April 8, 1969 E. J. HASTEN, JR., ET AL 3,437,341

PRACTICE GOLF CLUB

Filed Jan. 4, 1967

FIG. 1

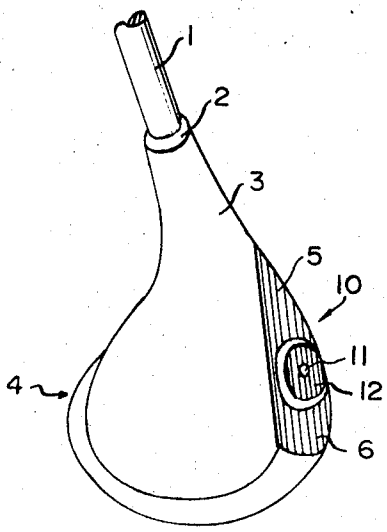


FIG. 2

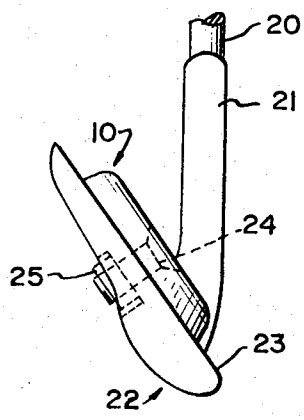


FIG. 3

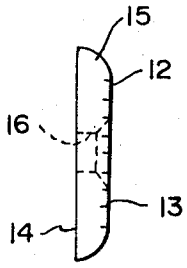


FIG. 4

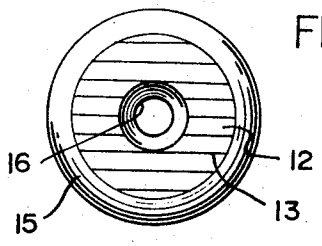


FIG. 5

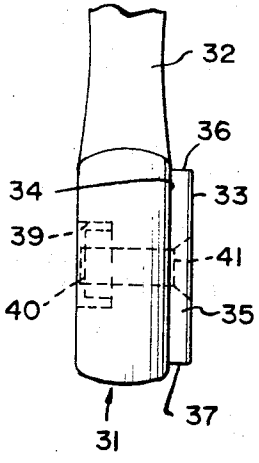
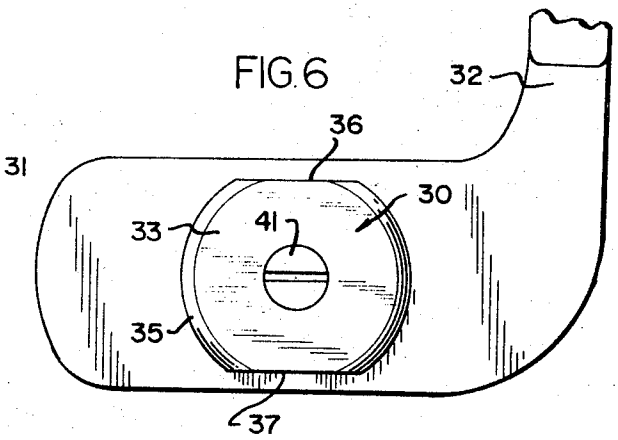


FIG. 6



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PRACTICE GOLF CLUB

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U.S. Cl. 273—186 4 Claims

ABSTRACT OF THE DISCLOSURE

A practice golf club including a disc-like impact member overlying the sweet-spot of the club head. The peripheral edge of the impact member is formed by an outwardly rounded surface which, if struck by a golf ball, causes the ball to follow an exaggerated improper flight path clearly indicating a failure to impact the club head sweet-spot. The top and bottom potrions of the impact member may be segmented for aligning purposes and the impact member may either be integral with the club head or detachably secured thereto.

This invention relates to a golf club and more particularly to the ball striking surface of the head of a golf club.

