

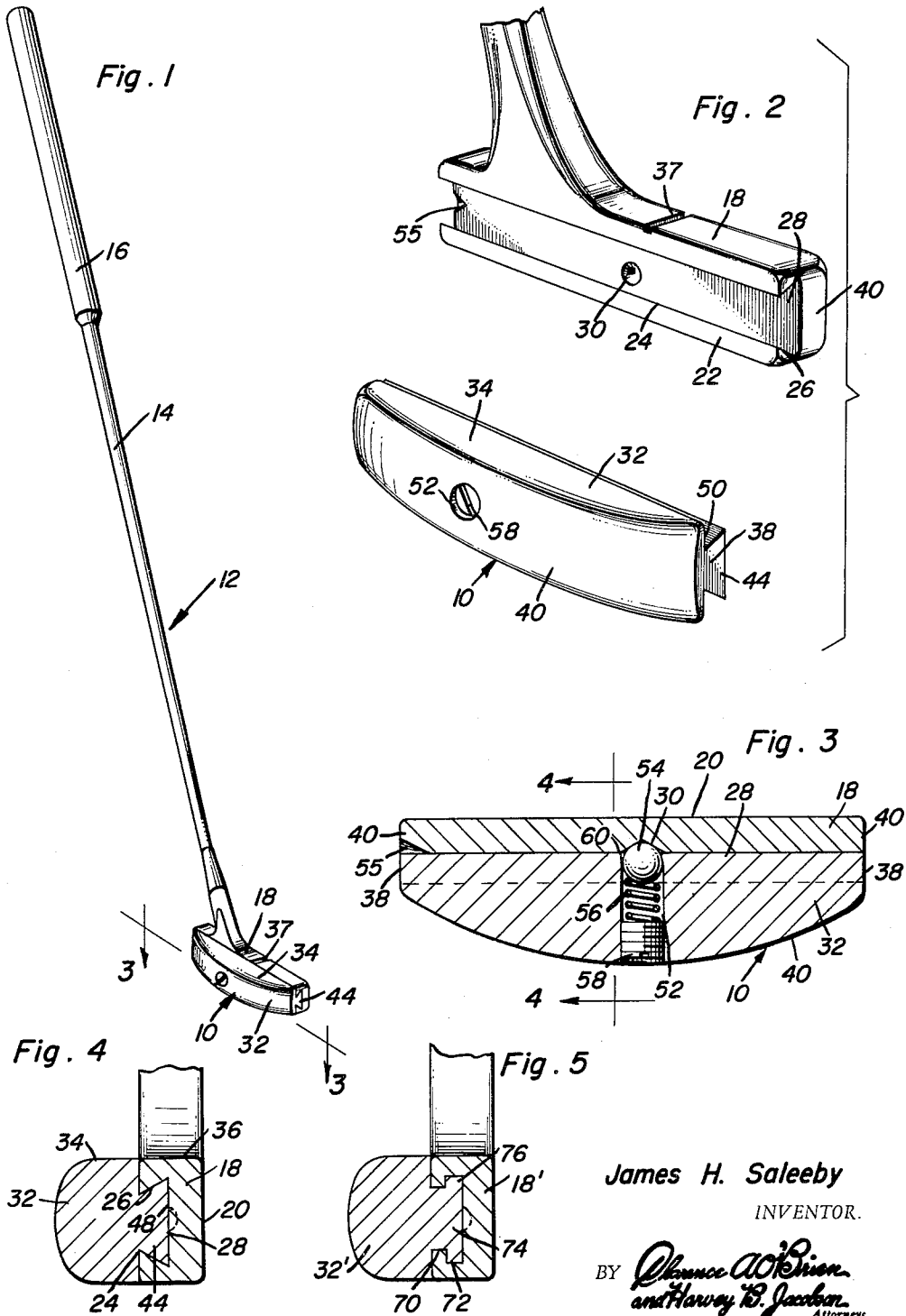
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PUTTER WITH ATTACHED WEIGHT

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PUTTER WITH ATTACHED WEIGHT

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The present invention generally relates to novel and improved structural details in connection with a golf club having structural features which enable the attachment and detachment of selected additional weights to vary the weight characteristics as well as the weight distribution characteristics of the club.

It is well known that different individuals require golf clubs having various weight characteristics and weight distribution characteristics depending upon the individual whims of the golfer as well as the strength and muscular coordination of the golfer and also different conditions encountered on various golf courses also require golf clubs having heads with different weights or weight distribution characteristics. This is especially true in connection with putters since a putter is normally used generally in the manner of a pendulum or with a very short stroke whereby change in weight characteristics is effective for providing the desired shape, configuration and weight of the putter head in order to enable the putter to effectively drive the ball towards the cup. For example, if the green is quite "fast" due to very hard surfaces and very short grass, a relatively lightweight putter may be employed effectively. However, when the surface of the green is "slow" such as when the surface is soft from recent rain or watering or the grass is relatively high, a golf putter having heavier weight characteristics may be desirable. Of course, the desirability of a particular weight is also dependent upon the strength characteristics of the golfer. However, if the golfer has consistent stroke characteristics, it would be advantageous to vary the weight characteristics of the head when the characteristics of the green vary rather than trying to vary the stroke characteristics.

