Nov. 13, 1934. C. G. JANSKY 1,980,408

GOLF CLUB

Filed Sept. 19, 1929 2 Sheets-Sheet 1

Fig. 1

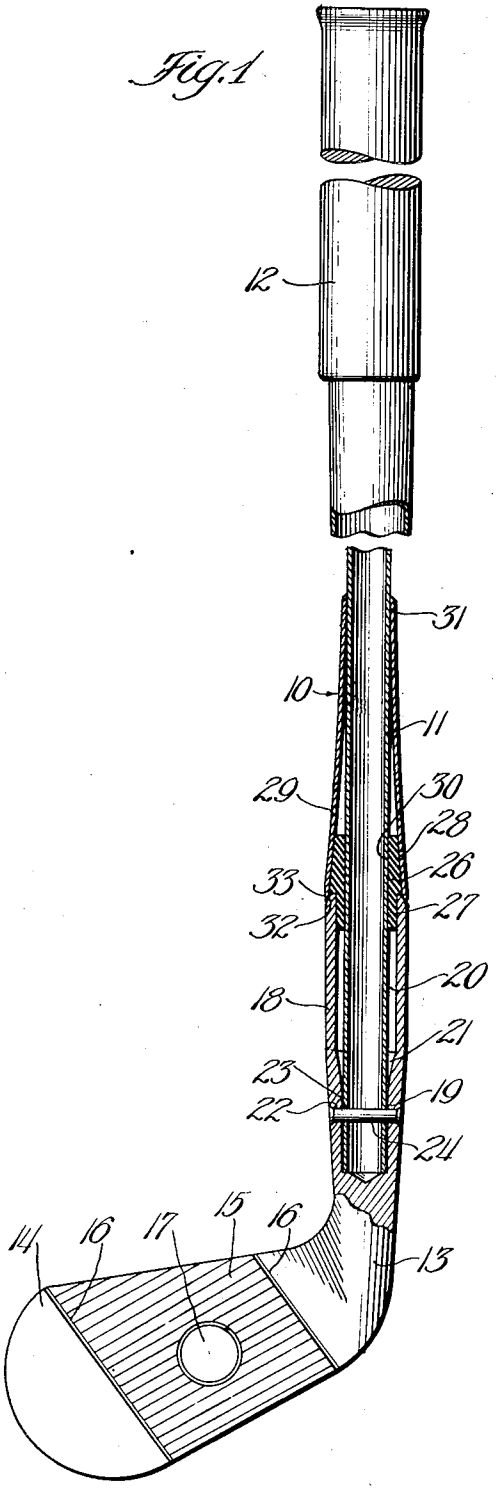
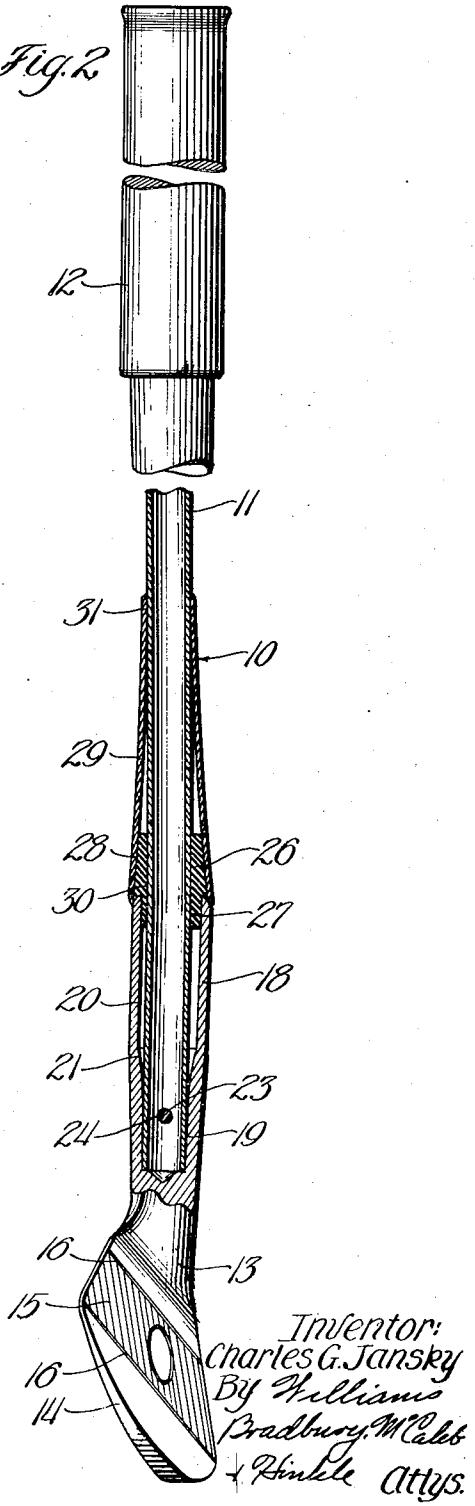


Fig. 2



Inventor:
Charles G. Jansky
By Williams
Bradbury, McCabe
& Hinkle Attys.

