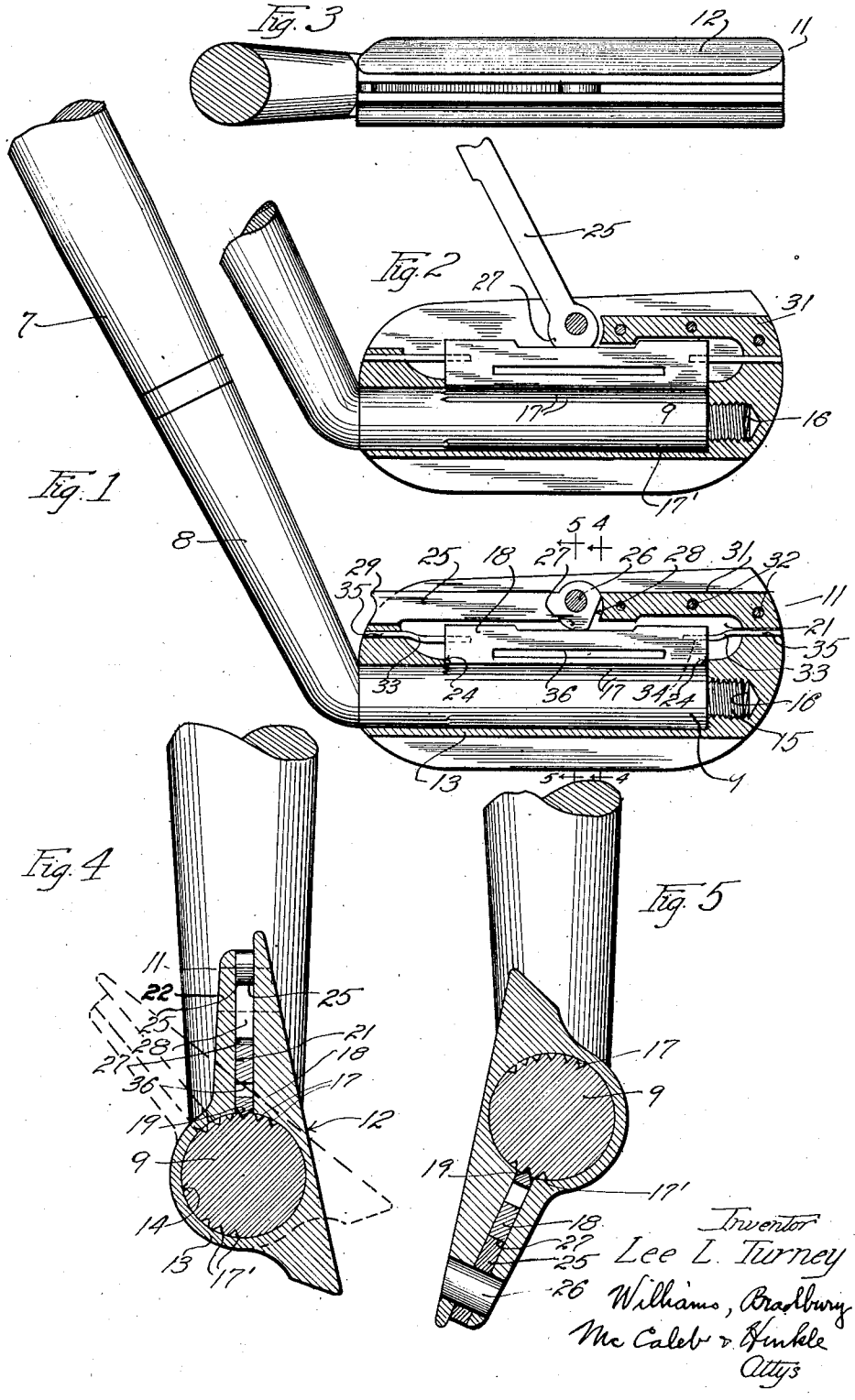
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L. L. TURNEY

GOLF CLUB

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GOLF CLUB.

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To all whom it may concern:

Be it known that I, LEE L. TURNEY, a citizen of the United States, and resident of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented a certain new and useful Improvement in Golf Clubs, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawing, forming a part of this specification.

The present invention relates to golf clubs and has particular reference to that type of club having an adjustable head so that the club may serve as an all-purpose club. By adjusting the club head the face may be inclined to any desired loft for playing different shots from a putting stroke to a niblick shot; or the club head may be reversed for playing left-handed shots. Such a club possesses the advantage that it avoids the necessity of carrying a large number of clubs, and also avoids the necessity of the golfer mastering different clubs having different weights, different shaft lengths, etc.

