May 31, 1927. 1,630,249

J. F. BABBITT

GOLF CLUB SHAFT

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Fig.1.

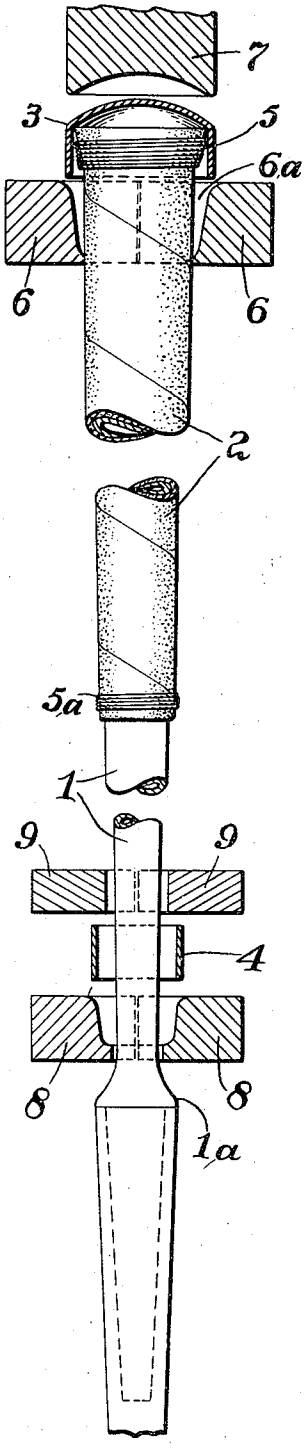


Fig.2.

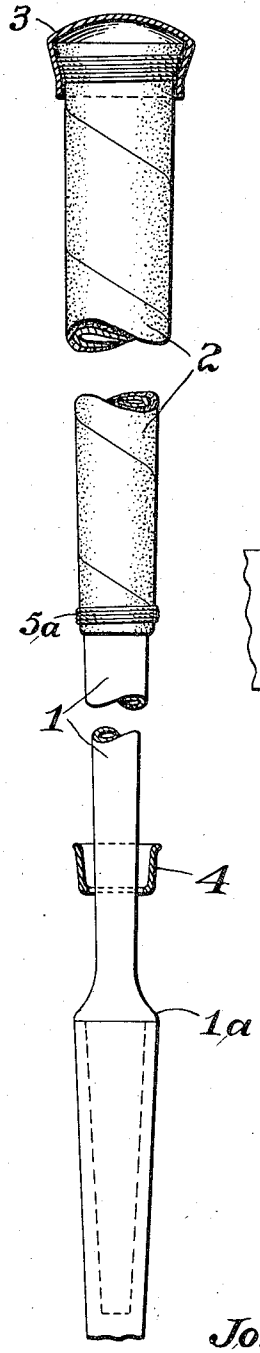
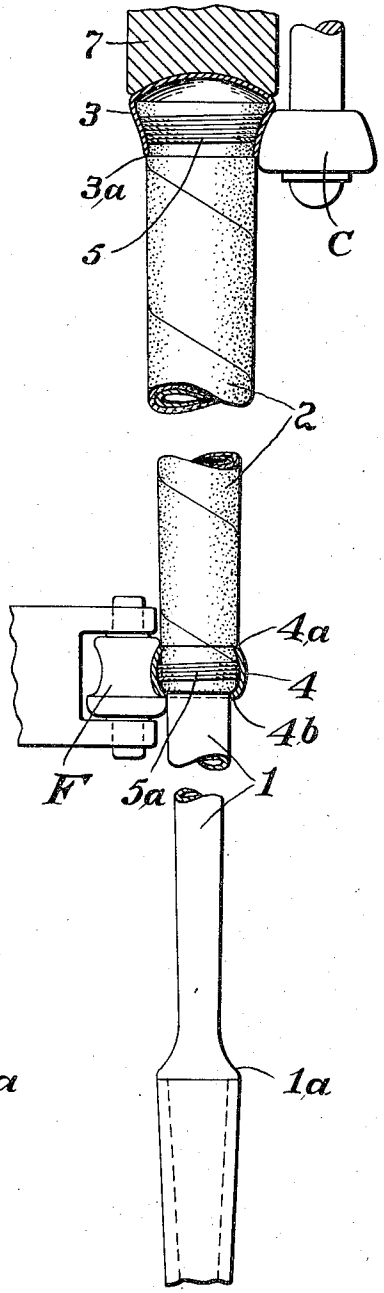


Fig.3.



