

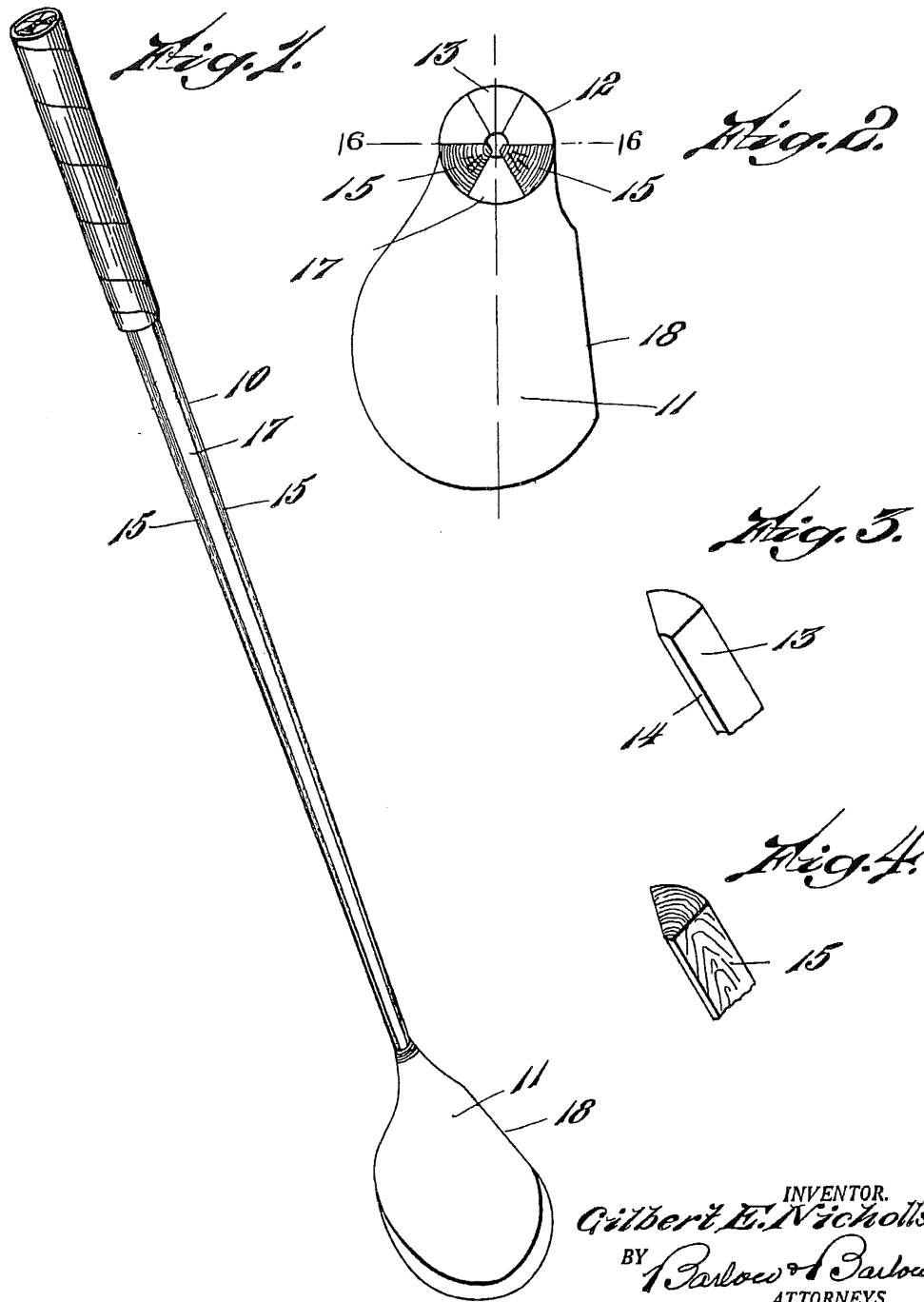
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G. E. NICHOLLS

GOLF CLUB SHAFT

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INVENTOR.
Gilbert E. Nicholls
BY *Barlow & Barlow*
ATTORNEYS.

UNITED STATES PATENT OFFICE.

GILBERT E. NICHOLLS, OF EDGEWOOD, RHODE ISLAND, ASSIGNOR TO THE SWINGRITE CO., INC., OF PROVIDENCE, RHODE ISLAND, A CORPORATION OF RHODE ISLAND.

GOLF-CLUB SHAFT.

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This invention relates to an improved construction of wooden shaft designed more particularly for use in golf clubs; and the object of this invention is to provide a
 5 golf club shaft composed of a plurality of sections of wood of different textures and flexibility laid side by side, those sections to the rear of a transverse axial line through the shaft being of one texture and a part
 10 of those sections on the front side of said line being of another texture, whereby the flexibility of the shaft is controlled.

A further object of my present invention is to form the golf club shaft of a
 15 plurality of sections of bamboo and hickory cemented together, those sections located to the rear of a transverse axial line through the shaft being all of bamboo and a part only of those on the front side of this
 20 line being of hickory.

A still further object of the invention is to position one section of bamboo on the front, central line of the shaft and to locate a section of hickory on either
 25 side of said front central section of bamboo, the remainder of the shaft being formed of bamboo sections.

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 claims.