The principal object of the present invention is to provide improved means for locking the adjustable club head in its different positions of adjustment so that it will be rigidly held against any vibration or play. If any vibration or play of the club head relative to the stem is allowed to occur upon impact with the ball it will generally put an undesirable deflection on the shot, and if any of this vibration or play of the club head is present in the swing of the club it will give an unnatural "feel" to the club.

The rigidity of locking engagement is attained in the present construction primarily by the use of locking means which engages between the club head and the stem along a considerable length of the club head. This secures a large area of locking engagement, extending across the entire impact area of the club face, and avoids all twisting or vibration of the club face upon impact with the ball. The present form of locking means also avoids the necessity of any longitudinal movement between the club head and stem in making adjustments, and thus obviates vibration from this source. It thus permits of a threaded joint between the stem and the club head which aids in giving rigidity to the locking means.

A further object of the invention is to provide lock mechanism which does not necessitate the grasping of the club head in the making of adjustments. The club head is often rusty or becomes covered with mud or dirt, and the necessity of actually grasping the club head in making adjustments is objectionable to some players.

A further object of the invention is to provide lock mechanism actuated by a lever through which a considerable mechanical advantage can be obtained for firmly forcing the locking bar into locked engagement.

Other objects will be apparent from the following description of a preferred embodiment of my invention, taken in connection with the accompanying drawings in which:

Figure 1 is a view of the lower end of the club showing the club head in section;

Figure 2 is a similar fragmentary view showing the actuating lever and locking bar raised for releasing the club head;

Figure 3 is a plan view of the club head;

Figure 4 is an enlarged transverse section taken approximately on the plane of the line 4—4 of Figure 1, illustrating another adjusted position of the club head in dotted lines, and

Figure 5 is a similar view taken on the plane of the line 5—5 of Figure 1, showing the club head reversed for playing left-handed shots.

The club comprises the usual shaft 7 of metal or wood to the lower end of which is secured the metallic neck portion 8. Extending horizontally from this neck portion 8 is a cylindrical stem 9 on which is adjustably mounted the head 11. The front of this head is formed with a relatively flat club face 12 which may be ribbed or grooved if desired. Projecting from the back of the club head 11 is a cylindrical protuberance 13 having a cylindrical bore 14 for receiving the cylindrical stem 9. The front end of the stem 9 has a reduced threaded portion 15 which screws into a threaded bore 16 in the front end of the club head. This threaded connection affords a firm attachment between the club head and the stem against longitudinal vibration or play, as before described.

Cut in the upper portion of the stem 9 is a plurality of longitudinally extending locking grooves or slots 17 extending from the outer end of the stem 9 back to a point adjacent the heel end of the club head;

also formed in the lower part of the stem portion 9 are one or more similar slots 17′ for locking the club head to the stem in reverse relation for the playing of left-handed shots. There are a sufficient number of slots 17 in the upper portion of the stem 9 to give the necessary adjustment from putter angles of the club face to niblick angles. Obviously, a duplicate number of slots 17′ may be provided in the lower portion of the stem, if desired. These slots may be of rectangular section, or of rounded or tapered section to give sloping locking shoulders, preferably the latter. Because of the considerable length of the slots a very extended area of locking engagement can be obtained. The slots are of relatively shallow depth and accordingly the slots do not weaken the sectional strength of the stem.

Supported in the upper part of the club head is a longitudinally extending locking bar 18 which has its lower edge reduced and conformed as indicated at 19 for engagement in the slots 17 and 17′. This locking bar is of substantially the same length as the slots 17—17′, and is disposed in a slot-like opening 21 formed in the upper part of the club head. This slot opening 21 is cut through a portion of greater sectional thickness extending from the cylindrical protuberance 13 out to substantially the upper edge of the club head, as indicated at 22 in Figure 4. Attention is directed to the fact that by disposing this locking bar above the stem it is thus made possible to locate the axis of the stem relatively close to the lower edge of the club face and near the center of impact with the ball. Thus the rotative tendency of the club head on the stem occurring upon impact is minimized, and this places a considerable part of the club head mass substantially directly behind the center of impact.

The locking bar 18 has a comparatively snug engagement between the side walls of the slotted opening 21, and the ends of the bar engage shoulders 24 formed in the reduced lower part of the opening 21, which shoulders confine the bar against longitudinal movement. The bar is depressed into locking position in the slots 17—17′ by an actuating lever 25 which is pivoted in the slot-like opening 21 substantially intermediate the ends of the club head on a pivot pin 26. This pivot pin extends through both side walls of the slot 21 and is suitably held in rigid position by a driving fit, by riveting over, or by any other preferred expedient. Adjacent its pivot end, this lever 25 is formed with an eccentric or cam-shaped portion 27, one side of which is milled off to form the flat spot 28. The other end of the lever 25 has a finger projection 29 which normally projects from the rear end of the slotted opening 21, the remaining portion of the lever 25 normally lying within and closing the rear end of this slot. The front end of the slot is closed by a filler plate 31 which extends from the eccentric 27 of the lever to the front end of the slot and is secured in the slot by rivets 32.

