

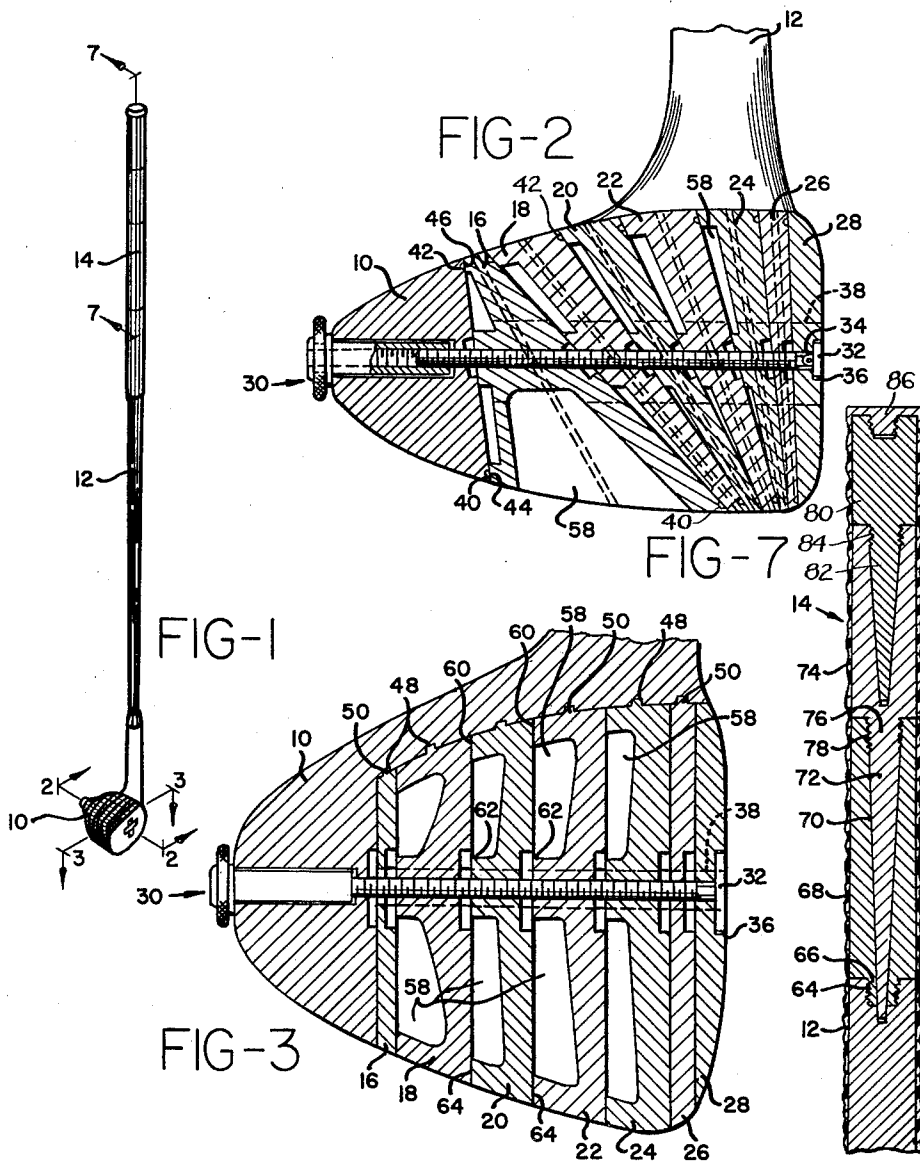
June 22, 1965

A. E. W. THOMAS
GOLF CLUB INCLUDING DETACHABLE BALL STRIKING
FACES OF VARIOUS LOFTS

3,190,651

Filed Sept. 10, 1962

2 Sheets-Sheet 1



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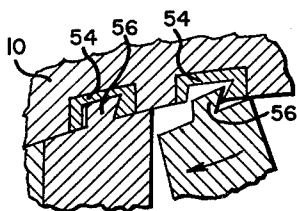


