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GOLF CLUB SHAFT

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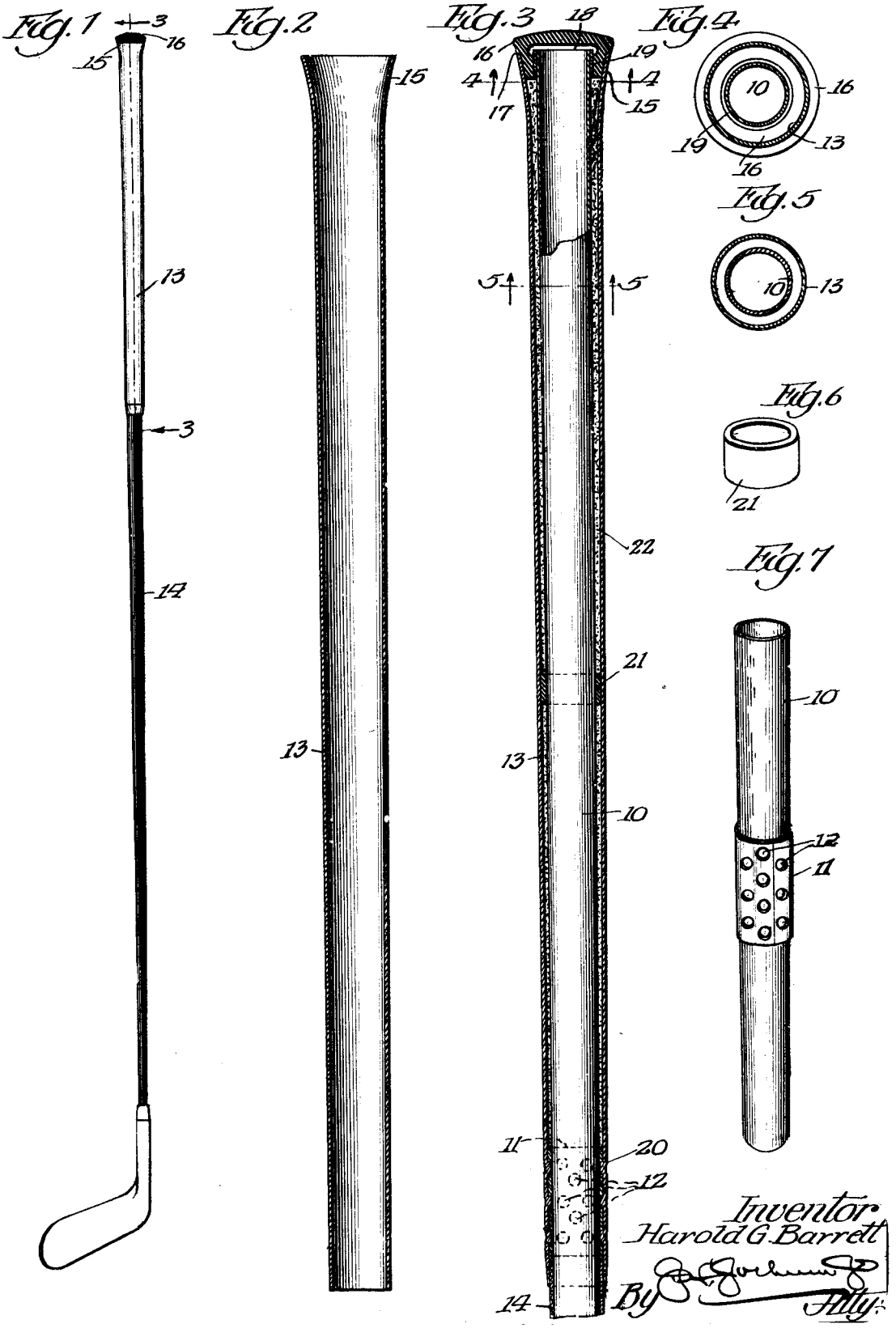

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GOLF-CLUB SHAFT

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This invention relates in general to improvements in golf club shafts, but more particularly to the hand grip portion thereof.

Heretofore the hand gripping portion of golf club shafts, whether such shafts have been constructed of wood or metal, are open to the objection that they are practically rigid against torsional movement, with the result that the impact caused by striking the ball is directly imparted to the hands of the user.

It has been attempted to overcome these difficulties and objections by providing a relatively soft hand gripping portion, but such a result has not been entirely satisfactorily accomplished for the reason that it is not firm enough to promote good play with the club.

