May 19, 1936. J. P. GALLAGHER 2,041,676

GOLF CLUB

Filed May 9, 1934 2 Sheets-Sheet 1

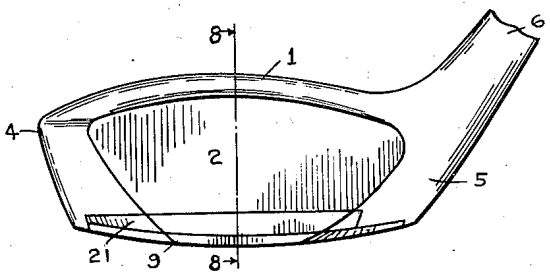

Fig. 1

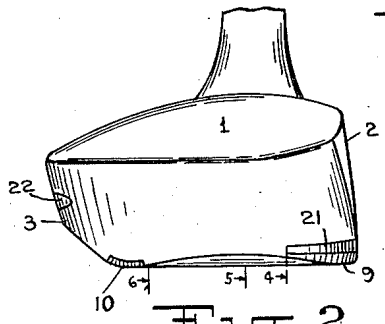

Fig. 2

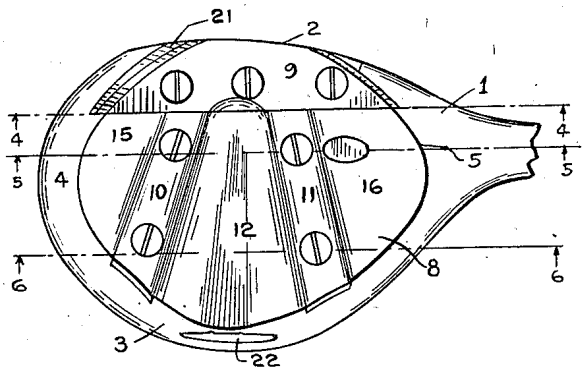

Fig. 3

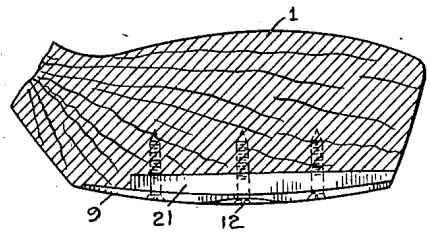

Fig. 4

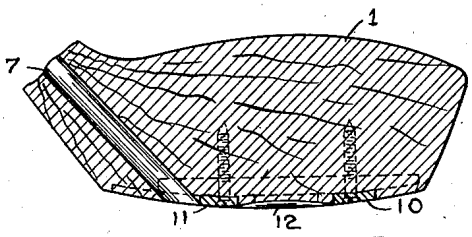

Fig. 5

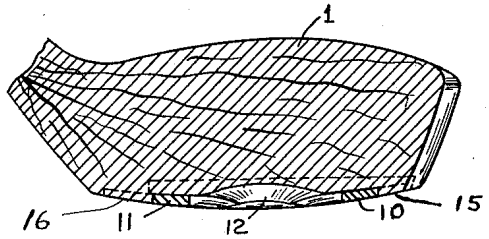

Fig. 6

INVENTOR
James P. Gallagher
BY
Chas. W. Hull.
ATTORNEY

May 19, 1936. J. P. GALLAGHER 2,041,676

GOLF CLUB

Filed May 9, 1934 2 Sheets-Sheet 2

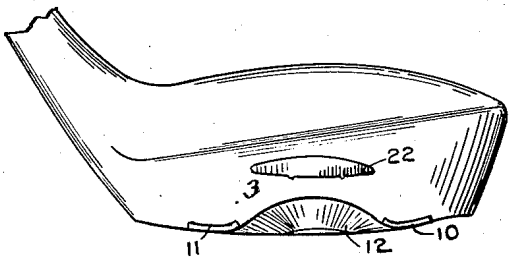

Fig. 7

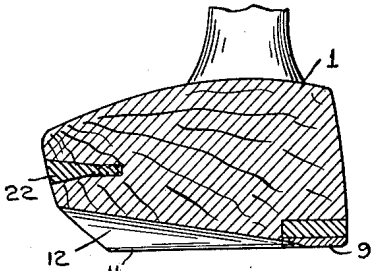

Fig. 8

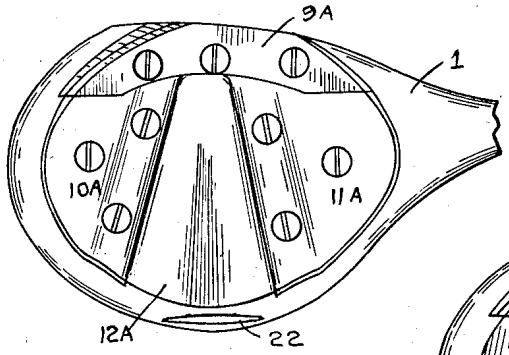

Fig. 9

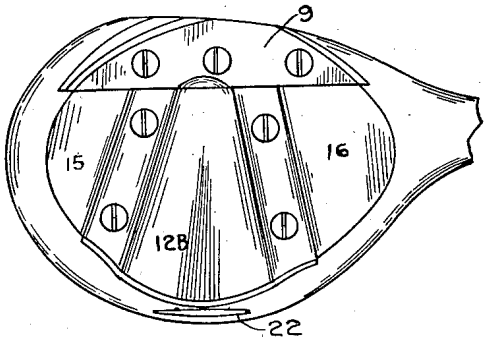

Fig. 10

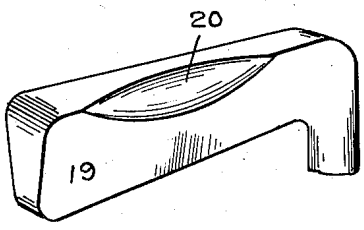

Fig. 11

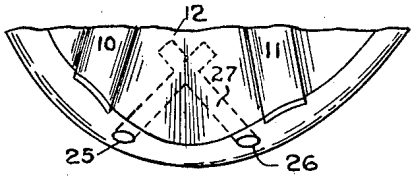

Fig. 12

INVENTOR
James P. Gallagher
BY
Chas. W. Hull
ATTORNEY

Patented May 19, 1936 2,041,676

UNITED STATES PATENT OFFICE

2,041,676

GOLF CLUB

James P. Gallagher, Arlington, N. J.

Application May 9, 1934, Serial No. 724,669

4 Claims. (Cl. 273—77)

The present improvements relate, in general, to golf clubs, and more particularly to clubs of the type known as "woods" although they may be adapted and applied in "irons" as well.

Among others, it is a primary object of the improvements, to improve the head of the club, so as to facilitate the swing or stroke. Means are accordingly provided to minimize resistance of the air and turf to the club head so that a sweeter, truer swing may be executed.

A further object is to provide a streamline club surface which will "ride" through the air with reduced resistance.

Another object is to provide means to facilitate turning of the club head during travel through the turf, so that the divot is reduced, and any sensation of impact to the wrists and arms of the player, is eliminated.

An additional object is to provide an improved sole or bottom surface of the wooden club head, whereby the impact applied to the turf and ball will be similar to that applied by an "iron" club.

A further object is to improve the wooden clubs, such as the driver, brassie, spoon, etc., so as to facilitate strokes on the fairway, from bad lies, from the rough and from sloping terrain.

Another object is to provide an improved means for weighting wooden clubs.

