Feb. 19, 1929. 1,702,916

J. A. NOVAK ET AL

ADJUSTABLE GOLF CLUB

Filed Dec. 27, 1926 2 Sheets-Sheet 1

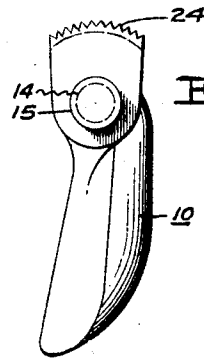


FIG. 3.

FIG. 1.

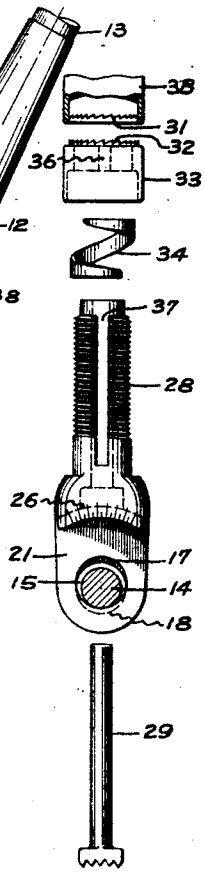


FIG. 4.

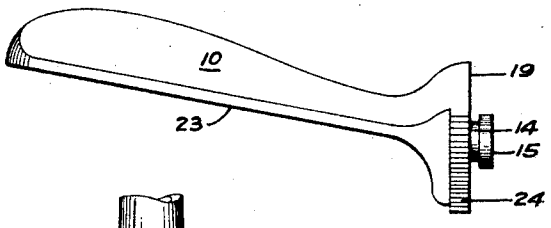


FIG. 2.

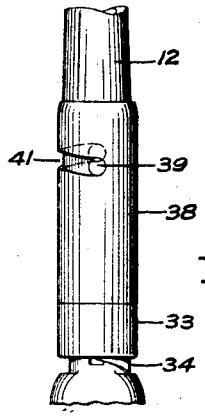


FIG. 5.

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FIG. 6.

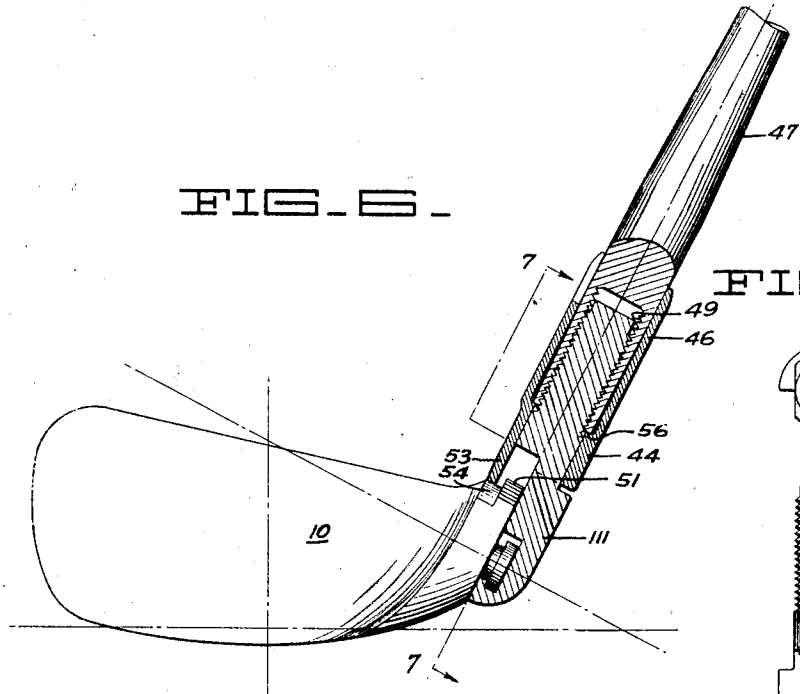
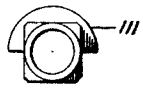


FIG. 8.



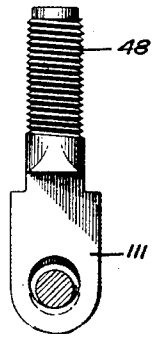
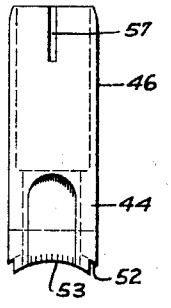


FIG. 7.

FIG. 9.



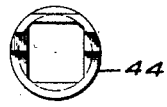


FIG. 10.

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Patented Feb. 19, 1929. 1,702,916

UNITED STATES PATENT OFFICE.

JOSEPH A. NOVAK, OF SAN FRANCISCO, AND FRANK C. FISHER, OF ALAMEDA, CALIFORNIA, ASSIGNORS TO NOVAK CLUB INC., OF SAN FRANCISCO, CALIFORNIA, A CORPORATION OF NEVADA.

