

United States Patent

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[21] Appl. No.	746,838	2,329,932	9/1943	Nelson	287/58X
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[54] GOLF CLUB HAVING AN ADJUSTABLE LENGTH SHAFT	1,048,806	8/1953	France	273/80.1
7 Claims, 5 Drawing Figs.	492,684	9/1938	Great Britain	273/81.2
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80.1, 81, 81.2, 69, 193; 124/38; 248/188.5;
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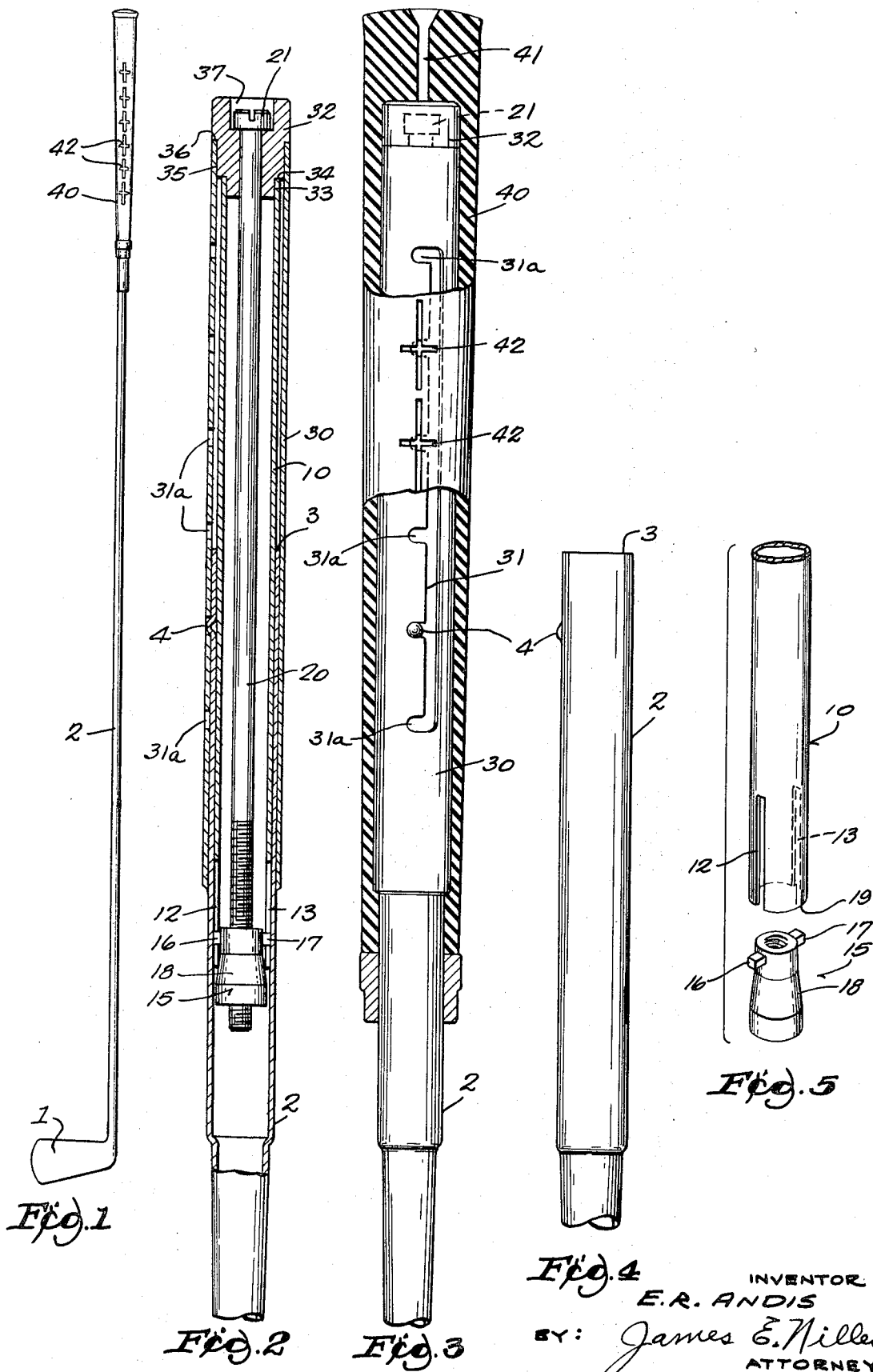
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ABSTRACT: A golf club having a shaft which is adjustable in length and which can be tightly locked at the desired length by an internal wedge which prevents inadvertent twisting of the grip relative to the rest of the shaft.





