

[54] **GOLF CLUB WITH INTERCHANGEABLE HEADS**

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[22] Filed: **Nov. 2, 1973**

[21] Appl. No.: **412,266**

[52] U.S. Cl. **273/80.1; 273/79**

[51] Int. Cl. **A63b 53/06**

[58] Field of Search **273/77 R, 77 A, 78, 79, 273/80 D, 80.1, 167-175**

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[57]

ABSTRACT

A golf club having interchangeable heads, wherein the golf club comprises a shaft having a support plate secured to the lower end thereof. A plurality of interchangeable heads are adapted for attachment to the support plate. The heads each have a projection which projects through an opening formed in the support plate. A movable locking link, such as a spring, is mounted on the support plate and engages the projection for connecting the head to the support plate.

11 Claims, 4 Drawing Figures

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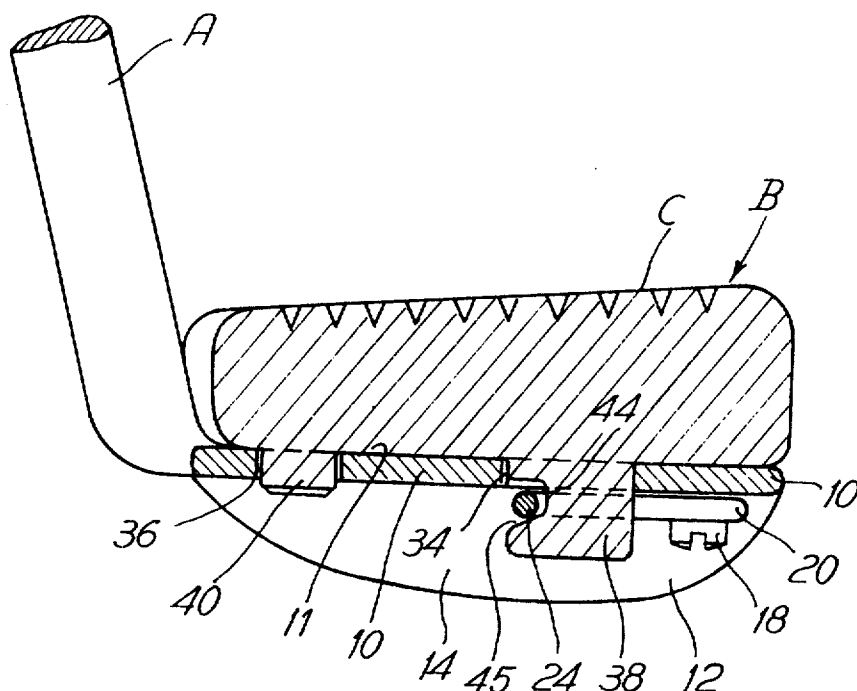