Golfers from the occasional Saturday "duffer" to the accomplished professional are constantly striving to improve their performance in their recreational or business activities, respectively. Good, accurate golf involves the development of a comfortable stance, a smooth swing and the accurate contact of the club head with the golf ball. Many varied devices and golfing aids have been developed to assist a golfer in improving his stance and swing in an effort to aid him in more squarely impacting the ball with the club head.

Most golf clubs being manufactured today are designed with a transversely grooved hitting area or striking face. The plane of the striking face is located by the club manufacturer at the proper angle to and distance from the shaft by the configuration of the neck and head of the club. Within the striking surface of every golf club, whether it be a putter, iron or wood, a much smaller area known commonly as the "sweet spot" is present. This smaller area generally coincides with the center of balance or effort of the club. As a result, only when the golf ball is met by the club head at this particular small area of the striking surface of the club head face are the most effective shots produced.

The golf club of the present invention is designed to direct the golfer's attention to the importance of meeting the ball only on this prime striking zone or "sweet spot" of the club head.

The golf club, and particularly the club head of the invention is designed to produce satisfying results when the prime striking zone of the head squarely meets the ball. When, however, the ball is not met squarely by the prime striking zone of the club head, the flight of the resulting poor shot is substantially exaggerated by the construction of the club head. By producing such an exaggerated poor ball flight, the attention of the user of the club is drawn with greater particularity to impacting the ball with the prime striking zone of the club head. Therefore, while the golfer works at perfecting his stance and swing, he also concentrates upon the effect of this particular portion of the club head on the ball once the club has impacted the ball.

To direct the golfer's attention more specifically to the desirability of impacting the ball with the "sweet spot" of the club head, the club head of the invention has been developed. This club head is formed in a normal

manner with a typical flat surface which would ordinarily be used in striking the ball and is disposed in a predetermined plane with respect to the club shaft. However, in the prime striking zone or "sweet spot" of this flat club surface, a raised portion is provided which substantially encompasses the prime striking zone of the flat surface. This raised portion is formed in a manner such that its ball contacting face is flat and in a plane parallel to that of the flat surface of the club head.

The peripheral surfaces connecting the flat face of the raised portion and the flat surface of the club head are generally rounded in a convex configuration. Therefore, when the ball is properly met with the flat face of the raised portion and thereby along the axis of the center of balance or effort of the club, the most effective use of the club is obtained. Should, however, the golfer not connect squarely with the flat face of the raised portion, the ball will be deflected by the convex peripheral surface connecting the raised portion with the flat club surface and deflect the ball in a drastic manner, accentuating the flight of what would be a normally poor shot.

The raised portion on the normal club hitting surface can be formed integrally with the club head during manufacture or can be made separately as the disc which can be assembled to the club head. In each instance, the club head is preferably properly balanced with respect to the club shaft to provide a smooth and controlled swing by the user. The flat outer face of the projecting portion of the club head defining the prime striking zone of the club, whether formed integrally with the club head or as a removable disc secured to the club head, is made to lie in a predetermined optimum plane with respect to the club shaft. This plane is normally the same as that in which an ordinary club striking face would lie.

Normally, when a disc is employed, it is formed from a high impact metal and is bolted to the club head on the prime striking zone of the flat club surface. While the disc is normally made of metal, it may, in some instances, be more desirably fabricated from a high impact organic composition applied to the club head in the same manner. Therefore, the club head may be fabricated from a metal, and the disc attached thereto may be of metal or an organic composition. Where the club head is fabricated from other than metal or a combination of materials, the disc applied thereto may be of metal or a high impact organic composition.

These and various other objects and advantages of the invention will hereinafter become fully apparent, from the following description of the appended drawings illustrating presently preferred embodiments thereof and wherein:

FIG. 1 is a perspective view of a wood of the invention carrying a disc on the prime striking zone on the club head;

FIG. 2 is a side elevation of an iron of the invention carrying a raised disc bolted to the striking surface of the club head;

FIG. 3 is a side elevation of a disc of the invention;

FIG. 4 is a front view of the disc illustrated in FIG. 3;

FIG. 5 is a side elevation of a putter of the invention carrying a disc on the putting surface; and

FIG. 6 is a front view of the putter illustrated in FIG. 5.