The improvement of the wooden clubs without impairing their normal efficiency, their balance, and without imposing additional parts on the club head, constitutes further objects of the improvements.

Other objects and advantages of the improvements will be apparent to those skilled in the art, upon reference to the accompanying specification and drawings, in which—

Fig. 1 is a front elevation of a golf club head embodying one form of the invention;

Fig. 2 is a side elevation of the club head looking toward the toe of the club;

Fig. 3 is a bottom plan view of the club head;

Fig. 4 is a section on line 4—4 of Figs. 2 and 3;

Fig. 5 is a section on line 5—5 of Figs. 2 and 3;

Fig. 6 is a section on line 6—6 of Figs. 2 and 3;

Fig. 7 is a rear end elevation of the club head;

Fig. 8 is a section on line 8—8 of Fig. 1.

Fig. 9 is a bottom plan view of a modified form of club head;

Fig. 10 is a bottom plan view of a modified form of club head;

Fig. 11 is a perspective view on an "iron" golf club head illustrating the present improvements applied thereto;

Fig. 12 is a fragmentary view of the club head illustrating the improved weighting means.

Referring to the drawings, the wooden head 1 of the club has the usual forward driving or striking face 2, opposite rear face 3, toe portion 4, and heel portion 5 from which the integral shank or neck 6 extends. The club shaft 7 is fastened in any desired manner in said neck.

The character of club illustrated is of the "brassie", "spoon", "driver" or similar type, each of which has a conventional broad bottom surface, sole or base 8, which is normally in a substantially horizontal plane so that when the head rests on the ground, the upright forward face 2 will have the correct and intended inclination from the vertical. This base 8, when resting on the ground, gives the proper "lie" to the club, so that in addressing the ball, the club head and shaft will lie in proper position, whereupon the player may close his fingers about the shaft, thereby holding it in proper position throughout the swing. The preservation of this type of base is essential to prevent "rocking" of the head either transversely or longitudinally thereof, when the player is getting the "lie" of the club, by having the shaft handle lay in his open hand.