FIG-5

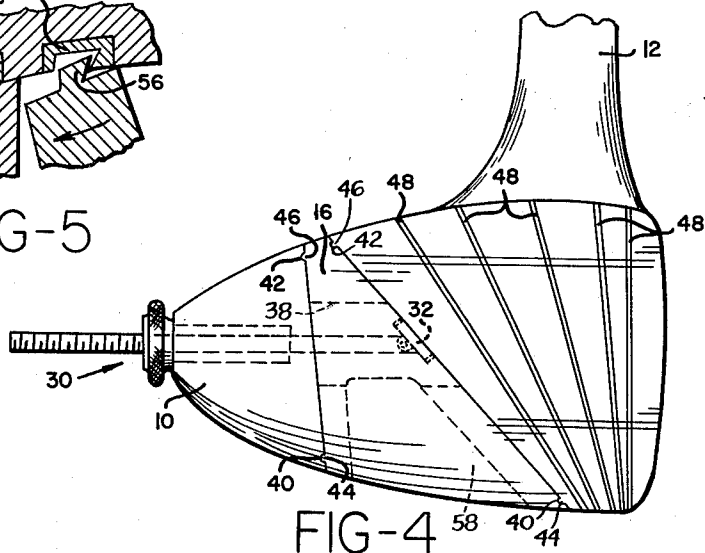


FIG-4

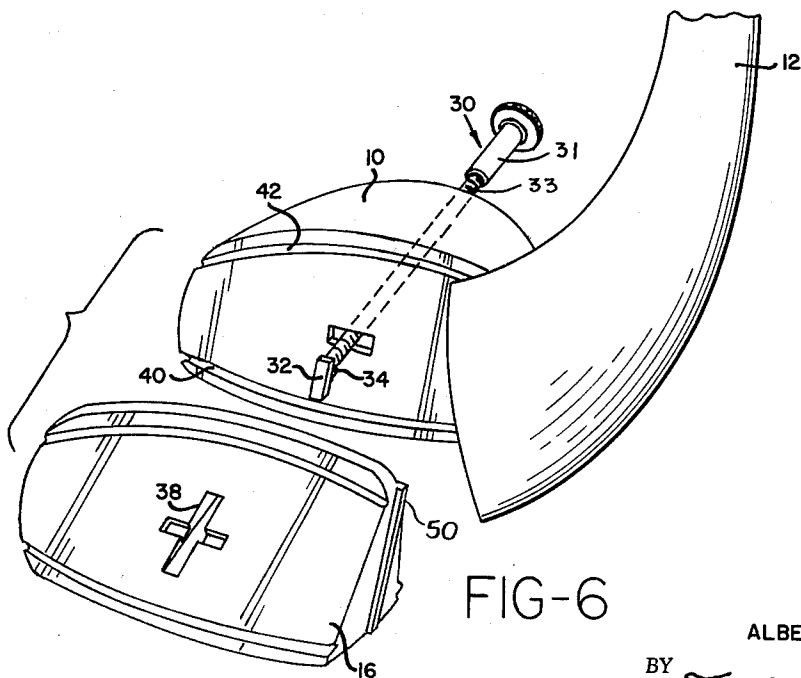


FIG-6

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GOLF CLUB INCLUDING DETACHABLE BALL STRIKING FACES OF VARIOUS LOFTS

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9 Claims. (Cl. 273-79)

This invention relates to a golf club arrangement and more particularly to a club arrangement which is readily adaptable to perform the functions heretofore possible only with a group of clubs, and with each club being adapted for separate and distinct usage.

One of the major difficulties encountered by a participant engaging in the game of golf was the necessity of employing numerous separate clubs, each so constructed as to perform a relatively narrow range of operation. The shortcomings have been that such a set of clubs were expensive to purchase, cumbersome to carry around the golf course and difficult to use with proficiency.

