of Fig. 1.

Figure 4 is a vertical sectional view through the grip portion of a club constructed in accordance with this invention.

Referring to the drawings in detail, and particularly Figs. 1 and 2, reference character 6 generally designates a golf club comprising an elongated shaft 8 having a head 10 on the lower end thereof and a grip 12 on the upper end thereof. The shaft 8 is normally of tubular construction and decreased in diameter, stepwise, toward the lower end thereof, although it will be understood that any desired shaft construction may be utilized.

The head 10 is formed out of wood, and has a shape generally conforming to present day golf clubs, with a substantially flat bottom portion 14 and a tapered upper surface 16 extending generally downward from the striking face 18 to the trailing face 20, as shown most clearly in Fig. 3. The usual striking plate 22 is secured over the central portion of the striking face 18 by a plurality of suitable screws 24 to provide a surface for contacting a golf ball (not shown) which will have a long service

life and will have the required physical properties to obtain the maximum distance of flight of the golf ball. Also, a metal base plate 26 is preferably secured over at least a portion of the lower face 14 of the head 10 to prevent damage to the head through repeated usage. Further, the forward end or toe 28 of the head 10 is normally rounded and extended upwardly and forwardly; whereas the rear end 30 of the head is rounded with a smaller radius than the forward end 28.

A bore or socket 32 extends from the top 16 of the head 10 downwardly and forwardly through the head to tightly receive the extreme lower end portion of the elongated shaft 8. The socket 32 is positioned between rear end 30 of the head and a vertical plane 34 passing through the center of gravity (not shown) of the head 10, with the lower end of the socket 32 terminating in proximity with, but rearwardly of, the vertical plane 34 passing through the center of gravity of the head. The upper end of the socket 32 (at the top surface 16 of the wood) is positioned about half way between the rear end 30 of the head and the vertical plane 34. It will also be observed in Fig. 1, that the striking plate 22 is centered with respect to the center of gravity of the head and that a properly hit golf ball is contacted by at least some portion of the striking plate 22. A tubular and tapered projection 36 is formed on the top 16 of the head 10 adjacent the rear end 30 of the head around the shaft 8. It will thus be observed that the opening through the projection 36 is in alignment with the socket 32 to tightly receive the adjacent portion of the shaft 8. Suitable wrapping 38 is secured around the upper end portion of the projection 36 and around the adjacent portion of the shaft 8 to provide a neat appearance and facilitate the securing of the head 10 on the shaft 8. Also, a suitable set screw (not shown) may be extended transversely through the projection 36 into contact with the shaft 8 to further secure the head 10 on the shaft. It will be understood that the projection 36 is normally formed with the remainder of the head 10 and is a part of the head to provide a strong construction and effectively absorb blows imposed on the head 10 when a golf ball is struck with the club.

As shown in Fig. 3, a bore 40 is formed in the head 10 from the trailing face 20 of the head toward the striking face 18 in alignment with the center of gravity of the head to receive a cylindrical slug 42 of a suitable weighting material, such as lead or babbitt. A counter-bore 44 is formed at the outer end of the bore 40 to receive an internally threaded sleeve 46. The sleeve 46 is preferably pressed into the counter-bore 44 and receives a threaded plug 48 which is used to hold the slug 42 in the bore 40. The plug 48 is provided with a suitable socket 50 to facilitate the threading and unthreading of the plug from the sleeve 46. The slug 42 is preferably of a size to provide a sliding fit thereof in the bore 40, such that the slug may be removed and replaced easily and quickly to control the weight of the golf club 6. Also, it will be observed that the weight 42 is positioned in alignment with the vertical plane 34 and the center of the striking plate 22, such that the weight will be the most effective in increasing the striking force of the club 6.

In a commercial embodiment of the present invention, a plurality of the grips 12 will be provided with varying lengths to provide the shaft 8 with the desired length for any particular player, as will be described. Each grip 12 comprises a rigid material sleeve 52 (preferably formed out of a light weight material, such as aluminum) and having an inner diameter of a size to provide a sliding fit of the sleeve 52 on the upper end portion of the shaft 8. A suitable grip material 54, such as leather, is secured around the circumference of the sleeve 52, throughout substantially the entire length of the sleeve, to provide an area which may be easily held and gripped by a player. The grip material 54 may be secured on the sleeve 52 and provided with perforations, as indicated in Fig. 2, to provide a roughened surface which may be gripped by the

player. It will also be observed that the wall thickness of the sleeve 52 is increased from the lower toward the upper end of the sleeve, such that the grip 12 will be tapered outwardly toward the upper end of the club, as in present day golf club constructions.