ADJUSTABLE GOLF CLUB.

Application filed December 27, 1926. Serial No. 157,114.

This invention relates generally to golf clubs which may be adjusted to vary the loft of the striking face.

It has previously been proposed to construct an adjustable golf club in which the blade is locked in an adjusted position by rotation of the club handle. For example, as disclosed in the application of Alphonsus Gavin, Serial No. 90,113, filed Feb. 25, 1926, and Novak and Fisher, Serial No. 102,108, filed Apr. 15, 1926, the handle may have a threaded engagement with the shank and when rotated in one direction, serve to force the member into locking engagement with the blade. For a right handed club, a left handed thread is used so that the blade will not become loosened in striking a ball. In some instances, especially when using a wooden shaft, the friction of the threaded engagement between the handle and shank is not sufficient to prevent unlocking of the blade. Thus in topping or heeling a ball, accidental rotation of the shaft with respect to the blade may occur with the result that the blade may become unlocked and detach itself from the shank.

It is an object of this invention to prevent accidental unlocking of the blade of an adjustable golf club while in use.

It is a further object of this invention to incorporate additional means in conjunction with the locking mechanism of a golf club to prevent accidental loosening of the blade.

Further objects of this invention will appear from the following description in which we have set forth the preferred embodiment of our invention. It is to be understood that the invention is to be accorded a range of equivalents consistent with the state of the prior art.

Referring to the drawings:

Figure 1 is a side elevational view of a golf club incorporating the principles of this invention, certain parts being shown in cross section.

Fig. 2 is a detail showing a plan view of the blade looking parallel to the striking face.

Fig. 3 is an end view of the blade looking at right angles to the pivotal axis of the blade.

Fig. 4 is a detail showing the manner in which the parts of the locking mechanism are assembled.

Fig. 5 is a fragmentary detail showing the rotatable sleeve for releasing the locking mechanism.

Fig. 6 is a view similar to Fig. 1 showing a modified form of adjustable golf club.

Fig. 7 is a cross sectional view taken along the line 7—7 of Fig. 6 with the locking sleeve and shaft removed.

Fig. 8 is a plan view of the shank shown in Fig. 7.

Fig. 9 is a side elevational detail of the locking sleeve.

Fig. 10 is an end view of the locking sleeve shown in Fig. 9.

The invention includes generally a golf club having a blade which may be set in any one of a number of different positions to vary the loft of the striking face. The handle of the club is provided with a threaded engagement with the shank and means is provided so that upon rotation of the handle in one direction, the blade may be fixed in any desired adjusted position. To prevent rotation of the handle in the opposite direction and subsequent unlocking of the blade, additional means is provided which, either by positive locking engagement or by frictional means, tends to prevent relative rotation between the handle and shank. This additional means is constructed so that it does not interfere with making readjustments in the blade after the club has been used in one adjusted position.

Referring first to that modification of the invention shown in Figs. 1 to 5 inclusive, there is provided a golf club including a blade 10 pivotally secured to a shank which is divided into two portions, a lower portion 11 and an upper portion 12. To the shank portion 12 there is attached the usual shaft 13 of wood or metal, to the upper end of which is secured the usual grip or handle. One suitable form of pivotal connection for the blade consists of a projection 14 upon the heel of the blade, this projection being provided with an enlarged head 15. The lower shank portion 11 is provided with a recess 17 adapted to receive the projection 14, this recess having a lower arcuate groove 18 within which the head 15 is adapted to interlock. This pivotal connection is reinforced by plane contacting faces 19 and 21 provided upon the blade and shank portions, the plane of these faces being substantially normal to the pivotal axis 22 and

parallel to the axis of the shaft. In order to have substantially constant angle of lie for several adjusted positions of the angle of loft, and at the same time permit the pivotal axis 22 being arranged normal to the axis of the shaft, this axis is arranged at an angle to the striking face 23 as shown in Fig. 2. This arrangement has been fully explained in the copending patent application in the name of Novak and Fisher referred to above.

The mechanism for locking the blade in any one position includes a serrated arcuate segment 24 provided upon the blade and which fits within an arcuate recess 26 in the lower shank portion 11. The upper shank portion 12 is provided with an internally threaded portion 27 having threaded engagement with a portion 28 of the shank portion 11. A locking member or pin 29 is slidably received in the shank portion 11 and is adapted to be forced into locking engagement with the serrated segment 24 upon rotation of the shaft 13. In case of a right handed club a left handed threaded engagement is employed between the two shank portions so that when striking a ball, the force of the impact tends to rotate the blade in a direction to tighten the locking engagement. In case of a left handed club it is of course obvious that a right handed thread is employed. However, in case of topping or heeling a ball, due to reasons which are not clearly understood, the blade seems to be thrown forward during the stroke with the result that the threaded engagement is at times loosened and the blade becomes unlocked. In other words, relative rotation occurs between the two shank portions, or between the blade and the shaft of the club, which is in a direction to loosen or unlock the blade.