Nov. 13, 1934. C. G. JANSKY 1,980,408

GOLF CLUB

Filed Sept. 19, 1929 2 Sheets-Sheet 2

Fig. 4

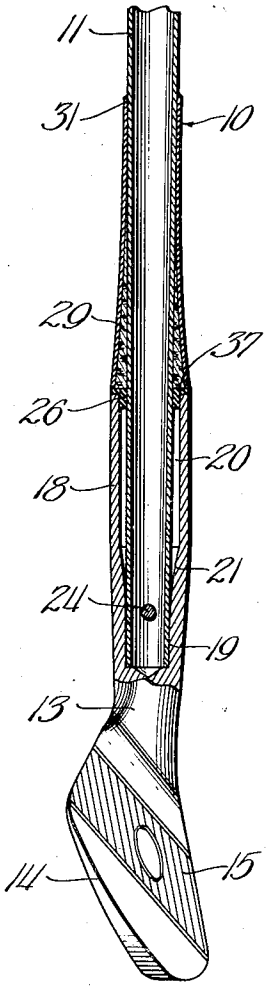


Fig. 3

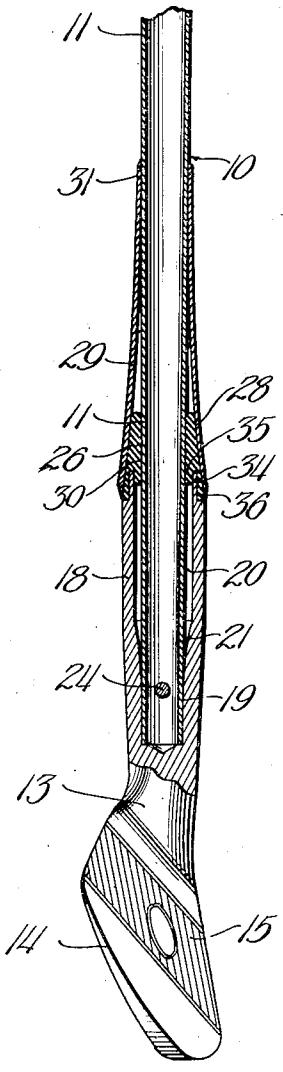
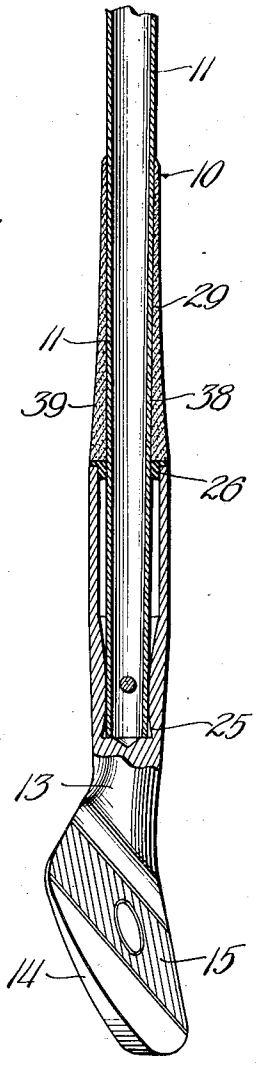


Fig. 5



Inventor:
Charles G. Jansky

By Williams, Bradbury, McCaleb & Hinkle
Attys.

Patented Nov. 13, 1934 1,980,408

UNITED STATES PATENT OFFICE

1,980,408

GOLF CLUB

Charles G. Jansky, Berwyn, Ill., assignor to Wilson-Western Sporting Goods Company, Chicago, Ill., a corporation of Delaware

Application September 19, 1929, Serial No. 393,693

4 Claims. (Cl. 273—80)

The present invention relates to golf clubs and is particularly concerned with improvements in the connection between the shaft and head of the golf club for the purpose of improving the characteristics of the club.

The invention is of particular importance in connection with golf irons having a steel shaft, but it should be understood that its use is not necessarily confined to irons, and some or all of the features described herein may be utilized upon clubs of any kind in which it may be desirable to improve the resilient characteristics of the club.

