Nov. 11, 1924. 1,515,390

E. L. HUBBARD

GOLF CLUB

Filed Dec. 27, 1923

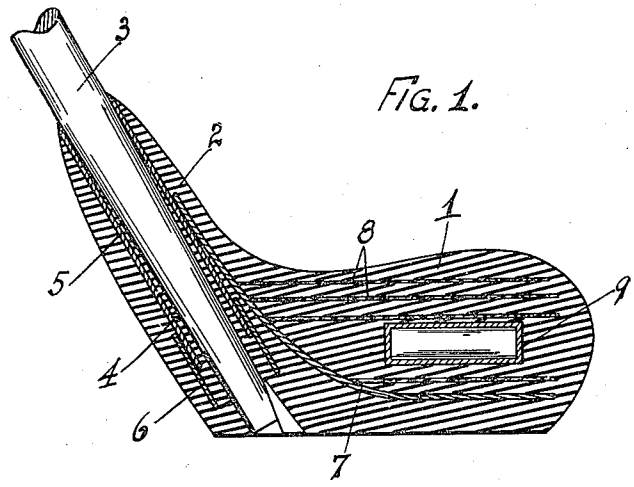


FIG. 1.

FIG. 2.

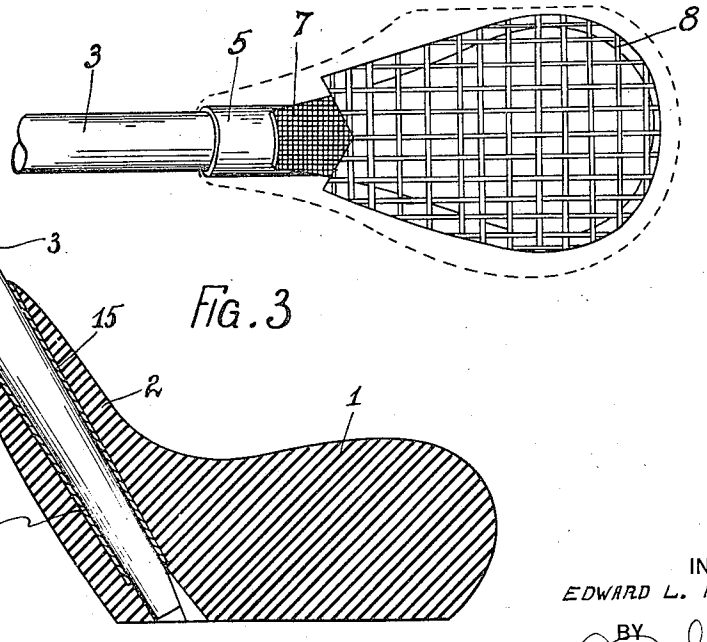


FIG. 3

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EDWARD L. HUBBARD, OF OAKLAND, CALIFORNIA.

GOLF CLUB.

Application filed December 27, 1923. Serial No. 682,934.

To all whom it may concern:

Be it known that I, EDWARD L. HUBBARD, a citizen of the United States, residing at Oakland, in the county of Alameda and State of California, have invented certain new and useful Improvements in Golf Clubs, of which the following is a specification.

My invention is an improved golf club.

The object of my invention is to provide a reinforcing and lightening means for molded clubs. The material of which molded clubs are formed is so heavy that it is impractical without some lightening material formed therein, it is also necessary to reinforce certain parts such as the neck and the body at the base of the neck. This is accomplished in my improved club, with inexpensive and highly efficient materials, which are readily formed in place.

In the drawing in which my invention is illustrated I have shown the preferred form, but it may also be embodied in other forms, and in this application I wish to cover my invention in whatever form it may be embodied.

Figure 1 is a longitudinal sectional view of my club.

Figure 2 is a plan view of my reinforcing and lightening material in position to be molded into the club.

Figure 3 is a longitudinal sectional view of a modified form of golf club.

Referring more particularly to the drawing, the numeral 1 indicates the body of my golf club and 2 the neck thereof,—which are preferably molded of a phenol composition. The shaft 3 is adapted to enter a tapered hole 4 in the neck 2 of the club.

A tubular neck reinforcing 5 is preferably formed of a non-metallic fibrous substance, which will form a homogeneous club. The hole 4 extends through the tube 5, and is tapered whereas the tube is of the same diameter throughout. A short tubular section 6 of greater inside diameter than the tube 5 is secured to the lower end thereof. The object of this section 6 is to allow the material of which the club is formed to flow upwardly within the tube 5 to form the tapered hole 4. Without an enlarged opening at the lower end of the tube 5, the pressure required in molding would crumple the tube longitudinally and thus defeat the prime object.

A point of weakness in a molded club is the junction of the neck 2 with the body 1. To reinforce this point I provide a reinforcement 7, which extends from the tube 5, downwardly within the neck 2 and horizontally into the body 1, said reinforcing being adjacent the upper surface of the neck. The reinforcing 7 may be formed of a fibrous or metallic strip, as desired.

Lightening and reinforcing strips 8 are placed horizontally in the body 1, and are preferably formed of a loose woven cloth having large interstices therein, through which the molded material flows.

To further lighten the body of the club a tube 9 is placed therein. The ends of this tube are sealed, thus forming an air pocket, and by varying the size of this tube the weight of the club may be accurately determined.

It may be advisable in certain instances to form the tube 5 of wire screen, in which case the lower end would be flared outwardly as previously described.

The neck reinforcing tube 15 is formed of a non-metallic substance, and is tapered to conform to the shape of the shaft 3. In molding the club the core pin (which is the same shape as the shaft 3) is inserted into the tube 15, thus preventing it from wrinkling or collapsing under the high pressure maintained in the mold.

The tube 15 is coated with a suitable cement prior to its insertion in the mold, and heated at a temperature of 180° for about two or three hours, when it partially hardens and adheres to the tube.

When the tube is placed in the mold, the heat softens the cement and forms a strong bond between the tube and the club neck 2.

Having described my invention I claim:

1. In a playing club formed of a molded composition and comprising a body and a neck, reinforcing means in said neck and said body, and lightening means in said body.

2. In a playing club formed of a molded composition and comprising a body and a neck, and a reinforcing tube in said neck.

3. In a playing club formed of a molded composition and comprising a body and a neck, and a reinforcing tube in said neck, and a reinforcing member extending from said tube into the body.

4. In a playing club formed of a molded composition and comprising a body and a neck, reinforcing means in said neck and said body, and a hollow lightening member in said body.

5. In a playing club formed of a molded composition and comprising a body and a neck, and a reinforcing tube in said neck, and a plurality of horizontal reinforcing strips in said body.

6. In a playing club formed of a molded composition and comprising a body and a neck, a tubular reinforcing in said neck, a reinforcing member extending from said tube into said body, a plurality of fabric reinforcing strips in said body, and a hollow lightening member imbedded in said body.

7. In a playing club formed of a molded composition and comprising a body and a neck, a tubular non-metallic reinforcement in said neck.

8. In a playing club formed of a molded composition and comprising a body and a neck, a tubular non-metallic reinforcement in said neck, said tubular reinforcement having been previously coated with a suitable cement.

In testimony whereof I affix my signature.

EDWARD L. HUBBARD