In the accompanying drawings:

35 Figure 1 is a perspective view of a golf club having a shaft of my improved construction.

Figure 2 is a top view of the golf shaft looking at the end of the shaft and showing a bamboo section as located on the
 40 front center line of the club and a hickory section shown in shaded lines on either side of said front middle section, the rest of the sections of the shaft being of bamboo.

Figure 3 is a perspective view of a portion of one of the bamboo sections of the
 45 shaft.

Figure 4 is a perspective view of a portion of one of the hickory sections of the
 50 shaft.

It is found in the building of a sectional golf club shaft, desirable to provide some means by which its flexibility may be nicely determined and controlled so that the desired stiffness in the different shafts may
 55 be obtained to suit the requirements of the

different players. For instance, different players require what is known as the "feel" in the club, that is some players like the shaft more whippy and flexible than others, and it is found by experts in shafts of
 60 this character, that where a shaft is built up entirely of bamboo strips, it is too stiff when wielded in a forward and backward direction for the majority of players and that it requires one or more strips or sections of a softer material properly located
 65 in the shaft to give the required "feel" to the club to satisfy these different players. In other words, if the shaft is too flexible in forward and back directions it springs
 70 or yields excessively and when power is applied to the shaft to bring it downward rapidly on its driving stroke it bends backward and the head is "late" in coming
 75 in contact with the ball, which lateness gives a "slice" to the ball causing it to curve out of a straight line; and the following is a detailed description of one construction of golf shaft by which this advantageous flexibility may be built into the
 80 shaft:—

With reference to the drawings, 10 designates the shaft of a golf club having a head 11 which may be of wood or metal as is desired, the body of the shaft portion 10
 85 being made up of from a plurality of sections 12 of wood, each of which is of sector shape to fit closely in contiguous relation throughout its length to jointly form a cylindrical body which may be slightly tapered,
 90 end to end as desired and as illustrated in Figure 1.

The sections 13 of the shaft herein shown are of bamboo which as is known is relatively stiff and are formed by splitting a
 95 bamboo pole on the desired angle so that the sections are in segmental shape in cross-section to properly fit together to form the desired shaft.

It will be noted that the sections 13
 100 altho substantially sector shape do not come to a sharp edge as at 14 but this edge is herein shown as being slightly curved which is the natural formation of the stock.

In order to vary the resiliency or whip
 105 of the shaft instead of making all of the sections of bamboo, it is found desirable to form some of these sections 15 of hickory, and in order to produce just the proper feel in the club, I have herein shown the
 110

shaft as made up of six sections, those three sections to the rear of the transverse axial line 16 through the shaft are formed of bamboo and the single section 17 on the front center line is made of bamboo, and the two sections 15 which are located on either side of the front central section are made of hickory. In this way, I have been able to form a shaft which has just the required amount of whip for some players in its forward direction to obtain distance but prevent slicing and yet is sufficiently stiff in a lateral direction to prevent excessive torsion of the shaft when the face 18 of the club head 11 comes in driving contact with the ball.

In some instances, it is found that the placing of a bamboo section on the front center line of the shaft and then placing hickory sections on either side thereof and forming the rest of the shaft to the rear of the transverse center line of bamboo, I obtain just the desired "feel" and flexibility or whip which gives the club just the proper amount of whip to suit the requirements of many players.

In my improved shaft, it will be seen that I have provided novel means for obtaining a definite amount of flexibility or whip in the forward direction and at the same time have preserved the necessary stiffness in the shaft in the other direction to obtain the desired driving power at the time of impact upon the ball, thus eliminating those undesirable qualities in the shaft which causes imperfect driving.

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 claims.

I claim:

1. A shaft for golf clubs comprising a plurality of sections of wood of two different degrees of resiliency cemented together, all of those sections to the rear of the transverse axis through the shaft being of the

wood of relatively greater resiliency and a portion of those sections forward of said transverse axis being of relatively less resiliency, the sections of said two different woods having adjacent surfaces in planes passing substantially thru the axis of the shaft.

2. A shaft for golf clubs comprising a plurality of sections of wood of two different textures connected together, those sections to the rear of a transverse axial line through the shaft being of one texture, and a part of those sections at the front side of said line being of wood of a different texture, the sections of said two different woods having adjacent surfaces in planes passing substantially thru the axis of the shaft.

3. A shaft for golf clubs comprising a plurality of sections of bamboo and hickory cemented together those sections located to the rear of the transverse axial line through the shaft being all of bamboo and part of those on the front side of said line being of hickory, the sections of said two different woods having surfaces in planes passing substantially thru the axis of the shaft.

4. A shaft for golf clubs comprising a plurality of sections of bamboo and hickory cemented together all of those sections located to the rear of a transverse axial line through the shaft being of bamboo and a majority of those forward of said line being of hickory, the sections of said two different woods having adjacent surfaces in planes passing substantially thru the axis of the shaft.

5. A shaft for golf clubs comprising a plurality of sections of bamboo and hickory cemented together all of those sections located to the rear of a transverse axial line through the shaft being of bamboo, one section of bamboo being on the front center line of the shaft and a section of hickory being located on either side of said front central section, the sections of said two different woods having adjacent surfaces in planes passing substantially thru the axis of the shaft.

In testimony whereof I affix my signature.

GILBERT E. NICHOLLS.