An object of the present invention is to provide a golf putter having structural features incorporated therein which enable a weight to be easily attached thereto or detached therefrom depending upon the desires of the golfer and which will securely retain the weight in a stationary position on the club head and also distribute the weight symmetrically in relation to the center of gravity of the existent club head.

Another object of the present invention is to provide an attachable weight for a golf club head in which the weight is distributed substantially throughout the area of one side of the club head and is provided with rounded contours to eliminate any possible detrimental effects from the addition of the weight.

A further important object of the present invention is to provide a golf club head having a detachable weight in which the golf club head and weight have cooperating interlocking structures which enable sliding interlocking relationship between the weight and the golf club head together with spring-biased ball detent means for securing the weight in position and also securing the weight so that it does not shake or move in relation to the club head during use of the club head with the weight thereon.

Still another feature of the present invention is to provide a golf club head with attached weight which is simple in construction, easy to use, effective for its particular pur-

poses, variable in weight thereby enabling a group of attachable weights to be employed and relatively inexpensive to manufacture.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part thereof, wherein like numerals refer to like parts throughout, and in which:

FIGURE 1 is a perspective view of a putter incorporating the attached weight of the present invention therein;

FIGURE 2 is an exploded group perspective view illustrating the putter head and the attached weight in their associated relationship;

FIGURE 3 is a longitudinal, sectional view taken substantially upon a plane passing along section line 3-3 of FIGURE 1 illustrating the structural details of the weight and the golf club head with the ball detent securing mechanism also being illustrated;

FIGURE 4 is a transverse, sectional view taken substantially upon a plane passing along section line 4-4 of FIGURE 3 illustrating the dovetail sliding interconnection between the attached weight and golf club head; and

FIGURE 5 is a detail sectional view similar to FIGURE 4 but illustrating a T-shaped configuration of interlocking connection between the weight and club head.

Referring now specifically to the drawings, the numeral 10 generally designates the attached weight of the present invention and the numeral 12 generally designates a golf club and particularly a putter having the usual elongated shank 14, handle or handgrip 16 and club head 18 which is elongated and generally rectangular in configuration and provided with the usual flat ball-engaging surface 20. The particular construction of the golf club itself insofar as the handle and ball-engaging surface 20 is concerned may be varied in that the weight 10 of the present invention may be attached to any conventional golf putter or golf club.

The rear face of the club head 18 is smooth as indicated by numeral 22 and provided with a longitudinal groove or recess 24 extending throughout the length thereof with the groove or recess 24 having inwardly diverging side walls 26 thus defining a dovetail groove having a constant cross-sectional area throughout its length with the groove 24 being continuous through both ends of the club head 18. The inner surface of the groove 24 is planar as designated by the numeral 28 and is parallel to the ball-engaging face 20 of the club head 18. Disposed centrally in the planar inner surface or bottom surface 28 of the groove 24 is a recess 30 which may be partially spherical in configuration or partially conical. The orientation of the recess 30 may be varied but preferably, it may be placed at the longitudinal center of the surface 28.

The attached weight 10 incorporates an elongated solid body 32 having a length generally equal to the length of the club head 18 and having generally parallel top and bottom surfaces 34 to align with the generally parallel top and bottom surfaces 36 of the club head 18. The end edges of the body 32 are also generally parallel as indicated by numeral 38 for alignment with the flat end edges 40 of the club head 18 with this relationship of peripheral surfaces of the weight and club head being illustrated in FIGURES 3 and 4 respectively. The rear face of the weight body 32 is generally arcuately curved from end-to-end as illustrated in FIGURE 3 and also arcuately curved

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from top to bottom edge thereof as illustrated in FIGURE 4 thereby forming a rounded rear surface for the club head when the weight 10 is attached as illustrated in FIGURE 1 and also in FIGURES 3 and 4.

The inner surface of the body 32 is provided with a longitudinal projection 44 which has a planar inner surface 48 for matching engagement with the planar surface 28 and also the side edges of the projection 44 converge away from the planar surface 48 as indicated by numeral 50 for correspondingly engaging the inclined surfaces 26 of the groove 24 for interlocking engagement therewith. Thus, in order to mount the weight 10 on the club head 18, it is only necessary to register the dovetail projection 44 with the dovetail groove 24 and slide the weight longitudinally until the weight body 32 is aligned with the club head 18.

For securing the weight body 32 in position, the body 32 is provided with a centrally disposed bore 52 having a spherical ball detent 54 movably mounted therein and spring-biased towards the flat inner surface 48 of the projection 44 by a coil compression spring 56 with there being a closure setscrew 58 screwed into the externally threaded outer end portion of the bore 52 engaging the end of the spring 56 opposite from the engagement of the spring 56 with the ball detent 54 thereby varying the compression of the spring 56 for varying the effectiveness of the ball detent 54.

