Jan. 8, 1924.

1,480,056

D. W. FLINT

WOODEN SHAFT

Filed Oct. 9, 1922

Fig. 1

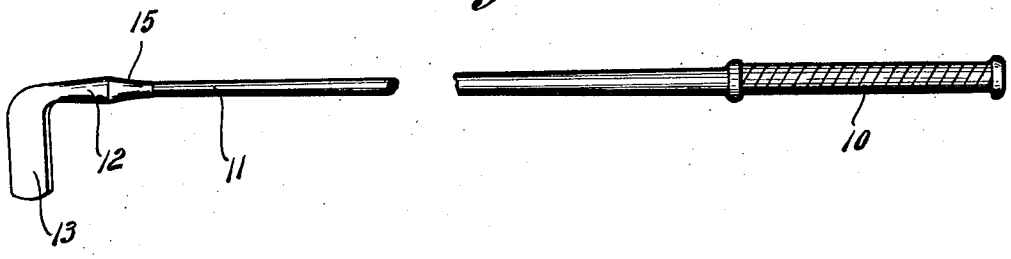


Fig. 2

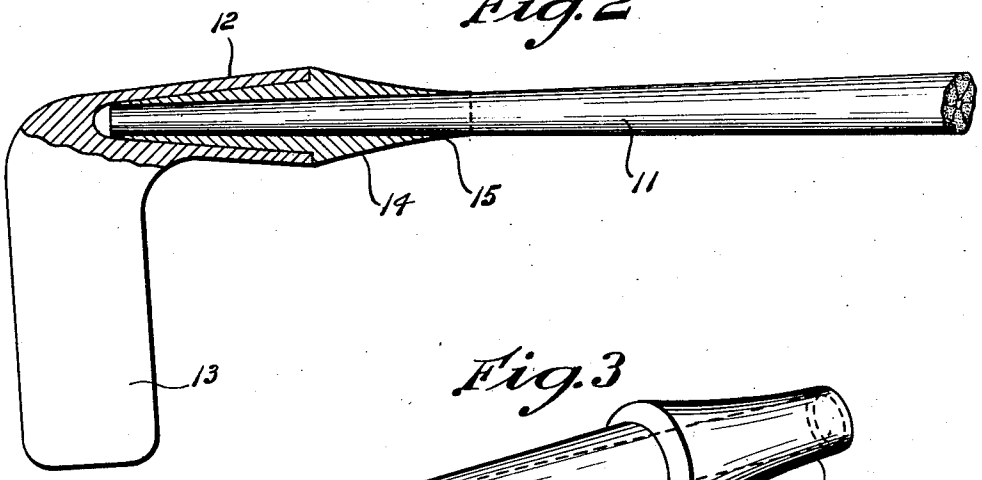
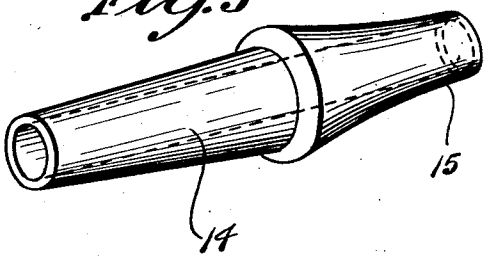


Fig. 3



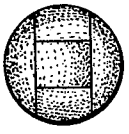


Fig. 5.

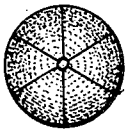


Fig. 4.

Inventor

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Patented Jan. 8, 1924. 1,480,056

UNITED STATES PATENT OFFICE.

DUTEE W. FLINT, OF CRANSTON, RHODE ISLAND.

WOODEN SHAFT.

Application filed October 9, 1922. Serial No. 593,214.

To all whom it may concern:

Be it known that I, DUTEE WILCOX FLINT, a citizen of the United States, residing at the city of Cranston, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Wooden Shafts, of which the following is a specification.

This invention relates to an improved construction of wooden shafts designed more particularly for golf clubs, but which may be used for any other purpose for which they are adapted, and the object of this invention is to secure a sleeve member to the head-end of the shaft for the purpose of enlarging this end to fit the socket of a metal head.