FIG. 1 illustrates a golf club commonly called "a wood." This club includes a shaft **1** which is secured at **2** to the neck portion **3** of a club head body, generally designated **4**. The end of the shaft **1** opposite the neck portion **3** is generally provided with a hand grip portion formed from leather, rubber or other non-slip composition. The club head body **4** is fabricated, utilizing weights and a predetermined configuration to provide a center of balance or effort which will produce the most effective flight of a golf ball when the ball is squarely met on the axis of this center. As is shown in FIG. 1, the club

head body is formed with a generally flat surface **5**, the plans of which is set by the manufacturer at a predetermined angle with respect to the shaft of the golf club, the neck portion **3** and center of balance of the club head. The flat surface **5** of the club head is ordinarily provided with a series of generally horizontal spaced grooves which aid in developing a degree of friction between the ball and head surface when the two meet.

In the club of the invention, a generally circular flat disc generally designated **10** is secured to the flat surface **5** of the club head body **4** utilizing a bolt **11**. The disc is positioned on the flat surface **5** of the club head in a direct alignment with the axis of the center of balance or effort of the club. As is shown in FIG. 1, the ball striking face **12** of the disc is provided with grooves **13** in a manner similar to those formed in flat surface **5** of the club head body. Where the precise balance of matching clubs is desired, the ball striking surface **12** of the disc is made to lie in the plane ordinarily occupied by flat surface **5** of the club head. The weight distribution in the club head is also modified to produce optimum club balance.

Referring particularly to FIGS. 3 and 4, it can be seen that a disc **10** such as is connected to a wood of the type shown in FIG. 1 has a flat ball striking face **12** which is provided with grooves **13**. The surface of the disc opposite the striking face **12**, designated **14** is parallel to the striking face and has a somewhat greater area than the striking face. The parallel surfaces **12** and **14** of the disc **10** are connected by an annular peripheral surface **15** which, as can be seen in FIG. 3, connects the spaced surfaces **12** and **14** describing a generally convex arc. An aperture **16** is provided along the axis of the disc and is counter-sunk in a manner permitting a screw to be used to secure the disc to a club such as illustrated in FIG. 1.

The disc **10** is firmly secured to the flat surface **5** of the club head utilizing a screw **11**, the head of which is flush with striking face **14**. When the disc has been properly placed, the ball striking surface **12** thereof essentially defines the prime-striking zone or "sweet spot" of the club head.

Referring to FIG. 2, a club commonly known as an iron is shown. This iron comprises a shaft **20** which is ordinarily provided with a hand grip similar to that discussed with respect to the wood of FIG. 1, but not shown. The shaft is connected to the neck portion **21** of the club head body, generally designated **22** in this instance. A disc **10**, similar to that illustrated in FIGS. 3 and 4 is secured to the flat horizontally grooved surface **23** of the club head by a bolt **24** disposed flush with disc surface **12** and a nut **25** which is secured to the surface of the club head opposite flat surface **23**. The disc **10** in FIG. 2 is located on club head **22** in a manner such that the ball striking face **12** of the disc is properly aligned with respect to the axis of the center of balance or effort of the golf club.

While FIGS. 1 and 2 of the invention have club heads wherein a disc **10** is secured to the normal flat striking surface of the club head, the raised portion provided by the disc can be cast or carved integrally with the formation of the particular club head as dictated by manufacturing economics.

FIGS. 5 and 6 of the drawings illustrate a club commonly known as a putter. This club utilizes a disc **30** secured to the body **31** of the club head. This putter is formed with a shaft connecting neck **32** secured to the club head body **31**. In this instance, the disc **30** is provided with parallel front and back surfaces **33** and **34** which are connected by a peripheral surface **35**. The top and bottom portions **36** and **37**, respectively of surface **35** are disposed essentially at a normal angle with respect to the planes of surfaces **33** and **34** while the remainder of surface **35** is convex in nature and similar to that of the disc of FIGS. 3 and 4. As can be best seen in FIG. 6, the top and bottom portions of the disc **30** have been segmented to provide surfaces **36** and **37** which are parallel to the top and bottom surfaces of the club head body **31** and serve to aid the user in aligning the club head with the surface over which it passes. The side of the club head opposite the striking surface is provided with a countersunk opening **39** which receives and holds in a recessed condition, a nut **40** which coacts with flush mounted bolt **41** to firmly secure disc **30** to the front face of the club head.