The locking bar 18 is lifted out of the locking slots 17—17′ by short sections of spring wire 33, preferably a relatively heavy gauge of piano wire, which have their inner ends engaging in the openings 34 drilled in the ends of the locking bar and which have their outer ends resting on flat surfaces 35 formed at the ends of the slotted opening 21. The filler plate 31 may be extended down to lie over the top of the outer spring 33 to hold it in place. When the locking bar 18 is depressed under the action of the lever 25 the springs 33 are deflected out of their normal straight line and when the lever 25 is raised to release the locking bar, these springs 33 lift the locking bar out of the slots 17—17′. The eccentric portion 27 of the lever 25 applies a downward camming pressure on the top of the locking bar substantially at its center. To give the locking bar 18 a slight amount of transverse resiliency, a longitudinal slot 36 is cut therein below the point where the eccentric portion 27 engages the locking bar. The resiliency afforded by this slot maintains firm locking engagement of the bar in the groove or slot 17—17′ and takes up wear and any variation of the parts. It will be obvious that when the lever 25 is swung down into the rear end of the slot a considerable mechanical advantage can be exerted through this lever for forcing the locking bar into firm engagement with the locking slots 17—17′. The lever 25 is raised by engaging one finger under the projecting tip 29 and swinging the lever up to the position shown in Figure 2. This presents the flat spot 28 to the top of the locking bar, permitting the locking bar to lift from locking engagement in the slots 17—17′. With the lever 25 in this raised position, it affords a convenient handle through which the club head can be turned on the stem 9, without the necessity of actually grasping the club head. It will be observed that when the club head is reversed for playing left-handed shots, as shown in Figure 5, no part of the locking mechanism will project from the then lower edge of the club head where it would be an obstruction. If desired, any suitable indicia can be placed on the neck portion 8 of the club and on the adjacent end of the club head for indicating the various lofts of the club face.

I do not intend to be limited to the particular details herein shown and described,

as it will be apparent that the essence of my invention is capable of embodiment in different forms and constructions.

I claim:

1. In a golf club, a shaft, a stem portion, a head rotatably mounted on said stem portion, for adjustment about the longitudinal axis of the head, and a vertically slidable locking bar carried by said head engaging locking shoulders on said stem portion.

2. In a golf club, the combination of a shaft, a supporting member carried by said shaft, a head mounted on said supporting member, and a vertically reciprocable locking bar embodied in said head and movable relative to said head and to said supporting member for locking the two together.

3. In a golf club, the combination of a shaft, a mounting member carried by said shaft, a head member rotatably supported on said mounting member, and a vertically slidable locking bar carried by said head member and movable relative to both of said members for locking the two together.

4. In a golf club, the combination of a shaft, a supporting member carried by said shaft, a head member adjustably mounted on said supporting member, and a lever actuated locking mechanism carried by the head member for locking the two members together.

5. In a golf club, the combination of a shaft, a supporting member carried by said shaft, a head member adjustably mounted on said supporting member, a locking bar for locking said members together, and a pivoted lever for actuating said bar.

6. In a golf club, a shaft, a supporting member on the lower end of said shaft, a head member rotatably mounted on said supporting member, a locking bar carried by said head member engaging locking shoulders on said supporting member, and a lever for actuating said locking bar.

7. In a golf club, a shaft, a supporting member carried by said shaft, a head member rotatably mounted on said supporting member, a reciprocating locking bar carried by said head member engaging locking shoulders on said supporting member, and a lever pivoted to said head member for actuating said locking bar.

8. In a golf club, a shaft, a stem portion extending from the lower end of said shaft, a head rotatably mounted on said stem portion, a locking bar carried by said head and disposed substantially longitudinally of said stem portion, and means for actuating said locking bar.

9. In a golf club, the combination of a shaft, a stem portion carried on the lower end of said shaft, a head rotatably mounted on said stem portion, and a locking member carried by said head and extending substantially longitudinally of said stem portion for engaging locking shoulders on said stem portion.

10. In a golf club, the combination of a shaft, a stem portion extending from the lower end of said shaft, a head rotatably mounted on said stem portion, and a locking bar carried by said head adapted to be projected edgewise into locking engagement with shoulders on the other of said members.