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Fig.4.

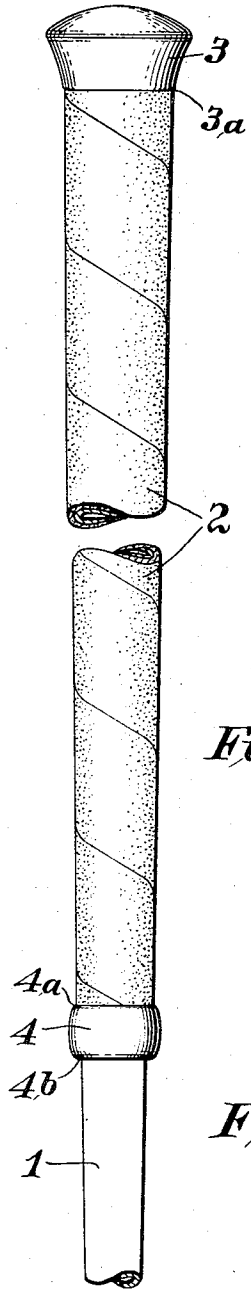


Fig.5.

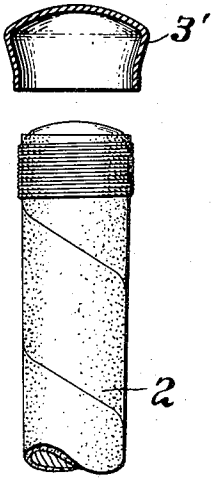


Fig.6.

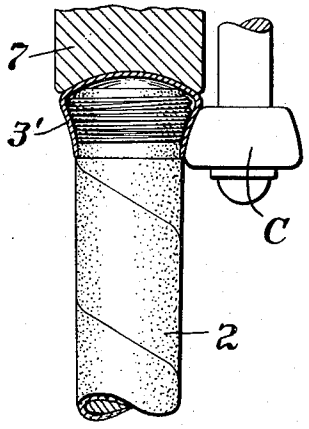


Fig.7.

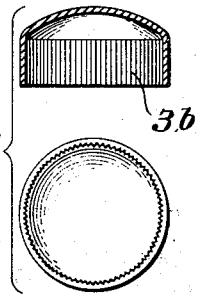


Fig.8.

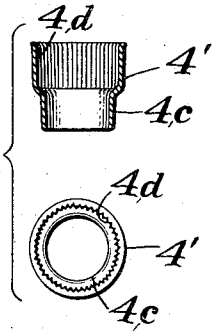
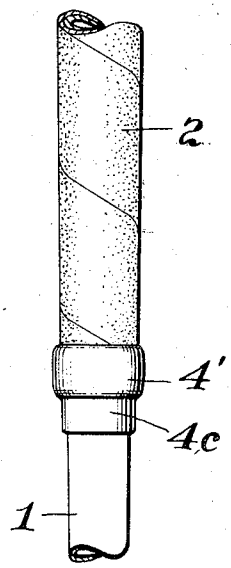


Fig.9.



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Patented May 31, 1927. 1,630,249

UNITED STATES PATENT OFFICE.

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GOLF-CLUB SHAFT.

Application filed February 3, 1927. Serial No. 165,730.

Heretofore golf clubs, as customarily manufactured, have had their shafts provided with a hand grasp covering of flexible material which is usually of leather and applied in the shape of a helically wound strip, the ends of which are bound with waxed thread or twine to prevent loosening or wear.

The wear caused by removal of the clubs from the bag and replacement therein rapidly wears or loosens this binding, and necessitates the frequent replacement of the binding, causing annoyance and expense.

My present invention aims to provide a shaft which will be free from this objection, and said invention includes the novel article and method of producing the same hereinafter described and defined by the appended claims.

In order that the invention may be more readily understood, reference is made to the accompanying drawing, in which:

Figure 1 is a side elevation of a shaft partly broken away, and with ferrule and die members shown in section.

Fig. 2 is a similar view showing the cap or ferrule members as they appear after having been shaped by the dies of Fig. 1.

Fig. 3 is a similar view showing the completion of the cap or ferrule applying.

Fig. 4 is a side elevation of the completed article partly broken away.

Figs. 5 and 6 are detail views illustrating the application of a modified form of outer cap or ferrule.

Fig. 7 illustrates a further modification.

Figs. 8 and 9 are details illustrating a modification of the inner cap or ferrule.

