

April 10, 1928.

1,665,523

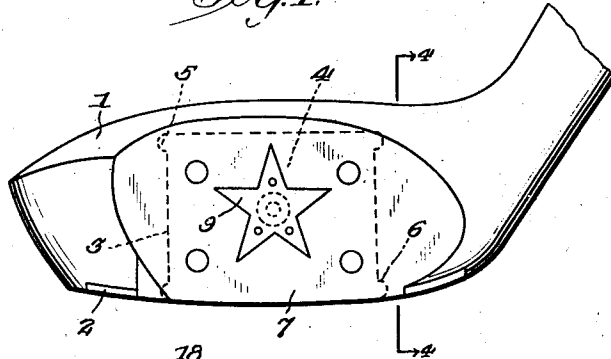
E. C. BOYCE

GOLF CLUB

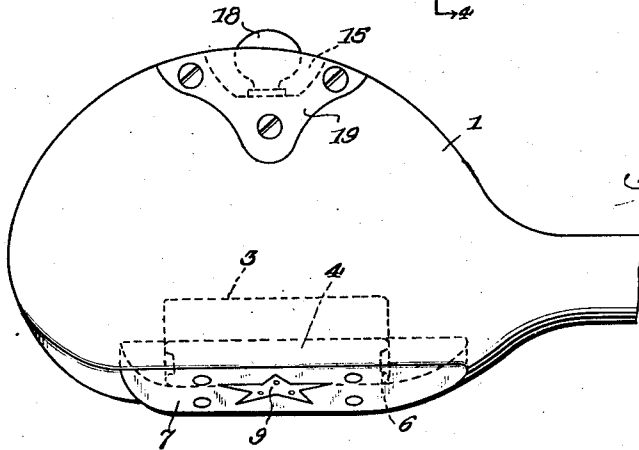
Filed Jan. 7, 1928

2 Sheets-Sheet 1

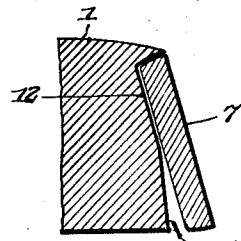
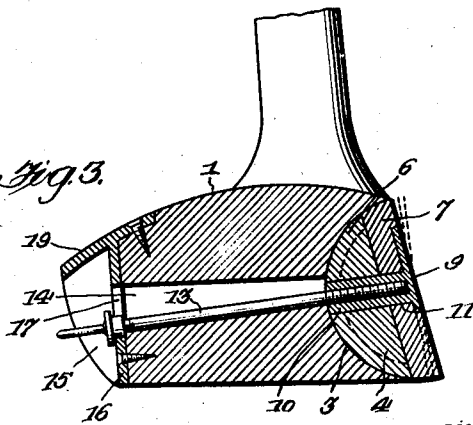
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



*Fig. 4.*

INVENTOR.

*E. C. Boyce,*

BY

*Frederick Ward Rospe*

ATTORNEY.

April 10, 1928.

1,665,523

E. C. BOYCE

GOLF CLUB

Filed Jan. 7, 1928

2 Sheets-Sheet 2

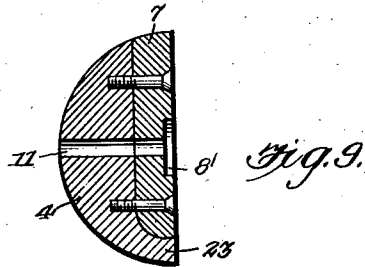
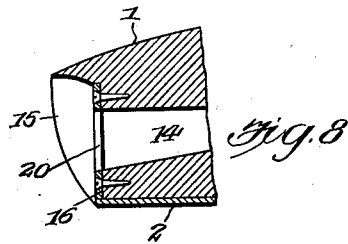
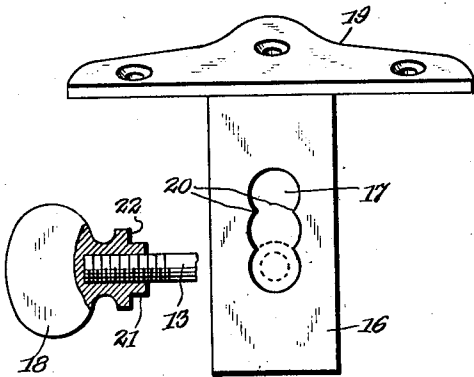
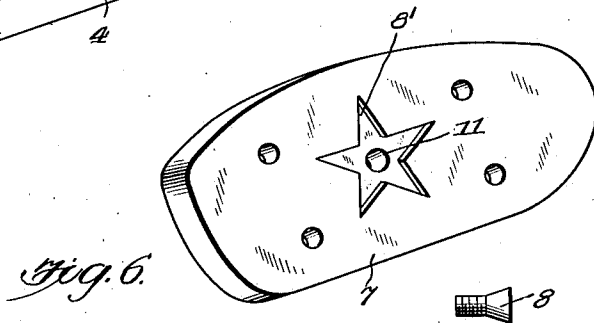
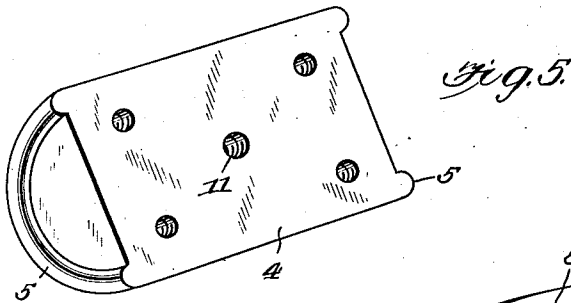