The preferred embodiment which has been selected to illustrate the invention, comprises an iron having a steel shaft and an iron head of medium pitch, but this embodiment is merely exemplary of one of the forms of the invention which may be employed with irons of any pitch or shape.

One of the objects of the present invention is the provision of an improved golf club in which the head is secured to the handle or shaft in such manner as to prevent the shock or vibration resulting from the impact, from being transmitted up the shaft to the hands of the player.

Another object is the provision of an improved hosel construction for golf irons, in which the hosel structure includes elements adapted to cushion and absorb the vibration or shock impressed upon the shaft by impact with the ball, for the purpose of improving the characteristics and "feel" of steel shafted golf irons.

Another object is the provision of an improved shock absorbing connection between the head and shaft of a golf club by means of which the head is permanently and securely mounted on the shaft in such manner as to positively resist any rotative movement of the head on the axis of the shaft to avoid the slicing which would inevitably result from such movement.

Another object is the provision of an improved ferrule construction which is adapted to protect the shaft of the club at the point where the shaft emerges from the hosel and which is more durable and efficient than the devices of the prior art which are used for this purpose.

Another object is the provision of an improved golf club of the class described, having a metal shaft and a head secured to said shaft in such manner as to permit a limited and cushioned movement between parts of the head and the shaft on an axis lying in a plane which is substantially at right angles to the direction of flight.

Other objects and advantages of the invention will be apparent from the following description and from the accompanying drawings, in which similar characters of reference indicate similar parts throughout the several views.

Referring to the drawings, of which there are two sheets;

Fig. 1 is an elevational view, in partial section, of a golf club constructed according to the present invention;

Fig. 2 is a similar view with the section taken on a plane at right angles to the sectional parts of Fig. 1, and with the parts of the club in the position which they assume immediately after impact with the ball;

Fig. 3 is a view similar to Fig. 2, of a modified form of construction;

Fig. 4 is a similar view of another modified form of construction;

Fig. 5 is a similar view of another modification.

Referring to Figs. 1 and 2, the golf club which is indicated in its entirety by the numeral 10 preferably comprises the shaft 11, which may be provided with any form of conventional grip 12 and with a club head 13. The invention is of particular importance with respect to golf clubs employing a tubular shaft of steel or other resilient metal, and the shaft 11 is ordinarily tapered from the upper end of the shaft adjacent the grip to the lower end where it is secured to the head 13. The club head 13 is provided with a blade 14 having a face 15, the pitch and shape of which vary depending upon the type of the club, and the face 15 may be provided with the conventional corrugated or ribbed surface best adapted to engage a golf ball. The transverse markings 16 define the striking surface of the club, while the centrally located marking 17 indicates the preferred point of impact upon the face 15.

The club head 13 is provided with a hosel 18 having a socket 19 adapted to receive the end of the shaft 11. The socket 19 may consist of a bore 19 which is adapted to receive the end of the shaft 11 with a close frictional fit, and the upper end of the hosel 18 is preferably provided with a counterbore 20 forming an annular chamber within the hosel about the shaft 11.

The wall of the chamber between the bore 19 and the counterbore 20 preferably tapers as at 21 to facilitate the driving of the shaft 11 into the socket 19.

It will thus be observed that the shaft 11 is secured to the club 13 by direct engagement of the shaft with the interior of the hosel, but the upper portions of the hosel 18 are spaced from the surface of the shaft 11 in order to permit the shaft

11 to bend within the hosel 18 and to permit relative movement between parts of the shaft and parts of the iron head 13.

In order to securely mount the club head upon the shaft 11, the hosel 18 and lower end of shaft 11 are provided with registering bores 22, 23, extending transversely through the hosel and shaft, and the bores 22, 23 may be filled with a cylindrical metal member 24 riveted into the hosel at each end. If desired, the bore 22 in hosel 18 may be slightly countersunk at each end and the ends of the cylindrical metal member 24 are ground off flush with the exterior surface of the hosel 18.

In the preferred embodiment of the invention, the end of shaft 11 has a drive fit with the bore 19, but in the modified form of construction shown in Fig. 5, the bore 19 may be provided with a slight degree of clearance 25 at the base of the socket 19 for the purpose of permitting a limited degree of pivotal movement of the iron head 13 on the end of the shaft 11. The pivotal member 24 is preferably located transversely to the direction of the flight of the ball, the theoretical location of the pivotal member being in a plane determined by the axis of the shaft 11 and the preferred point of impact 17.