FIG. 1

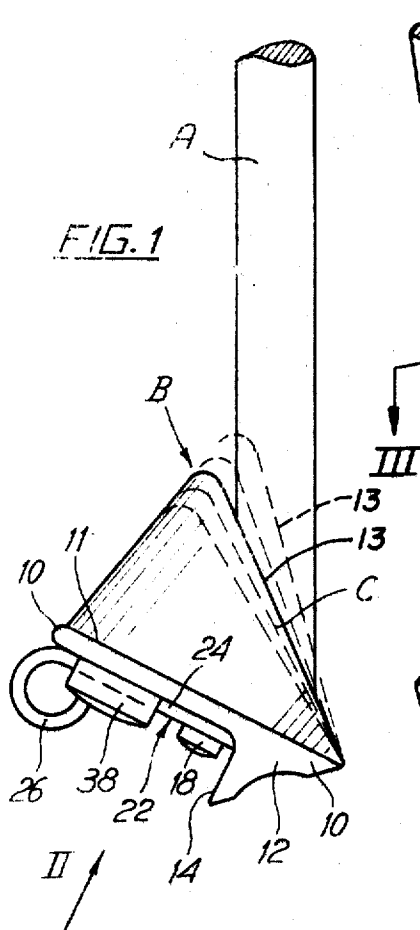


FIG. 2

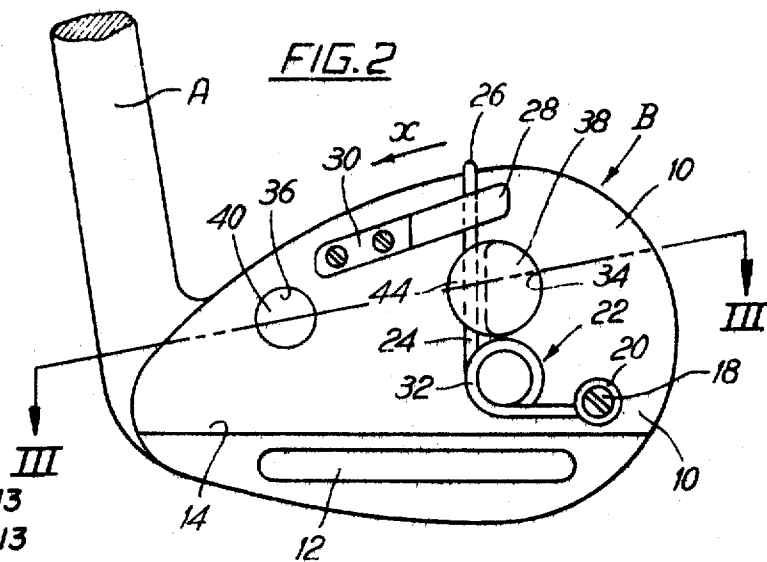


FIG. 3

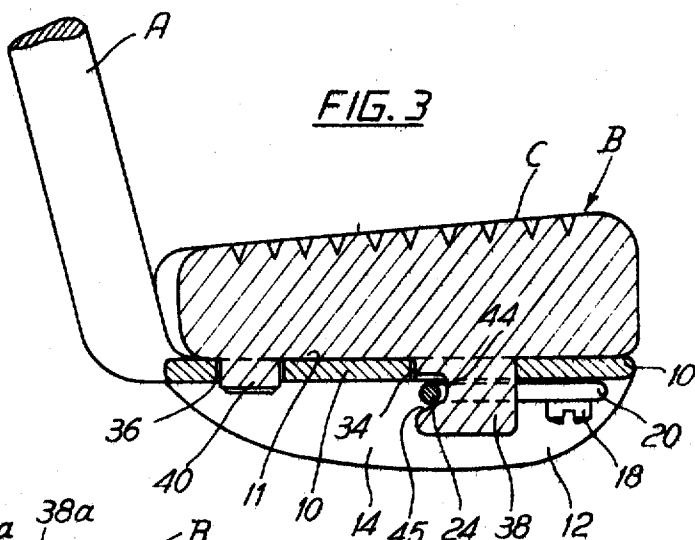
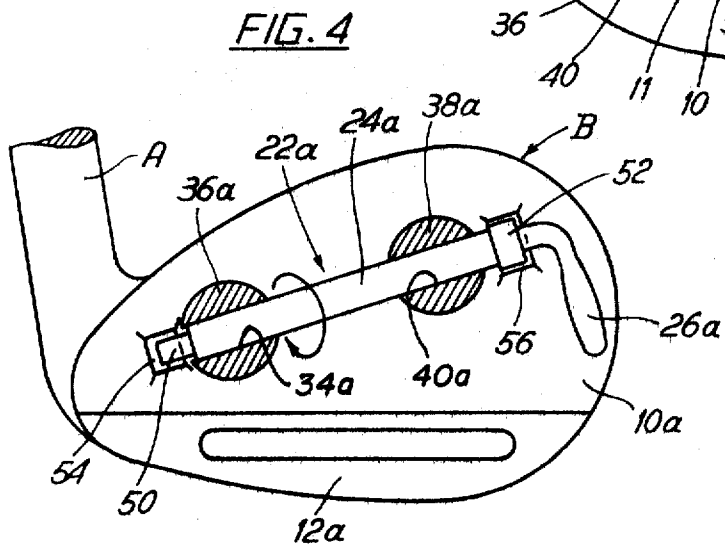


FIG. 4



GOLF CLUB WITH INTERCHANGEABLE HEADS

The present invention concerns a golf club having interchangeable heads.