It has also been attempted to overcome these objections by providing a hand grip or sleeve formed of hard or firm material having no inherent torsional resiliency, the sleeve encircling the end of the shaft and the ends of the sleeve being secured to or connected with the shaft by means of collars or members of torsionally distortable material interposed between the shaft and sleeve and secured to both. This has also been objectionable for the reason, among others, that the sleeves deteriorate and the resiliency thereof varies with the life of the club.

It is one of the objects of the present invention to overcome these difficulties and objections by dispensing with such intermediate resilient sleeves and by providing an improved hand grip portion or sleeve for shafts of this character, constructed of comparatively hard, flexible non-metallic material having inherent resiliency adapting the sleeve or grip portion for torsional distortion, one end of the gripping sleeve being firmly secured to the shaft or casing, if a casing is employed for the shaft, thereby imparting the necessary or desired torsional elasticity or cushioning effects, combining in the shaft all of the attributes of both a wooden and steel or metallic shaft, without sacrificing any of the advantages of either.

A further object is to provide an improved hand grip of this character constructed of a comparatively hard, non-metallic material which will yield slightly under the grip of the user's hands without entirely distorting the sleeve under such pressure, to insure a firm grip and form a cushion to the comfort of the user, as all shock of the impact of the club with the ball will be absorbed in the club and hand grip before it reaches the hands of the user.

To the attainment of these ends and the accomplishment of other new and useful objects as will appear, the invention consists in the features of novelty in substantially the construction, combination and arrangement of the several parts, hereinafter more fully described and claimed and shown in the accompanying drawing illustrating this invention, and in which

Figure 1 is an elevation of a golf club shaft constructed in accordance with the principles of this invention.

Figure 2 is a vertical, longitudinal sectional view of a hand grip sleeve, on an enlarged scale, constructed in accordance with the principles of this invention.

Figure 3 is a vertical sectional view on an enlarged scale, taken on line 3—3, Figure 1.

Figure 4 is a sectional view taken on line 4—4, Figure 3.

Figure 5 is a sectional view taken on line 5—5, Figure 3.

Figure 6 is a perspective view of a supporting collar.

Figure 7 is a perspective view of a portion of the golf club shaft having a collar secured thereto by means of which the hand grip sleeve is fastened to the shaft.

Referring more particularly to the drawing the numeral 10 designates a golf club shaft which may be of any desired construction, but in the present exemplification of this invention is shown as being formed of a tubular metallic member. Secured to the shaft 10 in any desired or suitable manner such as by brazing, sweating, or otherwise, is a collar 11 which is constructed of any suitable material preferably non-resilient and may be of any desired length and thickness. The collar may be provided with a plurality of apertures or openings 12. This collar is secured to the shaft at a point in proximity to the end of a sleeve 13 and also in proximity

to the end of a casing 14, if a casing is used upon the shaft.

The sleeve forming the hand grip of the club is of tubular configuration and is of an internal diameter somewhat greater than the external diameter of the portion of the shaft 10 over which the sleeve 13 is placed. The sleeve is formed of any suitable comparatively hard, flexible, non-metallic material having inherent resiliency adapting the sleeve or grip portion for torsional distortion to provide the necessary or desired torsional elasticity or cushioning effect and to insure that the sleeve will return to its normal position after being distorted.

It has been found in practice that pyroxyline possesses the necessary qualifications for such purpose, but it is to be understood that any other suitable material may be employed for the purpose.

The contour of the sleeve 13 conforms to the contour of the shaft 10, that is if the end of the shaft over which the sleeve is placed is of a uniform diameter throughout its length, then the sleeve will also be of a substantially uniform diameter but if the shaft is tapered, the sleeve will be tapered. The upper end of the sleeve is preferably flared as at 15 so as to receive a plug 16, the plug being of any suitable material which may be suitably ornamented or polished to give a finish to the product. The plug is telescoped into the flared portion 15 of the sleeve and if desired the plug may be provided with a circumferential shoulder 17 against which the end of the sleeve rests, the plug and sleeve being secured together in any suitable manner.

The plug is provided with a recess 18 opening through the lower face thereof and this recess is of a diameter considerably greater than the diameter of the portion of the shaft 10 which telescopes into the recess. A collar 19 formed of any suitable material, such as metal or the like, is interposed between the periphery of the shaft 10 and the surrounding wall of the recess 18 in the plug 16, the collar 19 being preferably secured in any suitable manner to the wall of the recess 18 and has a bearing contact against the periphery of the shaft 10 so as to move thereabout.