Fig. 7.

INVENTOR.

E.C. Boyce,

BY

*Fredrick Ward Rouse*

ATTORNEY.

Patented Apr. 10, 1928.

1,665,523

# UNITED STATES PATENT OFFICE.

EDWARD C. BOYCE, OF NEW YORK, N. Y.

GOLF CLUB.

Application filed January 7, 1928. Serial No. 245,123.

My present invention relates to golf clubs and more particularly to clubs of the wood club type. A wood club is one having a club head usually made of wood and sometimes weighted, secured to a shaft of wood or metal; the head is occasionally made of aluminum or other metal but the club is none the less called a wood club because of its peculiar characteristics and uses. My invention is not limited to the material to which the club head is made. My purpose is to provide a single club with an adjustable striking face, for the purpose of varying the loft or inclination of the striking face.

The game of golf is usually played with two wood clubs, the driver and the brassie; and many golfers use a third wood club, viz, the spoon, these three in addition to four or more iron clubs. The advantages of an adjustable or so-called universal club are obvious, and there have been various proposals made for altering the loft of a single golf club so that it could do the work of a number of clubs, by making a simple adjustment. Among these advantages are decreased cost of clubs, a lighter weight for the golfer or his caddie to carry, etc., but to the best of my knowledge no adjustable clubs have gone into extensive use because of fundamental structural, etc., defects.

Adjustable iron clubs as heretofore proposed are scarcely feasible, as expert players generally concede that the iron clubs, generally speaking, should be progressively heavier as the loft decreases, and should be provided with progressively shortened shafts as the weight decreases. However, there is no inherent objection to a universal club designed to replace the three wood clubs above mentioned, because it is generally agreed that any given golf player's driver and brassie should be identical in all respects except loft. The spoon, which is more lofted than the brassie, usually has a slightly shorter shaft, and a club head which is a trifle heavier, but the differences, except in loft, are too trivial to be of real importance to any but the most expert golf players. Now, a set of wood clubs which are "matched" (i. e. rendered identical,—with the exceptions just noted,—in balance and weight, and in the length and

resiliency of the shaft) is very expensive. A single, adjustable club could be made to sell at a price not substantially greater than the cost of a single, unmatched club.

Heretofore, proposals for making a club adjustable have usually involved the provision of a joint between the lower end of the shaft and the heel of the club head. This is not only structurally weak, but also objectionable because the mass of metal in the joint at the heel of the club renders the club heel-heavy and toe-light: compensation by weighting the toe is not practicable because then the whole club is too heavy. It has also been proposed to make clubs less expensive by providing an adjustable club of the wood club type in which the shaft is fixed permanently to a solid club head, thus avoiding the unsatisfactory joint between these two elements, the adjustability of the striking face being obtained by the use of three or more removable elements received in recesses in the club head, these elements having ball-striking surfaces of different lofts. This proposal, however, has the obvious disadvantage of requiring the golf player to carry a set of interchangeable faces or plates with the consequent increased weight and the possibility of losing one or more of the detachable plates. Furthermore the repeated insertion and removal of these interchangeable plates tends to wear away the material of which the club head is made, increasing the size of the recess in the said head, and resulting in a loose fit between the head and the face secured thereto.