Golfing involves the use of a large number of golf clubs, each of which is provided with a differently shaped head oriented according to the different requirements which arise in playing golf. However, the necessity of having to possess a large number of different golf clubs constitutes a considerable drawback in many situations, particularly when the clubs have to be carried or transported from one location to another. Due to the large number of clubs involved, and the carrying bag therefor, the overall bag and clubs form a rather cumbersome object.

Because of the necessity of possessing a large number of clubs, this often restricts various persons from playing and enjoying golf, even though a golf course may be readily available. In many instances a person does not have his own golf clubs readily available in view of the difficulty in transporting the clubs about, so that the person cannot always play golf even though he may be desirous of doing so.

Accordingly, the object of the present invention is to overcome the above-mentioned drawback so that a person may play or practice golf whenever desirable, even though that person may be a long distance from his usual residence, without requiring the person to carry a large and cumbersome set of golf clubs with him. The present invention thus removes, to a certain extent, the limitations heretofore set with respect to playing golf.

The purpose of the present invention is to provide a golf club in such a way as to permit the easy substitution of the club heads in such a way that the arrangement and the performance of the club is capable of meeting the various requirements of playing golf.

Obviously, the golf player is still free to choose the desired characteristics of his clubs, for instance the length thereof, according to his personal requirements.

The device of the present invention is characterized in that the club shaft is combined with a supporting plate integral with the free end of said shaft and provided with a matching surface, said surface being advantageously orientated with respect to the axis of the above mentioned shaft and equipped with releasable connecting members to removably retain whichever golf head out of a set of shaped and interchangeable heads is selected each of said heads being equipped with differently shaped and orientated impact surfaces to provide a golf club having the desired characteristics.

According to a preferred embodiment of the device according to the present application, the supporting plate which is integral with the golf club shaft, is provided with holes (or with projections), such holes or projections coacting with each of the heads forming the set of interchangeable heads, whereby any one of said heads can be secured to said plate whenever the golf player wishes to do so, said plate having a link to firmly grip and to retain said shaped heads to the supporting plate in the desired position.

The aforementioned link is advantageously made of at least one small elastic bar, one of the ends whereof is fixed to the back of the supporting plate, said bar engaging a shaped slit provided in one of the pivots which

are integral with the interchangeable head and that engage holes in the supporting plate.

Otherwise, said link can consist of a pin insertable, by elastic constraint, into a hole provided transversally in at least one of the pivots integral with the interchangeable heads and co-operating with the edges of the holes for said pivots, said holes being pierced through the supporting plate.

The invention will be now described in the following description, wherein reference is made to the annexed drawing showing, by way of example, two preferred embodiments of the device according to the present invention.

In the drawings:

FIG. 1 is a side elevation of the lower end of a golf club, provided with an interchangeable head according to the present invention.

FIG. 2 is a view of FIG. 1 in the direction of arrow II.

FIG. 3 is a section taken along line III—III of FIG. 2. FIG. 4, which is like FIG. 2, shows a different embodiment of the invention.

With reference to the above mentioned FIGURES, there is shown a portion of a golf club wherein A shows the lower end of the golf club shaft and wherein B is a head assembly B. In the illustrated case, said head assembly B includes a shaped supporting plate 10, integral with the golf club shaft. Said plate is so disposed as to form an angle having the maximum possible width with respect to the impact surface shown by such golf clubs as are currently used to hit the ball when same is in a critical position.

The front edge of supporting plate 10 has a prismatic projection 12 which forms the tapered heel of the head assembly, the back 14 of said heel being flat. Plate 10 has next to wall 14 a clamping screw 18 to firmly retain the eyelet-shaped end 20 of an elastic rod 22 which has a straight length 24, ending with an actuating portion 26, to form a spring link.