Attempts have been made in the past to utilize a single club having an adjustable head which could be swiveled into various angular positions. Such a device has proven unsatisfactory for the reason that the swivel head has a tendency to become loosened during usage with resultant loss of accuracy in the angular setting of the club face. Also, such a device was lacking in means or provision for selectively lengthening or shortening the club shaft relative to the selected angle of the club face. Furthermore, such a device was lacking in means for varying the club weight and was confined to a single constant weight.

With the foregoing in mind, it is an object of this invention to provide a single golf club with provisions for selectively changing the angle of the club face to suit various conditions encountered during the progress of the game.

It is another object of this invention to provide means for selectively lengthening and shortening of the club shaft when the user so desires.

In addition, it is a further object of this invention to provide a single golf club which can be quickly, selectively, and accurately adapted so as to provide a single instrument which can fulfill most all of the myriad situations encountered in the game of golf.

A still further object is to provide a single golf club with variable shaft length, head angle, and head weight.

Other objects and advantages will become more apparent upon reference to the following specification, taken in connection with the accompanying drawings, in which:

FIGURE 1 is a perspective view of the entire golf club;

FIGURE 2 is a transverse sectional view of the club head along the line 2-2 of FIGURE 1;

FIGURE 3 is a longitudinal sectional view along the line 3-3 of FIGURE 1;

FIGURE 4 is an elevational view showing the club head with several of the segmental plates removed;

FIGURE 5 is an enlarged fragmentary view showing a modification of dovetail means for securing several of the component parts;

FIGURE 6 is an exploded perspective view of the club head; and

FIGURE 7 is a longitudinal sectional view of the club shaft along the line 7-7 of FIGURE 1.

Referring to FIGURE 1, the golf club is comprised of a head 10, a shaft 12 integral with the head, and a handle portion 14 formed as part of the shaft at the end thereof opposite head 10.

FIGURE 2 represents the club head being comprised of a fixed portion 10, in combination with several separate wedge shaped plates 16-28. Each plate is removable and comprises a segment of the total club head. The angle of incidence of each plate may be varied so as to

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provide an effective series of club faces each having a pitch corresponding to that of a standard golf club.

The several plates are held in a predetermined and fixed position during operation by fastener means 30.

The fastener means 30 is comprised of a tubular nut 31 having a knurled finger portion and bolt 33, said bolt having at its anterior end a single bar-like key 32 pivotally affixed to the bolt at 34. FIGURE 2 shows the key 32 flush mounted into a horizontal recess 36 in the face of plate 28.

Each of the several plates 16-28 is provided with a similar recess. Each of the several plates 16-28 is also provided with a vertical slot 38 large enough to permit the key 32 to pass through it when rotated vertically.

The fixed portion of the club head 10 is provided on its back forwardly facing wall with upper and lower lateral locating grooves 40 and 42. Correspondingly the posterior of the plate 16 is provided with locating ribs 44 and 46 receivable in the grooves to locate the plate on the head.

Each plate preferably has grooves extending laterally across the face thereof (FIG. 6) and each plate also has ribs on the back to engage the grooves in the plate on which it rests. The forwardmost plate 28 may of course be free of the lateral grooves in the outer face thereof.

In FIGURE 3, the fixed portion of the head 10 is shown to have vertical locating grooves 48 on the forwardly extending side wall thereof provided so as to receive a locating rib 50 for each of the several plate 16-28. These vertical grooves are also seen in FIGURE 4 at 48 and are positioned so as to aid in the locating and fixing of the several plates 16-28 in their respective angular positions. A modification of these vertical locating grooves is shown in FIGURE 5 as being comprised of hardened inserts 54 which are mortised in dovetail fashion to receive a dovetail tenon 56.

The several plates are shown in FIGURES 2 and 3 to be relieved at 58 and elsewhere when possible so as to reduce the over-all weight of these complementary sections. By means of this relief, the various plates are thus provided with locating surfaces shown at 60, 62, and 64 which prevents the accumulation of dirt or other foreign matter from interfering with the accuracy and stability of the setting of the several plates in complementary position. The relieving of the plates also permits control of the weight of the club head for each combination of plates.