Referring by reference characters to these drawings, the numeral 1 (Fig. 4) designates the shaft (of wood or metal) and 2 the hand grip covering thereof, shown as the customary helically wound strip of leather. 3 designates a metal cap or ferrule applied to the outer end of the shaft with its edge in gripping engagement with the leather covering and embedded therein so as to be flush therewith, this cap or ferrule being preferably flared outwardly so as to provide an annular enlargement for engagement with the side of the hand.

4 designates the ferrule applied over the inner end of the winding or covering 2 which has one edge 4^a in gripping engagement with the covering and embedded therein and the other edge 4^b turned over the edge of said covering 2 and impinging against the surface of the shaft.

In applying these ferrules I proceed in the following manner. Preferably I first apply to the ends of the covering 2 the usual winding of waxed thread or the like indicated at 5 and 5^a to prevent any possible displacement of the covering during the application of the ferrules. The end cap or ferrule has its cylindrical wall slipped over the end of the shaft which as shown in Fig. 1 has an outwardly flared portion of truncated cone shape.

Thereupon two segmental die members 6 are brought together about the shaft below the ferrule, thereby providing the tapered annular cavity 6^a, and, these die members being properly supported, a closing punch 7 is brought down upon the head of the cap or ferrule which forces the skirt of the ferrule into the die cavity and contracts the same, so that when removed from the die it has the appearance shown in Fig. 2. Thereafter I subject it to the action of a forming roller or rollers C (preferably three, but only one being shown for convenience) which cause the edge 3^a to be forced inward and embedded in the leather until the outer face of the skirt of the ferrule is flush with the face of the covering as clearly shown in Figs. 3 and 4.

Where the shaft has a cylindrical end, as shown in Fig. 4, the cap may have the shape shown at 3^a of Fig. 5 imparted to it before it is applied to the shaft, whereafter its marginal edge is rolled down to embed it in the leather as shown in Fig. 6.

In Fig. 1 the ferrule 4 is shown applied to the shaft in the shape of a cylindrical ring before the club head is applied.

Thereafter by the use of segmental die members 8 and presser members 9 the ferrule is shrunk into the shape shown in Fig. 2, whereupon it is slipped up into engagement with the lower end of the wrapping 2 and rolled down into engagement therewith (Fig. 3) until the upper edge 4^a is embedded in the covering 2 and the lower edge 4^b abuts the shaft below the edge of the covering.

By the above described method I am enabled to expeditiously and economically apply ferrules or caps to the opposite ends of the usual shaft coverings in a manner to produce an extremely attractive club and one which is free from all danger of loosening

or fraying at the ends of the leather covering.

If desired the cap or ferrule for the outer end of the club shaft may have its inner wall fluted or corrugated as shown at 3^b, Fig. 7. The ferrule for the inner end of the wrapping 2 may likewise be internally corrugated as indicated at 4^b, Fig. 8. In connection with clubs having steel shafts which have no enlargement at their lower ends (such as 1^a, Fig. 1) the ferrule may be preformed with a reduced portion 4^a, Fig. 8 to accurately fit the portion of the shaft just below the wrapping, which only necessitates rolling the upper edge into engagement with the wrapping as shown in Fig. 9.

Having thus described my invention, what I claim is:

1. A golf club shaft having a wrapping of flexible material and ferrules compressed upon said wrapping at opposite ends thereof.

2. A golf club shaft having a wrapping of flexible material and ferrules compressed upon said wrapping at opposite ends thereof, the ferrule at the inner end of the wrapping having one edge embedded in the wrapping and the other edge turned over the edge of the wrapping.

3. A golf club shaft having a hand grip wrapping and an end ferrule in compressed engagement therewith, said ferrule having an enlarged or flared outer end.

4. A golf club shaft having a hand grip wrapping of leather or similar material and a ferrule overlapping the end of the same and having its edge embedded therein so as to be flush with the surface thereof.

5. The method of protecting the wrappings of golf club shafts which consists in applying a ferrule over the end of said wrapping and then compressing it thereon.

6. The method of protecting the wrappings of golf club shafts which consists in applying a ferrule over the end of said wrapping and then compressing it thereon, until the edge of the ferrule is embedded in the covering.

7. The method of protecting the wrapping of golf club shafts which consists in applying a ferrule to the shaft, die shrinking the ferrule while thereon, and thereafter rolling the edge into embedded relation to said wrapping.

8. A golf club shaft having a wrapping of flexible material and ferrules compressed upon said wrapping at opposite ends thereof, said ferrules having their inner faces provided with grooves or corrugations.

In testimony whereof, I affix my signature.

JOHN F. BABBITT.