The lower end of the sleeve 13 is secured to the collar 11 in any suitable manner. If the collar 11 is provided with openings 12 as shown, the sleeve is secured thereto by forcing portions 20 of the sleeve into the respective openings 12. This may be accomplished in any suitable manner, such for instance, as by applying heat to the end of the sleeve to soften the adjacent portion of the sleeve and then forcing a part of the material into the openings.

Arranged at any suitable point within the sleeve 13 and encompassing the shaft 10 is a collar 21, any number of which may be provided, and this collar is constructed of any suitable comparatively preferably soft material, such as hard felt or the like to assist in maintaining the sleeve 13 concentrically arranged with respect to the portion of the shaft 10 which the sleeve encompasses, and to form a bearing or support for the sleeve. The collars 21 may be secured in any suitable manner either to the inside of the sleeve or to the shaft 10 so that the sleeve 13 may slide or rotate over the collar, or if the collar is secured to the sleeve the collar will rotate or slide over the shaft 10 thereby avoiding any distortion of the collars when the sleeve 13 and shaft 10 are relatively rotated.

If desired, and in order to prevent direct frictional engagement of the inner surface of the gripping sleeve 13 with the periphery of the shaft 10, a filling 22 may be provided within the space between the periphery of the shaft 10 and the interior of the sleeve or grip portion 13 and which filling may be constructed of any suitable soft material so as not to interfere with the torsional action of the sleeve 13 with respect to the shaft 10 and will also form a support for the sleeve.

With this improved construction and as the sleeve 13 is provided with inherent resiliency adapting the sleeve or grip portion for torsional distortion, it will be manifest that as one end of the sleeve is rigidly secured to the shaft 10 through the medium of the collar 11, and as the upper end of the shaft 10 is rotatably supported within the collar 19, and as the collars 21 are merely supporting collars and non-distortable, there will be a torsional distortion of the sleeve 13 occasioned by the impact between the head of the club and the ball. This torsional action of the sleeve 13 will serve as a cushion and will absorb all shock before the shock or force of the impact reaches the hands of the user. The collar 19 serves as a bearing about the end of the shaft 10, thereby not only permitting the shaft and the grip sleeve 13 to rotate freely with respect to each other but will reduce the wear and prevents the parts from becoming loose at the same time the collar 19 will not be distorted.

The sleeve 13 being constructed of material having some inherent resiliency, will also yield, to a certain extent, by the pressure of the hands in gripping the sleeve, thereby causing the sleeve to conform, in a measure, to the contour of the hand, serving as a cushion, and a somewhat flexible or yieldable grip for the user.

The sleeve also not only serves as a protection for the end of the shaft but also adds an ornamental finish to the shaft.

With this improved invention it will be manifest that the sleeve may be applied to the shaft and the construction of the shaft entirely completed before the head is secured

to the shaft, thereby facilitating in the manufacture of the shaft.

Furthermore the torsional elasticity or cushioning effects which are desirable and necessary in shafts of this character are contained as inherent properties of the material itself from which the sleeve or grip is constructed. That is to say, the necessity of providing collars or intermediate sleeves between the shaft and the grip portion so as to provide or produce such torsional qualifications with hard metallic gripping sleeves is dispensed with, which is quite a desideratum, inasmuch as the resilient or elastic sleeves which have heretofore been used for this purpose between the gripping sleeve and the shaft deteriorate with age, with the further result that with the prior constructions the resiliency or torsional qualifications of the gripping sleeve with respect to the shaft varies with the life of such distortable intermediate collars.

Obviously the degree of tension in the grip will be controlled, varied or regulated by the thickness of the material used and by the length and diameter of the grip.

While the preferred form of the invention has been herein shown and described, it is to be understood that various changes may be made in the details of construction and in the combination and arrangement of the several parts, within the scope of the claims, without departing from the spirit of this invention.

What is claimed as new is:—

1. A golf club shaft, an encircling hand grip sleeve formed of comparatively hard torsionally distortable material, said sleeve having an inherent quality of returning to normal position after distortion, and means rigidly anchoring one end of the sleeve to the shaft, the other end of the sleeve being free to rotate with respect to the shaft.