The essentials of this bottom surface are therefore preserved, and none of their functions sacrificed in the application of the present improvements to the club head.

Upon reference to Fig. 3, it is seen that the bottom surface 8 of the head is made up of a transverse metallic plate 9, preferably of brass, and two diverging metallic wear plates 10 and 11. These plates are countersunk in the head so that their surfaces will be flush with the wooden base surface of the head, as is usual in club construction.

The metallic plate 9 extending across the forward edge of the base, has a width about equal to that of the width of the base of an "iron" golf club head. This may be said to be approximately five-eighths of an inch, but its dimensions may obviously be varied. It is well recognized that an "iron" club offers less resistance to the ground than a "wood" club. Accordingly, the present improvements are designed to provide, among others, certain features of an "iron" in a "wood", without sacrificing any advantages of the "wood."

In accomplishing this end, and for other functional reasons hereinafter set forth, a depression or recess 12, countersunk from the normal base surface of the head, is provided. As illustrated, this depression may also be aptly termed,

a valley, furrow, void, channel or cavity, its nomenclature being unimportant. This depression 12, preferably originates in the rear face 3, and in the plate 9, about three-eighths of an inch from the forward face 2 of the club head. It is preferably elongated, and disposed in a manner so as to be concentric or aligned with the arc which the club head describes as it is swung by the shaft 7 by the player. Its axis should preferably be normal to the shaft, which is the radius of the arc.

The forward end of the depression 12 is in, and flush with the surface of plate 9 and from that point it gradually increases in depth as it recedes toward the rear of the club head, whereupon it terminates in the rear face 3 in an arch-like cut out portion. (See Fig. 7.) Its depth at this end may vary from one-quarter to one-half of an inch or more, as desired. Likewise, the depression 12, is graduated in width, being flared from its forward end to the rear end.

As illustrated, the contour of the depression is "streamlined". Its forward tip is rounded out of the plate 9 while the remainder of it is rounded out of the wood base. As seen in Figs. 4 to 7, the depression is deepest along the middle of the head, thence gradually rising toward the wear plates 10 and 11 which are likewise rounded transversely. The plates are flush with the base of the depression, the curvature of the latter being continued in the surfaces of the plates on both sides. A wedge or fan-shaped depression is thereby providing having gradual, "streamline" curves transversely thereof, having a gradual inclination longitudinally thereof, and having gradually diverging side limits defined by the plates 10 and 11. Beginning from a location just to the rear of the forward face 2, the depression starts from the normal base level and extends uninterruptedly through the rear face of the club head, being countersunk within the normal level of the base surface of the head. The present improvements have therefore added nothing to the sole or base of the head which would interfere with its normal "lie", or impair its natural balance.

A club embodying the present improvements is more particularly adapted for use where the ball is lying on the ground or grass, as in a brassie or spoon, but it may be applied to drivers because of the reduction in air resistance afforded during the stroke. Furthermore, the provision of the groove or depression 12 in the base of the driver would increase the use of that club on the fairway, where it is now used very seldom.

In use, the club is placed behind the ball on the fairway, and the normal lower surface of the head, defined by plates 9 to 11 and by chamfered surfaces 15 and 16, gives the club the proper lie and there is no rocking or canting of the club from proper position. In the back swing, down swing and in the follow through, the streamline concavity or depression 12 reduces the resistance of the air to the club head, thereby facilitating the entire stroke. This promotes a smoother swing, and tends to make the club head "ride" on the air, especially where the stroke is executed with great speed and force.

As the end of the down swing is approached, the forward face 2 and brass plate 9 engage the turf and dig into same, removing a portion known as a divot, as the club head flattens out and starts to ascend from the divot hole. During this descent into the turf and ascent from same, the turf offers less resistance to the club head due to the depression in the base thereof. The bottom surface which the ground engages and resists, is reduced to a minimum. An easier travel into and out of the turf is therefore provided. In many instances, the bottom of the club defining the depression may never engage the ground during the stroke.

It is fundamental that as the club head traverses the lowermost arc of the stroke, the head slightly changes position, as though being canted about its own axis. The rear end of the head which is higher than the front face during descent, swings downward as it enters the divot hole and thereafter is lower than the front face during ascent. The rear half of the base therefore actually goes down toward the ground, and by providing the void or cavity 12 at this location, this slight turning of the head is accomplished and facilitated without the ground or turf resisting or interfering with it. Accordingly the rear surface of the base and rear edge thereof, in prior structures, which met resistance from the ground during the aforementioned change of position, no longer is present to be encountered by the turf. The depression is wider as it approaches the rear of the head. This is preferable since the turf resistance to the head increases as the club head goes further into the turf and by increasing the width, the rear end of the head misses or goes over turf that might otherwise be encountered. The head having the streamline contour, therefore goes through the turf with greater ease, and assists the player in "grooving" his swing before and after impact with the ball.