With these and other objects in view, the invention consists of certain novel features of construction, as will be more fully described, and particularly pointed out in the appended claim.

In the accompanying drawings,

Figure 1 shows a shaft of my improved construction as being provided with an enlarging sleeve to fit the socket of a metal head-member.

Figure 2 is an enlarged view partly in section illustrating the sleeve member as applied to the small end of the shaft for the purpose of enlarging the same to fit the socket of the metal head.

Figure 3 is a perspective view of the enlarging sleeve removed from the shaft.

Figure 4 is an end view of a composite shaft showing the strips of wood as formed triangularly in cross section.

Figure 5 is an end view of a composite shaft formed of strips of wood rectangular in cross section.

It is found in practice that bambo shafts adapted for use in golf clubs and for other purposes in order to be reduced in diameter to the required size and shape and possess the required strength must be made of a plurality of strips of this wood secured together side by side, and must have the inner or softer portion of the bamboo cut away more or less and retain as far as possible the harder or outer portion thereof, and in forming a tapering shaft of this character its smallest diameter must necessarily be reduced beyond the size required to fit and fill the socket of the metal head, and, therefore, to restore or build-up this end to the required diameter, I have applied a sleeve preferably of wood, to this smaller end and shaped it to fit into the socket of the head; and the following is a detailed description of one means by which this result may be accomplished:—

With reference to the drawings, 10 designates the handle portion of the shaft, which is usually served with a leather winding, and 11 the neck or reduced portion thereof. In order to obtain a tapered shaft having this reduced or neck portion, it will be seen that if such a composite shaft formed of strips of bamboo were turned on a lathe and the stock taken from the outside thereof, to reduce the same to the size and shape desired leaving an enlarged portion at the end of sufficient size to fit the socket, that so much of the outer or harder surface would be removed in forming this neck portion that the shaft would be too weak to withstand the strains required of it, and, therefore, would be useless. Therefore, to overcome this difficulty and retain the necessary strength at the neck, instead of removing the outer surface of the wood, I shape the shaft by removing the inner or softer portion of the bamboo retaining only the harder, stronger and more suitable portion for the shaft which will withstand the strains required of it for such purposes. The taper is produced by removing a greater quantity of the inner portion of the wood at the tapered end than at the other. In other words, the inner surface of each strip is inclined with respect to the plane of the outer surface thereof. In order to restore or enlarge this reduced portion of the shaft to the required size necessary to fit and fill the socket portion of the iron head 13, I have provided a sleeve member 14 which is also preferably formed of bamboo and have forced and glued this sleeve onto the reduced end of the shaft which in addition to enlarging the shaft also serves to bind the strips together at the end receiving the most strain. I then taper the upper end 15 of the sleeve back to conform to the contour of the tapering shaft forming a ferrule or supporting portion for this end.

In some cases the shafts used may be constructed of strips rectangular in cross section, as shown in Figure 5, while in other cases strips triangular in cross section, as shown in Figure 4, may be employed.

I do not wish to be restricted to the use of an enlarging sleeve on any particular construction of shaft of this character as such a shaft may be made up of sections of any number or form.

By the use of my improved construction of composite shaft the same is formed of the maximum strength at the point where the greatest strength is required, and is formed of a size to fit the socket of the usual metal head in a golf club.

The foregoing description is directed solely towards the construction illustrated, but I desire it to be understood that I reserve the privilege of resorting to all the mechanical changes to which the device is susceptible, the invention being defined and limited only by the terms of the appended claim.

I claim:

A shaft for golf clubs and the like comprising a composite body consisting of a plurality of strips of bamboo secured together side by side, the relatively soft inner portions of the respective strips being removed more or less to provide inclined surfaces, whereby when the strips are assembled with the inclined inner surfaces in abutted relation a taper is imparted to the body, and a wood sleeve surrounding and glued to the smaller end of said body, whereby separation of the contiguous ends of the strips is prevented and the shaft is reenforced at this locality, said sleeve having one end shaped to enter the socket of a head member.

In testimony whereof I affix my signature.

DUTEE W. FLINT.