In accordance with my present invention the club head, which is preferably secured permanently and fixedly to the shaft, supports a member or semi-cylindrical roller which has a surface constituting a ball-striking face, said member being movably or rotatably mounted in the head for varying the loft of the club, and means being provided for holding said member or semi-cylindrical roller in any one of a number of selected or predetermined positions of adjustment. I prefer that these positions be predetermined and that the structure be such that the face of the club cannot be held in any other position of adjustment than those specifically provided. This makes for uniformity. Nevertheless, it is within the scope of my in-

vention so to construct the club that the player may set the face at any angle desired within the range of adjustment provided. The semi-cylindrical member fits in a recess of corresponding shape in the head, and has a plate secured to it, which provides the ball-striking face of the club, and I prefer to provide the roller and the recess with grooves and slots so that the roller will be incapable of moving in the recess otherwise than in a movement of rotation. A rod extending rearwardly from the assembled roller and plate, through a slot bored through the club head, passes out at the rear of the club head to receive a nut, which can be tightened against the rear surface of the club head to pull the roller firmly against its cylindrical seat and hold it in the chosen position of adjustment. These and other characteristics of the invention, the scope of which will be indicated in the appended statement of claim, will now be described in detail with reference to the accompanying drawings, wherein:

Fig. 1 is a face view of a club embodying my invention.

Fig. 2 is a top plan view of the club.

Fig. 3 is a transverse section thereof, from front to rear.

Fig. 4 is a fragmental, detail sectional view on line 4-4 of Fig. 1.

Fig. 5 is a perspective view of the roller with the striking face removed.

Fig. 6 is a perspective view of the striking face, and also shows one of the screws for securing it to the roller.

Fig. 7 is an enlarged assembly view showing the plate, provided at the rear of the club head, and the cooperating thumb nut.

Fig. 8 is a transverse section of the rear part of the club head, showing a modification.

Fig. 9 is a section of a modified roller.

The club head 1, which may or may not have a conventional brass, aluminum or other sole plate 2, is formed with a semi-cylindrical recess 3 in its face. The recess 3 receives a semi-cylindrical roller 4, each end of which has a circularly curved projection 5, fitting in a groove 6 at each end of the recess. The roller may be made of an indurated fibrous compound, or of a light, strong metal or alloy such as duralumin.

A striking face 7 is adapted to be secured to the roller 4 by screws 8, and the ends of the striking face extend beyond the ends of the roller. This face is preferably provided with a shallow recess 8' to receive a plate 9 of brass or the like. This plate may have any of the conventional shapes used in golf clubs to mark the point on the face which should engage the ball, i. e. to mark the "sweet spot"; the drawing shows the well known star design. A sleeve 10 is formed as an integral extension of the plate 9 and

passes through aligned openings 11 in the striking face and the roller, terminating at the rear surface of the latter.

It is to be understood that the face of the club head is not only recessed at 3 to receive the roller, but is also slightly cut away beyond the ends of the recess to provide space within which the striking face may move to vary the loft. The cut away surfaces are shown in section at 12 in Fig. 4. Thus the ends of the striking plate 7, beyond the ends of the roller, have no solid support behind them. However, the plate 7 is of substantial thickness, and it is preferred to make this plate of ivory, or of artificial ivory such as ivoride, which has been found to be more than strong enough to withstand the stress of the most powerful blow that can be delivered at its ends. Moreover a good golf player almost invariably strikes the ball with the center of the club face.

The sleeve 10 is interiorly threaded and receives the threaded end of a rod 13, preferably of hardened steel. This rod extends through a slot 14 cut through the club head from the recess 3 to a recess or vertical groove 15 cut out of the rear surface of the club. A plate 16 is secured against the base of the groove 15 and has an opening 17 in register with the slot 14. The rod 13 projects through the opening 17, and its end is threaded to receive a thumb nut or the like 18. By tightening this nut against the plate 16, the striking plate 7 may be locked at any desired degree of loft within the range of the club, Fig. 3 showing the pitch of a spoon. The range of loft variation is not great, the difference between the two extremes (driver and spoon) rarely exceeding ten degrees. The threads at the rear end of the rod 13 are pitched oppositely to those at the forward end. The plate 16 has a cap 19 which preserves the normal contour of the club head and conceals the mechanical elements beneath it.

It is preferred to provide the opposite side walls of the slot 17 with juxtaposed, inward projections 20. The tips of these projections are far enough apart to permit the rod 13 to move vertically between them, but they prevent vertical movement of a sleeve 21 provided on the nut 18. Thus, when the nut is tightened on the rod, the sleeve 21 will positively hold the rod 13 from moving up or down, and the rod is put under tension by the pressure created between the surface of the plate 16 and a shoulder 22 on the nut.

In Fig. 8 is shown a modified and somewhat simplified structure, in which, when cutting out the recess or groove 15, the upper portion of the club head above the top of the plate 16 was left intact. Therefore the cap 19 is omitted from the plate 16, and the plate terminates short of the top sur-

face of the club head. In this way, the club head, viewed from above, has exactly or almost exactly the same appearance as the ordinary club head.