As illustrated, the inner end of the bore 52 is slightly narrowed or reduced in diameter as at 60 for preventing the ball detent 54 from exiting from the bore 52. However, the spring 56 retains the ball detent 54 with a portion of the periphery thereof projecting beyond the surface 48 of the projection 44 so that the ball detent 54 will snap into the recess 30 to lockingly engage the body 32 on the club head 18. Also, the ball detent 54 and the spring 56 serve to urge the body 32 away from the club head 18 which will securely urge the inclined surfaces 50 into engagement with the inclined surfaces 26 whereby a wedging action will occur therebetween to prevent any lateral shifting or looseness in the weight 32. Thus, by tightening or loosening the screw 58 as necessary, the tension or compression of the spring 56 may be varied to assure that the weight 10 will not shift in relation to the club head. This structure will enable the weight 10 to be interlocked on the head 18 by a longitudinal sliding movement in either direction in relation to the club head 18 and at the same time will prevent any shifting or accidental disengagement of the weight. Further, the orientation of the recess 30 and the ball detent may vary dependent upon the particular shape and configuration of the weight as well as the particular shape and configuration of the club head with which the weight is associated. To facilitate movement of ball detent 54 onto the surface 28, a tapered indentation 55 is provided between end wall 40 and surface 28 thereby allowing easier assembly of the weight with the club head. Also, the top surface of the club head 18 is provided with a groove 37 coincident with the centerline of the club head for guiding the movement of the head in a desired direction. This groove could also extend across the top surface of the weight body 32 if desired.

FIGURE 5 illustrates a modified form of the present invention in which the club head 18' is provided with a T-shaped groove 70 having undercut longitudinal portions 72 at the inner portion thereof for receiving a corresponding T-shaped projection 74 on the weight body 32'. The T-shaped projection 74 is provided with a pair of projecting flanges 76 which slidably interlock with the undercut portions or grooves 72 in the T-shaped groove 70 in the club head 18'. The spring detent mechanism for securing the weight body 32' in place may be the same as that employed in the structure illustrated in FIGURES 1-4 with the spring detent serving to prevent longitudinal movement of the weight body 32' as well as preventing any lateral shifting thereof.

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The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. In combination with a golf club head having a generally rectangular configuration, a weight body having a generally similar configuration attached to the rear face of the head, the rear face of said club head including a longitudinal groove therein having an undercut portion, said body having a longitudinal projection therein having a longitudinal enlargement for interlocking engagement with the undercut portion of the groove, and means interconnecting the projection and groove for locking the body on the head, said means interlocking the projection and the groove including a bore in said body, a ball detent movable in said bore and projecting from the surface of the projection received in the groove, a coil spring engaging said ball, the bottom of said groove having a recess therein for receiving the ball detent whereby the ball detent will secure the body to the club head by preventing longitudinal movement of the body in relation to the club head, a threaded adjustable member engaging the spring in opposed relation to the ball detent for varying the compression of the spring thereby enabling lateral force to be exerted on the body by the ball detent pushing against the bottom of the recess in the groove thereby positively securing the interlocking projection and side walls of the groove thereby preventing lateral shifting movement thereof.

2. The structure as defined in claim 1 wherein said groove is of dovetailed configuration with the projection on the body being of corresponding dovetailed configuration.

3. The structure as defined in claim 1 wherein said groove is generally of T-shaped configuration and said projection is correspondingly of T-shaped configuration for sliding interlocking engagement with the groove.

4. In combination with a golf club head having an elongated configuration, a weight body having a generally similar configuration attached to the rear face of the golf club head, the rear face of the golf club head including a longitudinally extending groove communicating with the ends of the golf club head and being defined by parallel continuous side walls, said side walls having their outer edge portions closer together than their inner edge portions thereby forming an undercut throughout the length of the groove, said weight body having a longitudinally extending projection thereon corresponding in length to the groove for longitudinal sliding interlocking engagement with the groove, said projection having parallel side walls with the outer edge portions thereof being spaced further apart than the inner edge portions for interlocking engagement with the side walls of the groove, and spring urged ball detent means carried by said weight body and normally projecting slightly beyond the surface of the projection which is adjacent the bottom of the groove for resilient contact with the bottom of the groove for locking the projection in the groove and biasing the side walls of the projections into close fitting removable contact with the side walls defining the groove thereby reducing movement of the weight body in relation to the golf club head, one end portion of the groove being provided with a tapering recess in the bottom thereof forming a guide for engaging the ball detent means when the projection is moved longitudinally into the groove for facilitating initial inward movement of the ball detent means in relation to a weight body when the weight body is assembled on the golf club head, said groove also having a recess disposed intermediate the ends for receiving the ball detent means when the projection is prop-

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erly oriented in the groove, said ball detent means including a coil compression spring, a ball detent engaging one end of the spring and a screw-threaded member engaging the other end of the spring for varying the compression thereof, said weight body having a transverse bore extending between the surface of the projection which engages the bottom of the groove and the outer surface thereof for enabling adjustment of the screw-threaded member thereby varying the compression of the spring for varying the resilient characteristics thereof.

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