This undulating bottom surface of the head in combination with the narrow plate 9, permits the club to simulate an "iron". Only the plate portion 9 of the base will take the divot, as in the case of an "iron", and the remainder of the base, back of the plate, will offer little resistance. This feature is especially advantageous where the ball has a bad or "cuppy" lie on the fairway, or is in the rough.

As illustrated the wear plates 10 and 11 radiate or diverge from the cross plate 9. This contributes a stream-line effect with the arc of the swing, and protects the base of the head from stones, etc. The plates are rounded or curved transversely to complete the streamline effect and to merge with the depression. It is obvious however, that the plates may be flat, if desired.

A modified form of the improvements is illustrated in Fig. 9. In that view the plate 9A is cut back along its rear edge, being somewhat crescent-shaped. The cavity or depression 12A is the same as that previously described except that no part of it is in the plate 9A. The shallow end of the depression in this form, originates at the rear edge of plate 9A. The wear plates may have the form previously described or they may extend from the diverging edges of the depression to the edges of the base and along the edge of plate 9A, as shown at 10A and 11A.

A further modified form is shown in Fig. 10, wherein the sole plate having the usual outline common in "brassies" and "spoons", is provided with the depression or cavity 12B, which is the same in form, contour and function as that described above. In Fig. 11, an "iron" 19 is shown with a depression 20, countersunk in its base, illustrating one manner of applying the present improvements to "irons", putters, etc.

The wear plates may be dispensed with, while the conventional horn filler 21 may be varied

in shape and composition, or omitted entirely, if desired.

The usual cavity with lead **22** is provided, as illustrated. However, a modified and novel form of lead weighting is illustrated in Fig. 12. In that view, holes **25** and **26** are bored diagonally through the rear face of the club, so that they intersect within the club head, forming an X-shaped channel or passage. If desired, they may converge to form only a V-shaped passage. The lead may then be poured into the passage and when it solidifies, its shape prevents it from coming out or being loosened. This eliminates the necessity of screw-boring the cavities for holding the lead.

This improvement simplifies the application of the lead to the head. Furthermore, it permits the rear end of the depression **12** to be graded to any desired depth, since the rear face may be cut back much deeper than in instances where the conventional form of lead **22** is used. In such cases the proximity of the depression **12**, to the cavity, holding lead **22**, and the very thin wood intervening, might cause the wood at that point to be split or impaired. With the present form of X or V-shaped lead insert **27**, the wood of the rear face is solid between holes **25** and **26**, so that the depression **12** may have any desired depth at the rear. The balance and swing of the club are greatly improved, because of the shape of the lead.

Various other advantages and modifications may occur to those skilled in the art, and may be made without departing from the scope and purview of the improvements.

I claim:

1. A golf club comprising a head having an upstanding front striking face, a base adapted to engage the turf upon addressing the golf ball, said base having a flat forward portion adjacent said striking face, said base having a central portion behind said forward flat portion comprising a cavity countersunk into said base, said cavity originating adjacent said flat front portion and progressively increasing in depth and width from front to rear, and said cavity extending from said forward flat portion to and through the rear edge of the head.

2. In a golf club, a head having a front and rear face, and a sole for engaging the turf, said sole having countersunk therein a centrally disposed cavity having its greatest depth and width in the rear face of said head, said cavity progressively decreasing in depth and width along said sole from the rear face toward the forward portion of the head, the surfaces of said cavity converging toward a common locus flush with the sole and short of the front face.

3. In a golf club, a head having a front and rear face, and a sole for engaging the turf, said sole having countersunk therein a centrally disposed cavity originating in the rear face of said head, said cavity progressively decreasing in depth and width along said sole toward the forward portion of the head, the surfaces of said cavity converging toward a common locus flush with the sole and short of the front face.

4. A golf club comprising a head having a broad base, a flat sole plate across the forward portion of said base, said base having an elongated rounded depression progressively increasing in depth and width from front to rear and extending from the forward portion of said base through the rear of the head, a pair of spaced wear plates countersunk in said base and being flush with the surface of the base, said plates extending along opposite sides of said depression from the forward portion thereof to the rear, adjacent edges of said plates diverging toward the rear of the base and merging with said rounded depression.

JAMES P. GALLAGHER.