The end of straight arm 24 slides in a guide slot formed in the end 28 of a small square-piece 30, fixed to said plate 10, in such a way as to maintain said arm 24 guided when same is shifted in the direction shown by arrow X of FIG. 2, against its own elastic property, thus ensuring the positioning of said arm to the back face of said plate 10.

In order to enhance the elastic action provided by link 22, the end of arm 24, which is connected to eyelet 20, has one or more than one spirals 32.

Supporting plate 10 has preferably lengthwise to the longitudinal axis thereof, at least two openings 34 and 36, into which corresponding projections or pivots 38 and 40 are respectively received, said pivots being fixed to and projecting outwardly from the backwall of a shaped removable head C, the contour whereof identical with or substantially identical with that of the upper support plate surface 11.

Pivot 38 is provided in such a position as to interfere with the movement of elastic arm 24 and said pivot has, in an appropriate axial position, a notch 44, with one of the walls 45 thereof inclined, in such a way as to converge toward the back wall of the shaped and interchangeable head C.

As a consequence, when arm 24 is brought in engagement with notch 44, said arm 24 exerts, on head C, owing to its own elasticity and to its engagement with

inclined wall 45, such an action as to urge said head snugly against the supporting plate 10.

When the golf player pushes end 26 of elastic arm 24 in the direction of arrow X he disengages said arm from notch 44, thus disengaging also interchangeable head C from supporting plate 10, in such a way as to allow the removal of said head and the substitution thereof with another head having different features.

Each interchangeable head C, as illustrated in FIG. 1, has an impact surface 13 which defines the loft angle of the golf club, and the various interchangeable heads are provided with different loft angles as depicted by the dotted lines illustrated in FIG. 1.

Now, looking at the alternate embodiment shown in FIG. 4, the link 22a for connecting the removable head to the support plate 10a consists of a pin 24a provided with a grip 26a, said pin 24a extending through aligned holes provided in pivots 38a and 36a. Pin 24a cooperates with the edges of the holes 34a and 40a in order to hold the interchangeable head clamped face against face to the supporting plate 10a. To ensure that the head is tightly clamped to supporting plate 10a, the ends of pin 24a have eccentrics 50 and 52 to engage respective projections 54 and 56 on supporting plate 10a, whereby rotation of pin 24a causes the eccentrics to clamp the head tightly against the support plate.

The rotational motion of pin 24a about its own axis, causes supporting plate 10a to be tightly clamped against the interchangeable head, independently from the wear shown by said parts.

The number of shaped and interchangeable heads C which can be fixed to supporting plate 10 can vary in relation to the specific requirements to be met in each single case.

In all cases however, the set of interchangeable heads C which are required to play golf can be varied in accordance with the player's requirements, whilst the set of interchangeable heads C reproduces the characteristics as well as the shape of the heads, forming the usual set of golf clubs.

The present invention consists in utilizing a maximum number of heads with one golf club only to support interchangeable heads C; as a matter of fact, the number of heads can be varied in relation to any desired features of the impact faces of said heads.

Technologically, there is no need for the unit consisting of rod A for the set of interchangeable heads C to offer a solution of continuity as far as compactness is concerned and it is required to maintain the preselected angular position of the impact surface in any possible condition of use.

As a consequence and in accordance with the present invention, the golf player can proceed to the quick application of interchangeable heads C to supporting plate 10, in relation to any of the positions taken by the ball during the game, the impact face of said interchangeable head C defining the most advantageous angular position for hitting the ball.

Therefore, the golf player is enabled at any time to practice golf, without the need to carry with him the set of golf clubs which, heretofore, represented the normal outfit of a golfer, since he has the opportunity to easily carry with him the whole set of interchangeable heads C and golf club A, conveniently arranged within a limited space and hence most easy to carry. It is, of course, possible to vary as well as to modify the device of the present invention; for instance, interchangeable

heads C can be connected to supporting plate 10 by means of one pivot only of whichever shape, for instance a polygonal shape, in order to locate interchangeable heads stably on said plate. Likewise, the members designed to lock said heads C to plate 10 may vary according to the different characteristics to be met in each single circumstance. For instance, said members can be springed cams to engage pivot 38 (and, if it is the case, also pivot 40) by constraint.