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GOLF CLUB HAVING AN ADJUSTABLE LENGTH SHAFT

BACKGROUND OF THE DISCLOSURE

The invention pertains to a golf club having a shaft which is comprised of telescoping, tubular members for varying the length of the club.

Golf clubs of this general type have heretofore been proposed and used, but have had several shortcomings, such as the inability to remain in the locked position without relative turning of the grip on the rest of the shaft when in use, and difficulty in making the adjustment.

SUMMARY OF THE INVENTION

The present invention provides a golf club having a shaft which is adjustable in length and is comprised of three tubular members nested together, the inner tubular member cooperating with a tapered wedge which causes very efficient binding engagement between the tubular members to thereby fix them in their selected position. The inner and outer tubular members are rigidly fixed together and the club shaft proper is concentrically located and firmly held between the inner and outer tubular members.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is an elevational view of a golf club embodying the present invention;

FIG. 2 is a cross-sectional view through a portion of the club shown in FIG. 1, but on an enlarged scale;

FIG. 3 is an elevational view of the club portion shown in FIG. 2, but showing the grip in place and in cross section;

FIG. 4 is an elevational view of the upper edge of the club shaft shown in FIGS. 2 and 3; and

FIG. 5 is an exploded, perspective view of the inner tube and wedge shown in FIG. 2.

DESCRIPTION OF THE PREFERRED EMBODIMENT

The present invention is applicable to various types of clubs, that is woods, irons or putters and the club is shown here for illustrative purposes having a head 1 fixed to its tubular shaft 2. Shaft 2 may be considered as a conventional club shaft which has had a portion of its upper end cut off, leaving an open end 3.

A projection 4 is formed on and extends outwardly from shaft 2 at a distance from the free, open end 3 of the shaft, say for example, about five inches from the end of shaft 2.

An internal tubular member 10 is machined at its inner end and has a pair of diametrically opposed slots 12 and 13 extending longitudinally along its inner end. These open-end slots slidably receive a generally cylindrical wedge 15 and prevent the latter from rotating within the club. This is accomplished by a pair of projections 16 and 17 which extend outwardly from the wedge 15 sufficiently in opposite directions so that they are slidably engaged in their respective slots 12 and 13. The wedge has an upwardly diverging, annular taper portion 18, against which the extreme lower end 19 of the internal member 10 abuts. An internal thread is formed longitudinally through the wedge for the threaded reception of a long cap screw 20 which has a slotted head 21 at its other end.

An outer tubular member 30 surrounds the shaft 2 in firm engagement therewith. A longitudinal slot 31 is formed through the member 30 and has a series of spaced recesses 31a extending transversely therefrom.

The inner member 10 and outer member 30 are rigidly fixed together at their outer ends by means of a cap 32. More specifically, cap has a reduced portion 33 on which the inner member 10 is press fit against a shoulder 34. The cap also has another annular portion 35 on which the outer member 30 is press fit and against a shoulder 36 of the cap.

Thus the inner and outer members firmly hold the shaft 2 between them in concentric relationship and for a substantial length of the shaft 2 to thereby provide a good bearing surface.

The screw 20 extends through the cap and the slotted head 21 sets in the counterbore 37 of the cap.

After the inner and outer members have been press fit onto the cap 32, the screw is inserted through the cap and the wedge threaded on the screw until its projections are located about midway along the length of the slots 12 and 13. At this time, the lower end 19 of the inner member 10 abuts against the taper portion 18 of the wedge.

The wedge and screw are then inserted into shaft 2 and the upper end of shaft 2 enters the annular space between the inner member 10 and outer member 30, the projection 4 on the shaft 2 being forced into the longitudinal slot 31 of member 30.

After the desired length has been selected by telescopically moving the shaft 2 relative to members 10 and 30, the adjustment is locked by inserting a screwdriver into engagement with the screwhead and turning the screw to draw the wedge upwardly and against the end 19 of the inner member 10. This causes the inner end 19 to flare outwardly into extremely tight binding engagement with the internal surface of shaft 2. Thus the entire shaft is rigidly fixed together.