The golf clubs shown, namely a wood, iron and putter, when provided with a raised portion or disc on the hitting or striking surface of the club head in a position defining the prime striking zone or "sweet spot" of the golf club can be used in training a golfer to concentrate on meeting the golf ball only with the raised portion or disc to produce the most effective use of the club. When a golfer meets the ball squarely on the ball striking surface of the raised portion or disc provided on the club head, maximum distance will be produced in proportion to the force behind the club. Should, however, the club user meet the golf ball other than squarely with the club of the invention, in a manner which would ordinarily produce a bad shot, the convex peripheral connecting surface of the raised portion or disc will cause a substantial exaggeration of the direction of the flight of the ball. This grossly exaggerated flight will bring home hard to the golfer the fact that, even though his stance and swing were good, he has failed to properly meet the ball with the primary striking zone of the club-head and has thereby failed to obtain the most effective possible use of the club. Practice with such a club will tend to develop a sense of concentration in the user not only of the importance of his stance and a smooth fluid swing, but also of the importance of properly meeting the ball in a manner whereby he will be able to consistently predict with reasonable accuracy the flight and distance his ball will cover.

While the manufactured versions of the balanced club heads of the invention may be provided with removable discs or integrally formed projections, existing clubs can be modified by the application of the discs of the invention to the striking face of the club. Where, in the modification of the heads of existing clubs, it is desired to maintain the precise balance of the club and planar relationship of the disc striking surface, the head can be machined to compensate for the weight of the disc and the normal striking face reduced in depth to accommodate the thickness of the disc. Therefore, the present invention can be used in the production of matched and balanced club sets, individual practice clubs, and the adaptation of old clubs to produce the results achieved by the invention.

Various modes of carrying out the invention are contemplated as being within the scope of the following claims particularly pointing out and distinctly claiming the subject matter which is regarded as the invention.

We claim:

1. A golf club comprising a shaft, a golf club head and means for indicating that a golf ball struck thereby has not properly impacted the prime striking zone of the club head, said head including a generally flat forwardly facing surface and means securing said head to said shaft, the orientation of said flat surface relative to said shaft and the dimensions of said flat surface being such that said flat surface has characteristics of a conventional flat face used to strike golf balls, the center of balance of said club coinciding with a small area on said flat surface, said indicating means comprising an impact element disposed on said flat surface and projecting forwardly of the plane thereof, said impact element having a planar forwardly facing surface extending parallel to said flat surface and a peripheral edge surface, said peripheral edge surface of the impact element being spaced between the heel and toe portion of the club head, said impact element overlying said small area on said forwardly facing surface to form the prime striking zone of the club head, the planar surface of the impact element forming a prime ball striking surface on the club head, said peripheral edge surface of said impact member being outwardly rounded

so as to form a peripheral convex surface extending from said planar surface of said impact member to said flat surface of said head, said outwardly rounded peripheral edge surface of said impact member being engageable by a golf ball when swung thereat in a conventional swing to deflect said ball along an obviously improper flight path.

2. The golf club of claim 1 wherein the impact element is formed integral with the club head.

3. The golf club of claim 1 wherein the impact member comprises a separate member having a pair of generally parallel planar surfaces one of which forms the planar forwardly facing surface of the impact member and the other of which is secured in firm abutting engagement with the flat forwardly facing surface of the club head.

4. The golf club of claim 3 wherein the separate member is removably secured to the club head.

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GEORGE J. MARLO, *Primary Examiner.*

U.S. Cl. X.R.

273—164, 168, 171, 173, 175, 194