Thus described, it is seen that the several plates 16 through 28 are held in rigid complementary position by the fastener means 30 and are precluded from vertical movement by the lateral locating grooves 40 and 42 in head 10 and corresponding ribs 44 and 46 in plate 16 while being further located by the vertical locating grooves 48 in the head and the corresponding ribs 50 in the plates.

In FIGURE 7, the club shaft is shown at 12 having a conical and tapped recess at 64 to receive the threaded portion 66 of the handle segment 68. Similarly, the handle segment 68 has a conical recess 70 to receive a corresponding extension 72 of the next handle segment 74, which is also threaded at 76 so as to be held by the tapped portion 78 of the handle segment 68. Similarly, a shorter handle segment 80 is provided with a conical extension 82 for receiving within the conical recess of handle segment 74, handle segment 80 being held in threaded engagement with handle segment 74 at 84. An end cap 86 is adapted for covering the exposed end of any one of the handle segments.

The pivotal connection of the bar-like key member 32 to the end of the bolt 33 is provided so that the key member will adapt itself in angularity to the angle of the face of the particular segment which it engages. In FIGURE 2, for example, the segment is substantially in a vertical

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plane whereas in FIGURE 4 it will be seen to be inclined to conform to the angularity of the face of segment 16 which it engages.

It will be understood that this invention is susceptible to modification in order to adapt it to different usages and conditions; and, accordingly, it is desired to comprehend such modifications within this invention as may fall within the scope of the appended claims.

What is claimed is:

1. A golf club arrangement comprising; a shaft, a head fixed to the lower extremity of the shaft and projecting laterally therefrom, said head having a notch in the side opposite the shaft with a forwardly facing back wall and a side wall extending forwardly from one edge of the back wall, a plurality of angular, complementary segments receivable in said notch in stacked relation in supporting engagement with said walls, and fastening means extending completely through said segments and head in the region of the center thereof and detachably engaging said segments for detachably holding said segments in stacked, operable position in said notch, each segment having a front or outer face presenting a different angle to the vertical.

2. A golf club arrangement comprising; a shaft, a head fixed to the lower extremity of the shaft and projecting laterally therefrom, said head having a notch in the side opposite the shaft with a forwardly facing back wall and a side wall extending forwardly from one side of the back wall, a plurality of angular, complementary segments receivable in said notch in stacked relation in supporting engagement with said walls, and fastening means extending completely through said segments and head in the region of the center thereof and detachably engaging said segments for detachably holding said segments in stacked, operable position in said notch, each segment having a front or outer face presenting a different angle to the vertical, said fastening means comprising a bolt and nut, said nut being threaded on the bolt at the back of said head, said bolt having a bar-like head member on the end opposite the nut, said segments having central bar-like apertures to permit said head member to pass therethrough when the bolt is in one rotated position, and each said segment also having a bar-like recess in the face thereof angular to and intersecting the said aperture therein for receiving said head member when said bolt is in another rotated position.

3. A golf club arrangement comprising; a shaft, a head fixed to the lower extremity of the shaft and projecting laterally therefrom, said head having a notch in the side opposite the shaft with a forwardly facing back wall and a side wall extending forwardly from one side of the back wall, a plurality of angular, complementary segments receivable in said notch in stacked relation in supporting engagement with said walls, and fastening means extending completely through said segments and head in the region of the center thereof and detachably engaging said segments for detachably holding said segments in stacked, operable position in said notch, each segment having a front or outer face presenting a different angle to the vertical, said fastening means comprising a bolt and nut, said nut being threaded on the bolt at the back of said head, said bolt having a bar-like key member swivelly mounted on the end opposite the nut, said segments having central bar-like apertures to permit said key member to pass therethrough, and each said segment also having a bar-like recess in the face thereof angular to and intersecting the said aperture therein for receiving said key member, the pivotal connection of the key member to the bolt permitting the key member to conform in angularity to the face of any segment engaged thereby, at least each segment behind the outermost thereof having lateral groove means in the outer face thereof and lateral rib means on the back face thereof, said groove means and rib means positioned on the respective segments for inter-engagement when the segments are in stacked operable position on

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the head, said back wall of said notch having lateral groove means to receive the rib means on the innermost segment.