It will thus be observed that in every embodiment the club head 13 is permanently secured to the shaft 11 against rotation on the axis of the shaft. Such rotation would inevitably result in slicing, which it is the purpose of the present construction to avoid, and the present structure is also adapted to give long and satisfactory service without loosening of the iron from the shaft.

The shaft 11 and hosel 18 are preferably provided with resilient means for cushioning the shock of impact upon the club head 13, which means may consist of a live rubber member or bushing 26 preferably having a part interposed between the hosel 18 and shaft 11 in the annular chamber 20. The resilient bushing 26 is preferably formed of soft rubber of the best quality, which is forced into place under compression so that by virtue of the initial strain already placed upon the rubber bushing, the bushing is adapted to resiliently resist any relative motion between the upper end of the hosel 18 and the adjacent part of the shaft 11.

In the embodiment illustrated in Fig. 1, the rubber bushing 26 comprises a substantially cylindrical portion 27 which is adapted to fill a portion of the annular chamber 20 in the hosel 18 and a substantially frusto-conical portion 28 adapted to fill at least a part of a ferrule 29 which encloses the juncture between the hosel 18 and shaft 11. The bushing 26 is of course provided with an axial bore 30 for receiving the shaft 11.

The golf club 10 is preferably provided with the ferrule 29 for the purpose of enclosing the juncture between the hosel 18 and shaft 11, protecting the rubber bushing 26 and maintaining the live rubber under an initial compression which increases the resiliency of the resilient cushion.

The ferrule 29 may also be applied to clubs of other types for the purpose of replacing the usual wrapping or other protective device employed at this point. The ferrule 29 in this embodiment comprises a tubular metal member having inner and outer surfaces of substantially frusto-conical shape, the ferrule tapering from an inner bore 31 of substantially the same size as the outer diameter of shaft 11, to the size of the end of the hosel 18.

In the embodiment of Fig. 1, the upper end of hosel 18 is provided with a curved surface 32 which may comprise a portion of a spherical surface and the adjacent surface 33 of the ferrule 29 may be complementary, to form a limited ball and socket connection between these parts. The actual size of the live rubber bushing 26 when removed from the hosel 18 and ferrule 29 is slightly greater than that illustrated in the drawings so that when the parts are assembled as shown in Fig. 1, the rubber is under an initial state of compression. The ferrule 29 is retained in position by a close frictional fit of the shaft 11 in the bore 31 and also by virtue of the fact that the diameter of the shaft increases from the lower end toward the top, thereby tending to resist movement of the ferrule to a larger part of the shaft.

Referring to Fig. 3, the modified form of construction illustrated in this figure is substantially the same as that already described, except that in this embodiment the resilient cushioning means is interposed both between the ferrule 29 and the hosel 18 and between the hosel 18 and the shaft 11.

For this purpose the upper end 34 of the hosel 18 is reduced in diameter, forming an annular space between the end 34 and the inner surface of ferrule 29. The bushing 26 is provided with an annular groove 35 adapted to receive the end 24 of the hosel 18 and the bushing is provided with a downwardly projecting annular flange 36 adapted to fill the space between the end of the hosel and the lower part of ferrule 29. In this golf club the adjacent surfaces of the end of the ferrule 29 and the hosel 18 need not be formed like a universal joint, but the reduced size of the hosel permits the hosel to move inside the ferrule 29.

In the modified construction shown in Fig. 4, the ferrule 29 is maintained in spaced relation to the upper end of the hosel 18 and the bushing 26 may consist of a substantially cylindrical live rubber bushing adapted to fill the space between the hosel 18 and shaft 11 under compression, and the bushing 26 is also provided with an annular, outwardly projecting flange 37 filling the space between the end of the ferrule 29 and the end of the hosel 18. The balance of the ferrule 29 may be filled with cork, fiber wood or any similar material adapted to resist compression and place the bushing 26 under a predetermined degree of compression.

In the embodiment illustrated in Fig. 5, the bushing 26 is of the same form as that illustrated in Fig. 4, but the ferrule 29 has been constructed of some initially plastic material such as pyralin. In this club the pyralin ferrule 29 is provided with a tapered bore 38 adapted to fit the shaft 11 and the outer surface 39 of the ferrule 29 may be tapered to provide a frusto-conical surface extending from hosel 18 and bushing 26 to the shaft 11.

It should be understood that any of the special features illustrated in any of these modified forms may be substituted for equivalent features in any of the other forms.

The operation of the invention is as follows.

