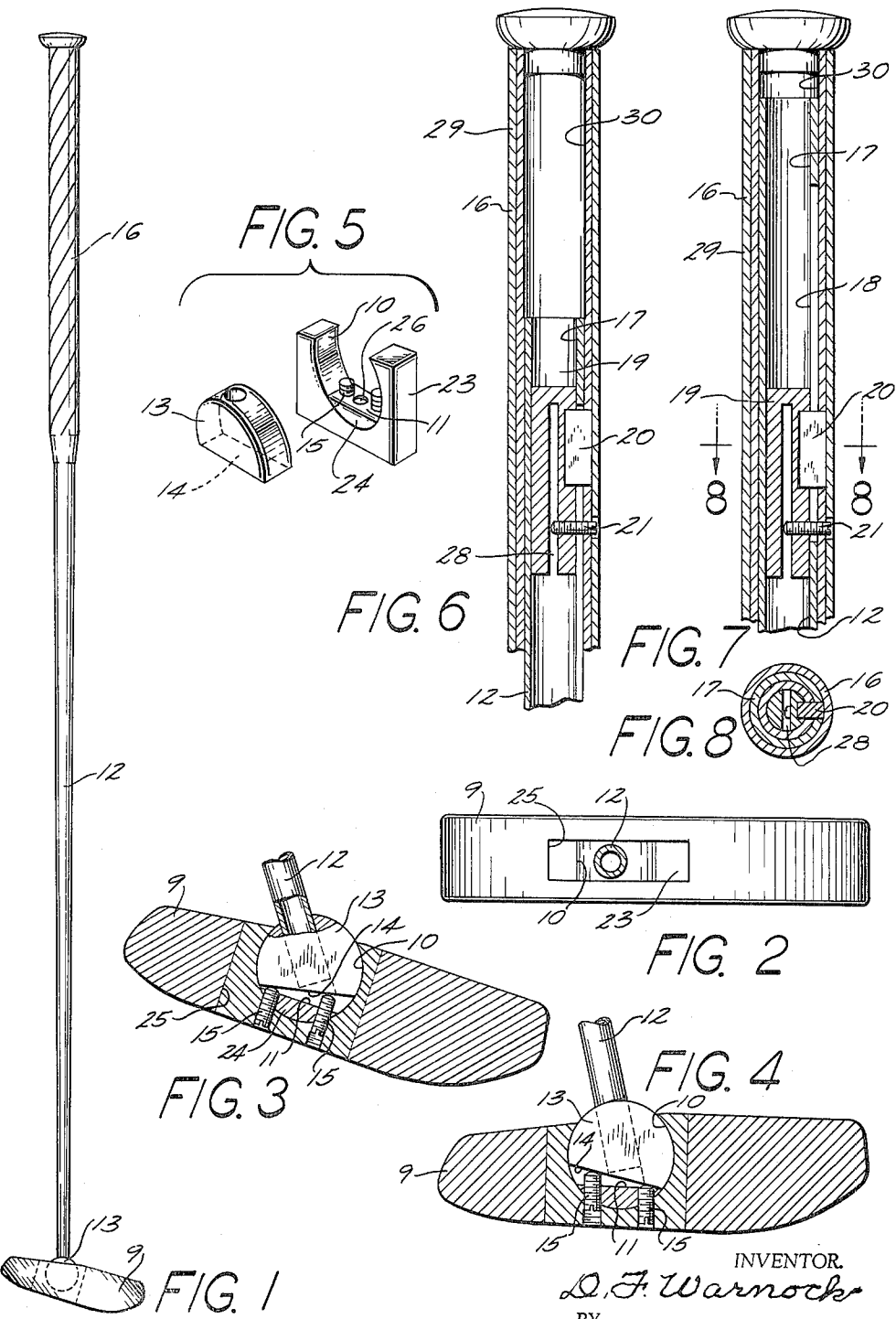


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ADJUSTABLE GOLF CLUB
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ADJUSTABLE GOLF CLUB

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The present invention relates in general to improvements in golfing equipment, and it relates more specifically to improvements in the construction and operation of an adjustable golf club.

The primary object of this invention is to provide a practical adjustable golf club which is simple and durable in structure and flexible in adaptation.

In order to reduce the number of golf clubs required to meet the whims and requirements of diverse golfers, it has heretofore been proposed to provide clubs having angularly adjustable heads and longitudinally variable shafts, but none of these prior club assemblages have proven satisfactory either because they were not sufficiently sturdy and safe, or they were too complicated and tedious to adjust, or they were too difficult to manufacture and sell at moderate cost, or they were too bulky and heavy to manipulate.