4. A golf club arrangement comprising; a shaft, a head fixed to the lower extremity of the shaft and projecting laterally therefrom, said head having a notch in the side opposite the shaft with a forwardly facing back wall and a side wall extending forwardly from one side of the back wall, a plurality of angular, complementary segments receivable in said notch in stacked relation in supporting engagement with said walls, and fastening means extending completely through said segments and head in the regions of the center thereof and detachably engaging said segments for detachably holding said segments in stacked, operable position in said notch, each segment having a front or outer face presenting a different angle to the vertical, said fastening means comprising a bolt and nut, said nut being threaded on the bolt at the back of said head, said bolt having a bar-like key member swivelly mounted on the end opposite the nut, said segments having central bar-like apertures to permit said key member to pass therethrough, and each said segment also having a bar-like recess in the face thereof angular to and intersecting the said aperture therein for receiving said key member, the pivotal connection of the key member to the bolt permitting the key member to conform in angularity to the face of any segment engaged thereby, the said side wall of said notch having groove means extending generally vertically thereon and each segment having rib means on the one side edge for engagement with the corresponding side wall groove means.

5. A golf club arrangement comprising; a shaft, a head fixed to the lower extremity of the shaft and projecting laterally therefrom, said head having a notch in the side opposite the shaft with a forwardly facing back wall and a side wall extending forwardly from one side of the back wall, a plurality of angular, complementary segments receivable in said notch in stacked relation in supporting engagement with said walls, and fastening means extending completely through said segments and head in the region of the center thereof and detachably engaging said segments for detachably holding said segments in stacked, operable position in said notch, each segment having a front or outer face presenting a different angle to the vertical, said fastening means comprising a bolt and nut, said nut being threaded on the bolt at the back of said head, said bolt having a bar-like key member swivelly mounted on the end opposite the nut, said segments having central bar-like apertures to permit said key member to pass therethrough, and each said segment also having a bar-like recess in the face thereof angular to and intersecting the said aperture therein for receiving said key member, the pivotal connection of the key member to the bolt permitting the key member to conform in angularity to the face of any segment engaged thereby, at least each segment behind the outermost thereof having lateral groove means in the outer face thereof and lateral rib means on the back face thereof, said groove means and rib means being positioned on the respective segments for inter-engagement when the segments are in stacked operable position on the head, said back wall of said notch having lateral groove means to receive the rib means on the innermost segment, the said side wall of said notch also having groove means extending generally vertically thereon and each segment having rib means on the one side edge for engagement with the corresponding side wall groove means.

6. A golf club arrangement comprising; a shaft, a head fixed to the lower extremity of the shaft and projecting laterally therefrom, said head having a notch in the side opposite the shaft with a forwardly facing back wall and a side wall extending forwardly from one edge of the back wall, a plurality of angular, complementary segments receivable in said notch in stacked relation in supporting engagement with said walls, and fastening means extend-

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ing completely through said segments and head in the region of the center thereof and insertable through said segments from the rear and detachably engaging said segments for detachably holding said segments in stacked, operable position in said notch, each segment having a front or outer face presenting a different angle to the vertical, at least some of said segments having weight reducing recess means in the back face inwardly from the periphery thereof and outwardly from the region thereof through which said fastening means passes, the arrangement of said recesses leaving each segment with regions about the periphery and in the center to bear against the next segment therebehind.

7. A golf club arrangement according to claim 3 wherein said groove means and rib means are arcuate.

8. A golf club arrangement according to claim 4 wherein

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in said groove means and rib means are dovetail in cross section.

9. A golf club arrangement according to claim 4 in which said head has wear resistant insert means in said side wall, said groove means being formed in said insert means.

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