It is to be understood that the invention as claimed with the present patent application extends as well to the golf club provided with the devices claimed with the present invention, without surpassing the domain thereof.

I claim:

1. In combination, a golf club and a plurality of interchangeable and uniquely lofted club heads, comprising an elongated club shaft having a support plate fixedly secured to said shaft adjacent the lower end thereof, said support plate being elongated and extending outwardly from said shaft with its longitudinal axis perpendicular to the line of flight, said support plate having opposed front and rear surfaces, the front surface defining a support surface which is oriented at an angle with respect to the axis of said shaft, said plurality of interchangeable heads individually adapted for attachment to said support plate, each of said heads having a front impact surface and a rear mounting surface adapted to be engaged with said support surface when the respective head is mounted on said support plate, the impact surfaces as provided on the different heads being oriented at different angles with respect to the axis of said shaft, and connecting means coacting between said heads and said support plate for permitting each head to be individually releasably connected to said support plate, said connecting means including an opening formed in said support plate and extending therethrough from said support surface to said rear surface and a projection fixedly secured to each of said heads and projecting outwardly from the mounting surface thereof, said projection having a length greater than said opening so as to project through said opening and beyond said rear surface when said head is mounted on said support plate, said connecting means further including a locking member movably mounted on said support plate adjacent the rear surface thereof and engageable with said projection for fixedly connecting the head to the support plate.

2. A golf club according to claim 1, wherein said projection is provided with a sidewardly opening notch formed therein adjacent the free end thereof, and said locking member being movable relative to said support plate between a locking and a release position, said locking member being engaged in said notch when in said locking position.

3. A golf club according to claim 2, including resilient means associated with said locking member for normally resiliently urging said locking member into said locking position.

4. A golf club according to claim 2, wherein said locking member comprises an elongated spring member having a portion thereof continuously urged toward said locking position.

5. A golf club according to claim 2, wherein the notch as provided in said projection has an inclined surface which converges toward the rear surface of said support plate, and said locking member engaging said

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inclined surface when in said locking position for urging the head into tight clamping engagement with the support plate.

6. A golf club according to claim 5, wherein said locking member includes an elongated spring arm which is adapted to engage said notch and which is normally resiliently urged into said locking position, said spring arm having the free end thereof projecting outwardly beyond said notch so as to be engageable by the finger of a golfer to permit movement of same into the release position.

7. A golf club according to claim 5, wherein said support plate has a second opening extending there-through between the front and rear surfaces thereof, and each of said heads having a second projection fixedly secured thereto and projecting outwardly from the mounting surface thereof, said second projection being adapted to extend into said second opening when the respective head is mounted on the support plate.

8. A golf club according to claim 1, wherein said support plate has a second opening extending there-through between the front and rear surfaces thereof, and each of said heads having a second projection fixedly secured thereto and projecting outwardly from the mounting surface thereof, said second projection being adapted to extend into said second opening when the respective head is mounted on the support plate.

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9. A golf club according to claim 1, wherein said projection has a hole formed therein and extending transversely therethrough, said hole being located near the free end of the projection, and said locking member including a straight portion adapted to extend through said hole for fixedly connecting said head to said support plate.

10. A golf club according to claim 9, wherein said locking member is rotatably supported on said support plate and has an eccentric disposed in engagement with said support plate for causing the head to be moved into clamping engagement with the support plate upon rotation of the locking member relative to the support plate.

11. A golf club according to claim 10, wherein said support plate has a second opening extending there-through and each head having a second projection fixed thereto and projecting outwardly from the mounting surface thereof, said second projection being adapted to extend through said second opening, said second projection also having a hole formed therein and extending transversely therethrough substantially in alignment with the hole formed in said first-mentioned projection, and the straight portion of said locking member extending through the holes formed in both of said projections.

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