The additional means which we have provided for preventing unlocking of the blade during such a contingency may be any convenient arrangement which will tend to prevent relative rotation between the two shank portions. In one suitable arrangement the lower edge of the internally threaded portion 27 is provided with teeth 31 adapted to engage teeth 32 upon the locking ring 33. This ring is slidably positioned upon the shank portion 11 and is spring pressed to keep teeth 31 and 32 in cooperative engagement, as by means of helical spring 34. Relative rotation between locking ring 33 and the shank is prevented by means of a lug 36 upon the ring which slidably engages a groove 37 in the threaded shank portion 28. The teeth 31 and 32 are so shaped that when the shaft 13 is rotated relative to the blade to lock the blade in an adjusted position, these teeth will ratchet together, while rotation of the shaft in the opposite direction to unlock the blade will be prevented as long as the teeth are in engagement. To disengage the locking ring 33 to permit unlocking of the blade there is provided a sleeve 38 which is rotatably and slidably positioned upon the upper shank portion 12. A pin 39 fixed to the shank portion 12 operates within a cam slot 41 in sleeve 38 whereby upon rotation of this sleeve it will be shifted longitudinally upon the shank. Rotation of the sleeve in one direction serves to force down locking ring 33 out of engagement with shank portion 12, while rotation in the opposite direction permits teeth 32 to ratchet upon teeth 31.

In operating this club the sleeve 38 is first rotated in a direction to release the locking ring 33, friction being sufficient to retain the sleeve in this position. The handle of the shaft is then rotated relative to the club blade and the blade set to the desired angle of loft. Sleeve 38 is then rotated to permit ring 33 to move to ratcheting or locking position after which the shaft is rotated in the opposite direction until the blade is securely locked to the shank. During this time ring 33 ratchets upon the upper shank portion but prevents rotation of the shaft in a direction to loosen the blade until the operator again manipulates the sleeve 38.

In the golf club shown in Figs. 6 to 10 inclusive, accidental loosening of the blade is prevented by frictional means tending to prevent relative rotation between the two shank portions. A novel mechanism for locking the blade to the shank has also been provided in which a sleeve has been substituted for the locking pin 29 of the club described above. Thus slidably disposed upon the shank portion 111 there is a sleeve 44 having an extension 46 surrounding the upper shank portion 47. In this case the threaded portion 48 may be made solid and is adapted to engage the internally threaded portion 49 of the upper shank portion 47. The arcuate segment 51 upon the blade 10 is engaged by the shoulders 52 formed upon the sides of the sleeve 44 and a lip 53 formed upon the sleeve extends in close proximity with the arcuate surface 54 of the blade, in order to prevent entrance of dirt. The threaded portion 49 abuts a shoulder 56 provided on the sleeve 44 so that when the shaft is rotated in one direction the sleeve 44 is forced downwardly to bring shoulders 52 into locking engagement with the serrated segment 51. Instead of serrating the segment 51 it is obvious that the surface 54 may be serrated to form a locking engagement with the lip 53. To prevent accidental loosening of the handle the extension 46 of sleeve 44 is provided with slots 57 so that the upper edge of this extension may resiliently press against the outer surface of the upper shank portion 47, thus forming a frictional engagement tending to prevent relative rotation between the two shank portions. As the shank portion 47 is preferably tapered downwardly where it fits within the extension 46, this

frictional engagement will be greatest when the shaft is rotated to a locking position.

We claim:

1. A golf club comprising a blade, a shank to which the blade is pivotally secured, a handle having a threaded engagement with the shank, means for locking the blade to the shank upon rotation of the handle in one direction, and additional means for preventing accidental unlocking of the blade.

2. A golf club comprising a blade, a shank to which the blade is pivotally secured, a handle having a threaded engagement with the shank, means for locking the blade to the shank upon rotation of the handle in one direction, and additional means for preventing accidental rotation of the handle in the opposite direction when the club is in use.

3. A golf club comprising a blade, a shank to which the blade is pivotally secured, a handle having a threaded engagement with the shank, means for locking the blade to the shank upon rotation of the handle in one direction, and means in addition to the frictional engagement of relatively movable parts of the club for preventing accidental rotation of the handle in the opposite direction to unlock the blade.

4. A golf club comprising a blade, a shank pivotally secured to the blade, a handle connected to the shank, means operable upon rotation of the handle in one direction to lock the blade to the shank, means for locking the handle to the shank, and means for releasing said locking means while making adjustments of the blade.

In testimony whereof, we have hereunto set our hands.

JOSEPH A. NOVAK.
FRANK C. FISHER.