When the club is used to strike a ball in the usual manner, the impact of the ball on the face 15 of blade 14 tends to bend the head backward and to rotate the head on the axis of the shaft 11. Such rotation of the head is positively resisted by the direct mechanical connection between the shaft 11 and the head 13, but the form of connection provided permits relative movement between parts of the hosel 18 and the shaft 11,

which is resisted by the resilient live rubber cushioning member 26.

In the embodiment of Fig. 5, provision has been made for a limited pivotal movement of the head on the cylindrical member 24, while in the other constructions illustrated, the relative movement takes place by virtue of the bending of the shaft 11 within the annular space 20 of hosel 18.

Fig. 2 illustrates by exaggeration the relative positions of the parts when the head of the club has just struck a ball, and it will be observed that the rear side of the upper end of the hosel 18 approaches the shaft 11 and at the same time the lower end of the ferrule 29 also tends to approach the shaft 11 at this point, compressing the rubber bushing 26. This action takes place by virtue of the fact that the hosel and ferrule parts are constructed of relatively stiff material which maintains the shape of these parts while the steel shaft 11 is adapted to curve within the hosel and ferrule so that the rear side of the hosel and ferrule extend across a segment of the arc made by the shaft. The term "rear" as employed in the foregoing sense is applied to that part of the hosel or ferrule which is behind the face or on the left side of the figure in Fig. 2, rather than to that part of the hosel directly opposite to the blade.

In the embodiment of Fig. 5, the relative movement between the hosel and shaft does not depend solely upon the bending of the shaft, but may also take place by virtue of the pivotal connection between the shaft and iron head.

The term "iron head" in the present specification is employed in the technical sense of a metal golf club head and this term includes metal heads which are preferably constructed of steel rather than ordinary iron.

Golf irons constructed according to the present invention have improved resilient characteristics by virtue of the improved form of connection between the shaft and head, and the major portion of the shock caused by the impact of the ball on the head is absorbed by the live rubber cushion which forms a part of the hosel structure. Such clubs have a "feel" which adds materially to the pleasure of the game, renders the clubs more salable and decreases fatigue on the part of the player. The improved construction is also adapted to enclose and protect the juncture of the hosel and shaft, and there is practically no possibility of the club head becoming loosened after a long period of use.

While I have illustrated a preferred embodiment of my invention, many modifications may be made without departing from the spirit of the invention, and I do not wish to be limited to the precise details of construction set forth, but desire to avail myself of all changes within the scope of the appended claims.

Having thus described my invention, what I claim is new and desire to secure by Letters Patent of the United States, is:

1. In a golf club, the combination of a club head having a hosel with a socket, a steel shaft extending into said socket and having its end fixedly secured to said head, a tapered ferrule fixedly secured to said shaft at its small end and having its large end disposed adjacent the end of said hosel to enclose said shaft adjacent said hosel, and a resilient rubber member confined between and separating said ferrule and hosel and adapted to cushion movement of said shaft relative to said hosel.

2. In a golf club, the combination of a club head having a hosel with a socket, a steel shaft extending into said socket and having its end fixedly secured to said head, a tapered ferrule fixedly secured to said shaft at its small end and having its large end disposed adjacent the end of said hosel to enclose said shaft adjacent said hosel, and a resilient rubber member confined between said ferrule and hosel and adapted to cushion movement of said shaft relative to said hosel, said rubber member having an annular flange between said hosel and ferrule and flush with the surfaces of said hosel and ferrule.

3. In a golf club, the combination of a club head having a hosel with a socket, a steel shaft extending into said socket and having its end fixedly secured to said head, a tapered ferrule firedly secured to said shaft at its small end and having its large end disposed adjacent the end of said hosel to enclose said shaft adjacent said hosel, and a resilient rubber member interposed between said hosel and shaft and between and separating said hosel and ferrule.

4. A golf club comprising a metal head, a hosel thereon, a socket in the hosel, tubular metal shaft having its lower end extending into the socket and fixed thereto in metal-to-metal surface contact, a ferrule having a bore in surface contact with the shaft outwardly of the hosel and fixed to the shaft, the hosel and ferrule having spaced apart parallel adjacent butt ends of substantially equal diameter at right angles to the axis of the shaft, and a washer of softer and flexible material surrounding the shaft with its respective faces in contact with the butt ends of the ferrule and hosel, whereby the washer completely separates the hosel and ferrule, the ferrule tapering upwardly substantially to merge with the periphery of the shaft thereabove.

CHARLES G. JANSKY.