It is therefore an important object of the present invention to provide an improved golf club assemblage wherein both the angularity of the head relative to the shaft and the length of the latter may be conveniently varied to accommodate diverse requirements, and in which the parts can be locked in adjusted positions so as to insure maintenance of the adjustment as well as to meet tournament rules.

Another important object of this invention is to provide an improved golf club in which the head angularity or the shaft length may be rapidly altered with minimum effort and with the aid of simple tools.

A further object of the invention is to provide a simplified but highly effective adjustable head assembly for golf clubs which can be manufactured and sold at reasonable prices and used either to suit conditions or to fit diverse people or to replace a number of different types of fixed head clubs normally utilized.

Still another object of the invention is to provide improved instrumentalities for effecting variation in the effective length of a golf club by shifting the handle along the shaft and for locking these parts in relatively adjusted position so as to positively prevent accidental separation thereof.

These and other more specific objects and advantages of the invention will be apparent from the following description.

A clear conception of the features constituting the present improvements and of the construction and usage of a golf club embodying the same may be had by referring to the drawing accompanying and forming a part of this specification in which like reference characters designate the same or similar parts in the various views.

FIG. 1 is a side elevation of an assembled adjustable golf club embodying an adjustable head and shaft involving the invention, showing the head in mid-position;

FIG. 2 is an enlarged section taken transversely through the shaft of the club of FIG. 1, and showing a top view of the head assembly;

FIG. 3 is a similarly enlarged central vertical section taken longitudinally through the head, showing it in one extreme position of adjustment;

FIG. 4 is a likewise enlarged similar section through the head, showing it in the opposite extreme adjusted position;

FIG. 5 is an exploded perspective view of the improved head adjusting assemblage;

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FIG. 6 is an enlarged central vertical section through the upper end of the shaft and handle, showing these cooperating elements shortened to the maximum extent;

FIG. 7 is a likewise enlarged similar section through the shaft and handle with the cooperating elements extended to maximum extent; and

FIG. 8 is a similarly enlarged transverse section through the club length adjusting structure, taken along the line 8-8 of FIG. 7.

While the improvements have been shown and described herein as having been applied to a club having both the head angularity and the effective shaft length adjustable, it is not intended to confine the invention to such a club assemblage; and it is also contemplated that specific descriptive terms be given the broadest possible interpretation consistent with the disclosure.

Referring to the drawing, the golf club shown therein by way of illustration comprises in general, an elongated head 9 having therein a segmental cylindrical recess 10 partially bounded by a chord surface 11; a shaft 12 having thereon a segmental cylindrical block 13 snugly fitting the head recess 10 and which is partially bounded by a longer chord surface 14 facing but spaced from the recess surface 11; a pair of set screws 15 threaded for adjustment within the head 9 and being cooperable with the chord surface 14 of the block 13 to vary the angularity of the head 9 relative to the shaft 12; a hollow handle 16 slidably embracing the hollow end 17 of the shaft 12 remote from the block 13 and covering an elongated slot 18 formed in this shaft end; and an expandable member or plug 19 confined within the slotted shaft end 17 and being secured to the handle 16 by a key 20 and a locking set screw 21 both extending through the slot 18.

The head 9 of the club assembly is preferably constructed of durable wear-resistant metal, and in order to facilitate production of the segmental cylindrical recess 10, it may be formed by initially drilling a round hole laterally through a separate prismatic metal piece 23 and by permanently attaching a metal segment 24 having the segment surface 11 thereon within the bottom of this hole, as shown in FIGS. 3 and 4. The segmental cylindrical block 13 which is eventually permanently confined within the recess 10 before the metal piece 23 is inserted and firmly secured within a rectangular hole 25 in the head 9 may be formed of a short section of solid bar stock having the segment surface 14 formed thereon; and the shafts 12 are usually formed of tubular metal stock of gradually diminishing diameter and may be permanently secured to the block 13 in any desired manner, either before or after this block 13 and the metallic bearing piece 23 are confined within the head 9.

The set screws 15 may be screw threaded in the piece 23 and are adjustable with the aid of an ordinary screwdriver to cause the head 9 to assume various angular positions relative to the shaft 12 as indicated in FIGS. 1, 3, and 4, and when these screws are both driven home into engagement with the block surface 14, the head 9 will be locked to the shaft 12 while the two surfaces 11, 14 will also function to positively limit the extent of such angular head adjustment in either direction. It may be desirable in order to prevent the segment 24 from becoming displaced within the recess 10 to provide a pin 26 as shown in FIG. 5, and the prismatic piece 23 with the block 13 confined therein should also be permanently secured in any desired manner within the rectangular hole 25 of the head in order to convert the head 9 together with the piece 23 and segment 24 into a unitary structure.