2. A golf club shaft, an encircling hand grip sleeve formed of comparatively hard torsionally distortable material, said sleeve having an inherent quality of returning to normal position after distortion, and means rigidly anchoring one end of the sleeve to the shaft, the other end of the sleeve being disconnected from but having a bearing upon the shaft for free rotative movement with respect thereto.

3. A golf club shaft, an encircling hand grip sleeve formed of comparatively hard torsionally distortable material, said sleeve having an inherent quality of returning to normal position after distortion, means rigidly connecting one end of the sleeve to the shaft, and means loosely mounting the other end of the sleeve to the shaft.

4. A golf club shaft, an encircling hand grip sleeve formed of comparatively hard torsionally distortable material having an inherent quality of returning to normal position after distortion, means rigidly connecting one end of the sleeve to the shaft, and means loosely mounting the other end of the sleeve to the shaft, said sleeve being sufficiently thin to be slightly yieldable to the grip of the hand.

5. A golf club shaft, an encircling hand grip sleeve formed of comparatively hard torsionally distortable material having an inherent quality of returning to normal position after distortion, means securing one end of the sleeve to the shaft, the remaining portion of the sleeve being free from and rotatable with respect to the shaft, and a plug in the other end of the sleeve, a portion of the plug and the adjacent end of the shaft telescoping whereby each will form a bearing for the other.

6. A golf club shaft, an encircling hand grip sleeve formed of comparatively hard torsionally distortable material having an inherent quality of returning to normal position after distortion, means securing one end of the sleeve to the shaft, the remaining portion of the sleeve being free from and rotatable with respect to the shaft, a plug in the other end of the sleeve, a portion of the plug and the adjacent end of the shaft telescoping whereby each will form a bearing for the other, and a hard bearing element interposed between the plug and shaft and encompassing the latter and with respect to which bearing element the shaft and sleeve are rotatable one with respect to the other.

7. A golf club shaft, an encircling hand grip sleeve formed of comparatively hard torsionally distortable material having an inherent quality of returning to normal position after distortion, a rigid sleeve secured to the shaft, and interengaging means between said rigid sleeve and one end of the hand grip sleeve for anchoring said end of the hand grip sleeve to the shaft.

8. A golf club shaft, an encircling hand grip sleeve formed of comparatively hard torsionally distortable material having an inherent quality of returning to normal position after distortion, and a rigid sleeve secured to the shaft, the last said sleeve being encompassed by the first recited sleeve, said sleeves being secured together by forcing a portion of one into the other to interlock them.

9. A golf club shaft, an encircling hand grip sleeve formed of pyroxyline adapted to be torsionally distorted and having an inherent quality of returning to normal position after distortion, and means securing one end of the sleeve to the shaft, the other end of the sleeve being freely movable with respect to the shaft.

10. A golf club shaft, an encircling hand grip sleeve formed of comparatively hard torsionally distortable material having an inherent quality of returning to normal posi-

tion after distortion, means securing one end of the sleeve to the shaft, the other end of the sleeve being free from the shaft and flared, and a plug in said flared end, a portion of the plug and the adjacent end of the shaft telescoping whereby each will form a bearing for the other.

11. A golf club shaft, an encircling hand grip sleeve formed of comparatively hard torsionally distortable material having an inherent quality of returning to normal position after distortion, means anchoring one end of the sleeve to the shaft and against relative movement with respect thereto, the remaining portion of the sleeve being detached from the shaft, spaced therefrom and freely torsionable with respect thereto, and a supporting collar for the sleeve, said supporting collar encompassing the shaft and disposed between the shaft and the sleeve, the torsional distortion produced by a relative rotation of the shaft and sleeve being entirely within the said hand grip sleeve.

12. A golf club shaft, an encircling hand grip sleeve formed of comparatively hard torsionally distortable material having an inherent quality of returning to normal position after distortion, means anchoring one end of the sleeve to the shaft and against relative movement with respect thereto, the remaining portion of the sleeve being detached from the shaft, spaced therefrom and freely torsionable with respect thereto, and a supporting collar for the sleeve, said supporting collar encompassing the shaft and disposed between the shaft and the sleeve, the torsional distortion produced by a relative rotation of the shaft and sleeve being entirely within the said hand grip sleeve and separate from said supporting collar, whereby said supporting collar will at all times remain undistorted.

In testimony whereof I have signed my name to this specification, on this 24th day of September, A. D. 1928.

HAROLD G. BARRETT.