The lower end 56 of the sleeve 52 is provided with a plurality of circumferentially spaced dowel pins 58 extending downwardly around the shaft 8 into mating bores 60 provided in the upper end of a ring 62 secured on the shaft 8. The ring 62 is rigidly secured on the shaft 8 in any suitable manner, such as by shrinking the ring on the shaft, whereby the ring 62 will be retained in a fixed position and will neither turn on the shaft 8 nor move lengthwise on the shaft. Any desired number of dowel pins 58 and mating bores 60 may be provided to assure that the sleeve 52 may be easily assembled on the shaft 8 and the sleeve 52 will not turn on the shaft 8 when the dowel pins 58 are engaged in the bores 60. I have found that it is desirable to provide one pair of diametrically opposed dowel pins 58 and two pairs of diametrically opposed bores 60 to facilitate the insertion of the dowel pins 58 in the ring 62 when a new grip 12 is being assembled on the shaft 8.

The upper end 64 of the sleeve 52 is preferably squared-off normal to the longitudinal axis of the sleeve to receive the enlarged head 66 of an elongated bolt 68. The bolt 68 is threaded into a plug 70 which is in turn rigidly secured in the upper end portion of the shaft 8 in any suitable manner, such as by being pressed into the end of the shaft. The head 66 of the bolt 68 is also preferably knurled to facilitate the threading and unthreading of the bolt from the plug 70. It will be apparent that when the bolt 68 is threaded tightly into the plug 70, the head 66 contacts the outer end 64 of the sleeve 52 and retains the dowel pins 58 in the mating bores 60 to rigidly secure the grip 12 on the shaft 8.

As previously indicated, the grip 12 is preferably provided in various lengths to control the effective length of the shaft 8. In the smallest size of grip 12, the sleeve 52 will be of a length to position the upper end 64 thereof even with the upper end of the shaft 8 when the lower end 56 of the respective sleeve is in contact with the ring 62. The bolt 68 will then be threaded completely in the plug 70 to retain the head 66 firmly in contact with the upper end 64 of the sleeve 52. When a longer shaft 8 is desired, another grip 12 will be used having a longer sleeve 52. In this latter event, the upper end 64 of the sleeve will extend upwardly above the upper end of the shaft 8 when the lower end of the sleeve is in contact with the ring 62. The bolt 68 will then be only partially threaded in the plug 70 to bring the head 66 into contact with the upper end 64 of the sleeve. However, since the sleeve 52 slidably fits on the upper end portion of the shaft 8, and the lower end 56 of the sleeve is anchored to the ring 62 by the dowel pins 58 and cooperating bores 60, the sleeve will be held firmly on the shaft and will effectively increase the length of the shaft.

From the foregoing it will be apparent that the present invention provides a novel golf club which may be easily and conveniently adapted to the needs of an individual player. The weight of the club may be controlled as may be desired by controlling the size of the slug 42, with the slug being easily replaceable in the head, and without the necessity of removing the base plate 26 of the head. It will also be apparent that the weight is added or subtracted from the head of the golf club in the vertical plane in which a golf ball is ordinarily hit to provide the maximum benefit in varying the weight of the club. The length of the club may be easily adapted to the needs of an individual player by simply replacing the grip portion of the club with another grip portion of the appropriate length. The grip portion is easily removed from the shaft of the club by simply unthreading the bolt 68 and sliding the grip off of the upper end of the shaft. Conversely, a new grip is easily installed by

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telescoping the grip over the upper end of the shaft; inserting the dowel pins 58 in the bores 60, and threading the bolt 68 back into the plug 70 until the head 66 of the bolt firmly contacts the upper end of the sleeve portion of the grip. It will be further apparent by extending the lower end of the shaft through the head of the club between the rear end of the head and the center of gravity of the head, a minimum twist will be imposed on the club when a golf ball is struck with the correct portion of the club head.

Changes may be made in the combination and arrangement of parts or elements as heretofore set forth in the specification and shown in the drawings, it being understood that changes may be made in the precise embodiment disclosed without departing from the spirit and scope of the invention as defined in the following claims.

I claim:

1. A golf club, comprising an elongated shaft having an upper end and a lower end, a head secured on the lower end of the shaft, a rigid material sleeve on the upper end portion of the shaft having an upper end and a lower end, said sleeve having an inner diameter of a size to provide a sliding fit of the sleeve on the upper end portion of the shaft, a grip wrapping on the sleeve, a ring rigidly

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secured around the shaft in spaced relation from the upper end of the shaft, said ring having circumferentially spaced bores in the end thereof nearest to the upper end of the shaft, a pair of pins secured on the lower end of said sleeve in positions to mate with said bores and prevent turning of the sleeve on the shaft, and means for holding the lower end of the sleeve against said ring.

2. A golf club as defined in claim 1 wherein the upper end portion of said shaft is tubular and said holding means comprises a plug rigidly secured in the upper end of the shaft and a bolt threaded into said plug having a head of a size to contact the upper end of the sleeve when the bolt is threaded into the plug.

3. A golf club as defined in claim 1 wherein said sleeve has an upper end and a lower end and is increased in wall thickness from its lower end to its upper end to taper the grip material applied around the sleeve.

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