The outer member 30 is covered with a flexible, grip material 40, which has glue on its inner surface and which grip is seated on member 30 by air pressure which is forced through a hole 41 in the end of the grip 40 in the conventional manner.

The grip 40 has side holes 42 on its periphery to mark the locations of the recesses 31a underneath the grip. The holes 42 are automatically aligned with recesses 31a when the grip is pushed fully onto member 30. With these indexes, the player can change the length by definite increments such as inches indicated by openings 42. Nevertheless, the length of the club can be infinitely adjustable because the projection 4 need not be inserted in notches 31a, and an adjustment can be selected with the notch 4 located anywhere between the notches.

The hole 41 may be sealed for tournament play with a mastic material which makes the adjustment inaccessible.

The present invention provides a length adjustment for conventional golf club shafts, which adjustment is easily made and can be positively locked in the selected position.

I claim:

1. An adjustable length golf club comprising, a tubular shaft having a head at one end and the other end being open, an inner tubular member and an outer tubular member arranged concentrically to provide an annular space therebetween, a cap located at one end of said tubular members, said inner and outer tubular members being rigidly secured to said cap, said tubular shaft having its open end located in said annular space, said tubular shaft slidably extending into said annular space between said concentric tubular members, a wedge slidably mounted in said shaft and having a portion abuttable against the other end of said inner tubular member, means between said wedge and inner member to prevent relative rotation but permit longitudinal movement therebetween, and a screw extending into said members and threadably engaged with said wedge for longitudinally moving said wedge in said shaft and tightly against said one end of said inner tubular member and into binding engagement with said shaft.

2. A club as defined in claim 1 further characterized in that said wedge portion is formed as a taper, and said means to prevent relative rotation includes slot means in said inner member and said wedge has projection means extending into said slot means.

3. An adjustable length golf club comprising, a tubular shaft having a head at one end and the other end being open, an inner tubular member and an outer tubular member arranged concentrically to provide an annular space therebetween, a cap located at one end of said tubular members, said inner and outer tubular members being rigidly secured to said cap, said tubular shaft located concentrically between said inner and outer members, said tubular shaft slidably extending into said annular space between said concentric tubular members, a wedge slidably mounted in said shaft and having a portion abuttable against the other end of said inner tubular member,

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means between said wedge and inner member to prevent relative rotation but permit longitudinal movement therebetween, and a screw extending through said members and threadably engaged with said wedge for longitudinally moving said wedge in said shaft and tightly against said other end of said inner tubular member to force said end to flare outwardly into binding engagement with said shaft.

4. A club as defined in claim 3 further characterized in that said wedge portion is formed as a taper, and said means to prevent relative rotation includes slot means in said inner member and said wedge has projection means extending into said slot means.

5. An adjustable length golf club comprising, a tubular shaft having a head at one end and the other end being open, an inner tubular member and an outer tubular member arranged concentrically to provide an annular space therebetween and rigidly fastened together at one of their adjacent ends, a cap located at one end of said tubular members, said inner and outer tubular members being rigidly secured to said cap, said tubular shaft located concentrically between said inner and outer members, said tubular shaft slidably extending into said annular space between said concentric tubular members, a

tapered wedge slidably mounted in said shaft and having a portion abutable against the other end of said inner tubular member, slot and projection means between said wedge and inner member to prevent relative rotation but permit longitudinal movement therebetween, a threaded cap screw extending through said members and threadably engaged with said wedge for longitudinally moving said wedge in said shaft and tightly against said other end of said inner tubular member to force said end to flare outwardly into binding engagement with said shaft, a projection extending radially outwardly from said tubular shaft, and said outer tubular member having a longitudinal slot therein and in which said projection can slide.

6. The club set forth in claim 5 wherein said longitudinal slot of said outer tubular member has a series of spaced recesses extending transversely therefrom, and said projection is insertable in any one of said recesses.

7. The club as set forth in claim 6 including a grip surrounding said outer tubular member, said grip having a series of longitudinal spaced index openings therealong, said openings being in alignment with said spaced recesses.

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