11. In a golf club, the combination of a shaft, a mounting member projecting at an angle from the lower end of said shaft, a head member adjustably supported on said mounting member, and a vertically movable locking bar carried by one of said members and adapted to engage locking shoulders on the other of said members, said locking bar extending substantially longitudinally of said mounting member.

12. In a golf club, the combination of a shaft, a neck, a mounting member carried by said neck, a head sleeved axially over said mounting member with the striking face of said head substantially parallel to the axis of said mounting member, said head being adjustable on said mounting member, and a vertically slidable locking member carried by said head adapted to engage locking surfaces on said mounting member.

13. In a golf club, the combination of a shaft, a stem portion carried by the lower end of said shaft, a head rotatably mounted on said stem portion and a locking bar carried by said head and extending longitudinally of said stem portion, said locking bar being adapted to be projected radially into locking grooves in said stem portion.

14. In a golf club, the combination of a shaft, a head member having an axial bore therein extending substantially parallel with the striking face of said head member, a stem member projecting from said shaft and rotatably engaging in said bore, and vertically slidable locking mechanism carried by said head member adapted to engage locking shoulders on said stem member.

15. In a golf club, the combination of a shaft, a stem portion projecting from the lower end of said shaft, a head axially mounted on said stem portion, said stem portion having a plurality of parallel locking grooves extending longitudinally thereof, said head having a slot-like opening therein, and a locking bar mounted in said opening adapted to engage in said grooves.

16. In a golf club, the combination of a shaft, a stem portion extending from the lower end of said shaft, a head rotatably mounted on said stem portion, said stem portion having a plurality of parallel locking grooves extending longitudinally thereof, said head having an opening therein

above said stem portion, and a locking bar supported in said opening and movable edgewise into engagement with said locking grooves.

17. In a golf club, the combination of a shaft, a stem portion extending from the lower end of said shaft, a head rotatably mounted on said stem portion, said stem portion having a plurality of longitudinal locking slots therein, said head having a longitudinal opening therein, a locking bar in said opening adapted to engage said locking slots, and pivoted means carried by said head for actuating said locking bar.

18. In a golf club, the combination of a shaft, a supporting member carried by said shaft, a head member adjustably mounted on said supporting member, a locking bar carried by one of said members adapted to engage locking shoulders on the other of said members, and separate pivoted means for actuating said locking bar.

19. In a golf club, the combination of a shaft, a supporting member carried by said shaft, a head member adjustably mounted on said supporting member, a locking bar carried by one of said members adapted to engage locking shoulders on the other of said members, pivoted means for moving said locking bar in one direction, and spring means for moving said locking bar in the other direction.

20. In a golf club, the combination of a shaft, a mounting member carried on the end of said shaft, a head rotatably supported on said mounting member, a locking bar carried by said head and extending longitudinally of said supporting member, pivoted means for depressing said locking bar into locking grooves in said supporting member, and spring means engaging the ends of said locking bar for disengaging the latter from said locking grooves.

21. In a golf club, the combination of a shaft, a supporting member carried by said shaft, a head rotatably mounted on said supporting member, for angular adjustment of the striking face about the longitudinal axis of the head, a locking bar carried by said head for engaging locking grooves in said supporting member, and means for holding said locking bar in said grooves under resilient pressure.

22. In a golf club, the combination of a shaft, a stem portion projecting from said shaft, a head rotatably mounted on said stem portion, for adjustment about the longitudinal axis of the head, a locking member carried by said head and adapted to engage locking grooves in said stem portion, and an actuating member for actuating said locking member, one of said members embodying resilient means for holding said locking member in said grooves under resilient pressure.

23. In the golf club, the combination of a shaft, a stem portion projecting from said shaft, a head rotatably mounted on said stem portion, said stem portion having a plurality of parallel longitudinal locking grooves therein, said head having a longitudinal opening therein, a locking bar in said opening, and a lever pivoted to said head pressing said bar into one of said grooves, said locking bar having an opening therein for giving the latter transverse resiliency.

24. In a golf club of the class described, the combination of a shaft, a neck portion on the lower end of said shaft, a stem extending from said neck portion, longitudinally extending parallel locking grooves in the upper and lower sides of said stem portion, a head having a cylindrical bore mounted on said stem, said head having a slot-like opening therein, a locking bar mounted in said opening and adapted to be moved edgewise to present its inner edge to one of said locking grooves, a lever pivotally mounted in said opening having a cam portion adjacent its pivoted end engaging said locking bar, the free end of said lever swinging into said slot-like opening toward said neck portion when said head is in off position, and a filler member closing the front part of said opening above said locking bar.

In witness whereof, I hereunto subscribe my name this 27 day of February, 1925.

LEE L. TURNEY.