As previously indicated, the hollow end 17 of the shaft 12 is provided with an elongated slot 18 and is slidably embraced by the hollow handle 16 which normally covers the slot, and the elongated expandable plug 19 is formed of resilient metal or other material and is bifurcated lon-

gitudinally as shown in FIGS. 6, 7, and 8 by an elongated slit 28. The handle 16 usually comprises several concentric tubular portions 29, 30, the outer portion 29 of which provides the grip while the inner portion 30 snugly but slidably embraces the shaft end 17, and the plug 19 is firmly attached to the inner portion 30 of the handle 16 by the key 20 which is normally covered and concealed by the outer gripping portion 29. The set screw 21 is screw threaded in the inner handle portion 30 and coacts with one of the resilient bifurcations of the plug 19 to release this plug from the shaft end 17, but this set screw 21 is manipulable through an opening in the outer handle portion 30 to expand the plug and to thereby lock the handle 16 in various positions of adjustment longitudinally of the shaft 12.

When the various parts of the improved golf club unit have been properly constructed and assembled as shown, the head 9 may be readily adjusted to vary its angularity relative to the shaft 12 and handle 16 by manipulating the set screws 15, and the effective length of the club may also be adjusted by manipulating the set screw 21, and both of these adjustments may be effected with the aid of the same screwdriver. The maximum angular adjustment of the head 9 is limited by the spacing of the chord surfaces 11, 14 to the extent shown in FIGS. 3 and 4, but the head may also be adjusted to any intermediate angle and locked in adjusted position with the aid of the set screws 15. The maximum extent to which the handle and shaft assemblage may be elongated or shortened is limited by the length of the slot 18 and its engagement with the key 20 and set screw 21, but the length of adjustment of the club may also be varied to any intermediate point with the aid of the set screw 21, and in both cases the set screws can be utilized to firmly lock the parts in adjusted positions.

From the foregoing description, it will be apparent that the present invention in fact provides a simple, compact, and readily manipulable assemblage.

The improved club can obviously be conveniently adjusted to vary the angularity of the head 9 relative to the shaft 12, and the head may be locked in various positions of angular adjustment with the aid of the set screws 15 within the limits defined by the stop surfaces 11, 14 as depicted in FIGS. 3 and 4. The effective length of the club may also be conveniently varied and locked in adjusted position with the aid of the set screw 21 and the expandable plug 20, and the slot 18 in the shaft end 17 limits the range of length adjustment. The improved club assemblage has proven highly satisfactory and successful in actual use and can be manufactured and sold at moderate cost.

Various modes of carrying out the invention are contemplated as being within the scope of the following claims particularly pointing out and distinctly claiming the subject matter which is regarded as the invention.

I claim:

1. An adjustable golf club comprising, a head having therein a substantially cylindrical recess bounded on one side by a chord surface, a shaft having thereon a cylindrical block snugly fitting said recess and also bounded on one side by a chord surface, the recess having a shorter chord surface than the chord surface of the block and said surfaces being spaced apart to permit rotary adjustment of said head relative to said block, and means on said head coacting with the chord surface of said block at spaced locations therealong for positively clamping the block in various positions of adjustment within said recess.

2. An adjustable golf club comprising, a head having therein a recess bounded by arcuate surfaces constituting sections of a circle and a chord of the circle, a shaft having thereon a block shaped to snugly fit said recess but being provided with a chord surface facing and spaced from the recess chord surface to permit limited rotation of said shaft and block relative to said head, and adjustable means on said head and coacting with said chord surface of the block to positively clamp the block within the head recess in any selected angular position relative to the axis of said circle sections and within the limits of rotation as permitted by said chord surfaces.

3. An adjustable golf club comprising, a head having therein a recess bounded by surfaces constituting sections of a cylinder and a chord of the cylinder, a shaft having thereon a block shaped to snugly fit said recess but being provided with a chord surface facing and spaced from the recess chord surface to thereby permit limited rotation of said block within the recess, and spaced set screws carried by said head and coacting with said chord surface of the block on opposite sides of its axis of rotation to clamp the block within the head recess in various angular positions relative to the axis of said cylinder sections.

4. An adjustable golf club according to claim 3, wherein the chord surface of the recess is formed by a segmental block secured within the recess.

5. An adjustable golf club according to claim 4, wherein the set screws extend through the segmental block and retain the same in position.

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