5 In Fig. 9, the plate 7 terminates a little short of the bottom of the roller 4, and the material of which the roller is composed, (in this case preferably duralumin) is extended forwardly to form a lower lip 23, 10 which protects the plate 7 when the club strikes the ground.

Various modifications may be made in the structures described without departing from the spirit of the invention or from the scope 15 of the appended claims. For instance, the slot 14 might be continued downwardly until it opens on the sole of the club. The rod 13 could then be integral with or permanently secured to the sleeve 10, and the 20 roller and rod together could be rolled into the recess 3 by entering the bottom of the recess, whereafter the sole plate 2 could be secured in place. Thereupon, the plate 16 could be attached, and the parts would be 25 permanently kept in assembly.

Also, the plate 16 may be curved about the center of curvature of the recess 3, instead of being vertical, as shown. This would be desirable in the case of a club not 30 designed to have only three predetermined positions of adjustment, but capable of being set at any position within the range of adjustment.

The cooperating projections 5 and grooves 35 6 make it impossible to put the roller into the recess except by rotary movement, so that if the nut 18 should be lost, the roller could not get out of its recess.

If desired, the recessed and cut-away parts 40 of the club head, when the latter is made of wood, may be lined with a metallic lining, e. g. one of duralumin, to avoid the provision of a thin wooden knife-edge at the top of the club head, which edge might be 45 broken as a result of an inaccurate shot.

I claim:—

1. A golf club of the wood club type, having a head secured to a shaft, a member supported by the head and having a surface 50 constituting a striking face, said member being mounted in the head for angular movement therein to vary the loft of the club, and means for holding said member in selected positions of adjustment.

55 2. A golf club of the wood club type having a head permanently and fixedly secured to a shaft, a member supported by the head and having a surface constituting a striking face, said member being mounted 60 in the head for angular movement therein to vary the loft of the club, and means for holding said member in predetermined positions of adjustment.

3. A golf club as claimed in claim 1, in

which the movably mounted member com- 65 prises an element having a semi-cylindrical surface fitting in a recess in the head, and a plate secured to the said element, and forming the face of the club.

4. A golf club as claimed in claim 2, in 70 which the movably mounted member comprises an element having a semi-cylindrical surface fitting in a recess in the head, and a plate secured to the said element, and forming the face of the club.

5. A golf club as claimed in claim 1, in 75 which the head has a recess for the movably mounted member, and said member and the recessed surface in the club head have co-operating means adapted to prevent said 80 member from moving otherwise than in a movement of rotation.

6. A golf club as claimed in claim 2, in 85 which the head has a recess for the movably mounted member, and said member and the recessed surface in the club head have co-operating means adapted to prevent said 90 member from moving otherwise than in a movement of rotation.

7. A golf club of the wood club type, hav- 90 ing a head, a member having a ball-striking surface, and rotatably supported by the head, said member being adapted to be set at and held in selected positions of adjust- 95 ment, a rod secured to the rotatably mounted member and projecting rearwardly through an opening in the club head, a screw nut threaded on the rear end of the rod, and means on the rear face of the club head to be engaged by the nut.

8. A golf club as claimed in claim 7, in 100 which the means on the rear face of the club head is a plate having a vertical slot whose edges are irregular, and the nut is movable longitudinally of the slot when 105 it is unscrewed from the rod far enough to be withdrawn from the plate secured to the rear face of the club head, said nut having a sleeve part adapted to be locked against vertical movement in the slot when the 110 nut is tightened on the rod.

9. A golf club of the wood club type having a shaft, a head secured to the shaft, a member rotatably mounted in a recess in the club head, said member having a ball- 115 striking face whose loft is varied by rotary adjustment of the rotatably mounted member, said member being composed of a plate and a semi-cylindrical element secured thereto, the plate having a recess and being 120 provided with a perforation aligned with a similar perforation extending through the semi-cylindrical element, a headed part being fitted in the recess and having a rear- 125 ward extension extending into the perforation in the semi-cylindrical element, and a rod secured to the rearward extension and extending through an opening in the club

4  
head for adjusting the angular position of the semi-cylindrical element.

8 10. A golf club as claimed in claim 1, wherein the movably mounted member includes a semi-cylindrical roller and a striking face, said roller having a forward projection to underlie and protect the lower edge of the striking face.

10 11. A golf club as claimed in claim 2, wherein the movably mounted member includes a semi-cylindrical roller and a strik-

ing face, said roller having a forward projection to underlie and protect the lower edge of the striking face.

12. A golf club as claimed in claim 7, in which the upper surface of the club head is extended rearwardly to overlie the nut on the rear end of the rod.

In testimony whereof I affix my signature.

EDWARD C. BOYCE.