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H. I. JORDAN
GOLF CLUB SHAFT
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Inventor:
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by S.W. Bates
Att'y.
To all whom it may concern:

Be it known that I, HARRY I. JORDAN, a citizen of the United States, residing at Auburn, in the county of Androscoggin, and State of Maine, have invented certain new and useful Improvements in Golf-Club Shafts, of which the following is a specification.

My invention relates to wooden shafts for golf clubs made up of a plurality of sections glued together.

My present invention is designed as an improvement on my application Serial No. 496,343, filed Aug. 29th, 1921, covering such a shaft made up of what is technically known as ply-wood with the plane of the layers at right angles to the direction of swing of the club.

It is a well known fact that hickory suitable for shafts or drivers and other golf clubs has become very scarce and expensive.

The object of my present invention and my prior invention therefore, is to produce a fabricated wood which may be cheaply manufactured and which will approach in quality if not excel, the old growth hickory now so much sought for for golf clubs.

Fabricated wood shafts have been made with a central layer arranged at right angles to the swing of the club with auxiliary sections on either side of said central layer of triangular and other forms of cross section.

This so-called ply-wood of which my original shaft was formed is made up of a plurality of layers of veneer pressed together and glued with the grain of alternate plies or layers disposed at right angles to each other.

In building up a shaft of this character, I have found from experience that these layers in which the grain of the shaft was at right angles to the length of the shaft while they had a tendency to prevent the warping of the shaft and to resist torsion tended also to diminish the strength and the resiliency of the shaft.

According to my present invention, instead of alternating the direction of the grain in the various layers, I have found that if the plies are pressed together with the grain in all of them extending in the same general direction, I obtain a shaft which is stronger than a solid wood shaft and has greater resiliency at that portion of the shaft which is adjacent to the head.

It is this resiliency at this particular portion of the shaft which holds the head in contact with the ball while the latter is springing away from the face of the club and the greater this resiliency, the greater the impulse which will be given to the ball in addition to the velocity of the club due to its swing.

I have found that with a shaft constructed as I have described, namely, with the grain of all the layers extending in the same general direction, I am able to vary the quality of the shaft by turning it into various positions in the socket of the head and also by varying the thickness of the several layers.

Thus, when the plies are in the same plane as the swing of the club, the shaft is stiffer than when they are at right angles with the plane of the swing. When the layers are at right angles to the swing of the shaft the latter is in its most flexible position. In various positions between these two, different degrees of stiffness and different resistances to torsion may be brought out in my improved shaft.

By running the grain of all layers in the same general direction, the grain of each layer will be made to cross at a greater or less angle the grain of adjacent layers and in that manner the grain will be securely knit together or inter-woven so that the shaft thus built up will have a great degree of toughness as compared with a straight wooden shaft of best quality hickory, the material recognized as most suitable for golf clubs at the present time.

My shaft may be made up of veneer cut from various kinds of logs, preferably from hickory so that when fabricated as I have described, it will be equal to hickory of the finest grade and far less expensive to manufacture.

I have illustrated my invention by means of the accompanying drawing in which,

Fig. 1 is a plan of the shaft and,

Fig. 2 is a cross section on the line 1—1 of Fig. 1.

Referring to the drawing, the shaft is built up of plies or layers of veneer 2 cut from the surface of the log by a suitable veneer lathe, the strips being glued together and compressed by a pressure of from 1500 to 2000 lbs. per square inch.

The result is a homogeneous wood body having very great strength and resiliency.
which can be built at a price far less than the cost of hickory. The material is sawed or turned and worked down to the form of a shaft exactly like any other wooden shaft. I claim:—

A shaft for golf clubs substantially the entire body of which is made up of a plurality of relatively thin layers of wood veneer cemented and compressed together with the grain of the wood in all the layers extending longitudinally of the shaft.

HARRY IVORY JORDAN.