Sept. 13, 1927. 1,642,462

W. F. REACH

GOLF CLUB

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Fig. 2.

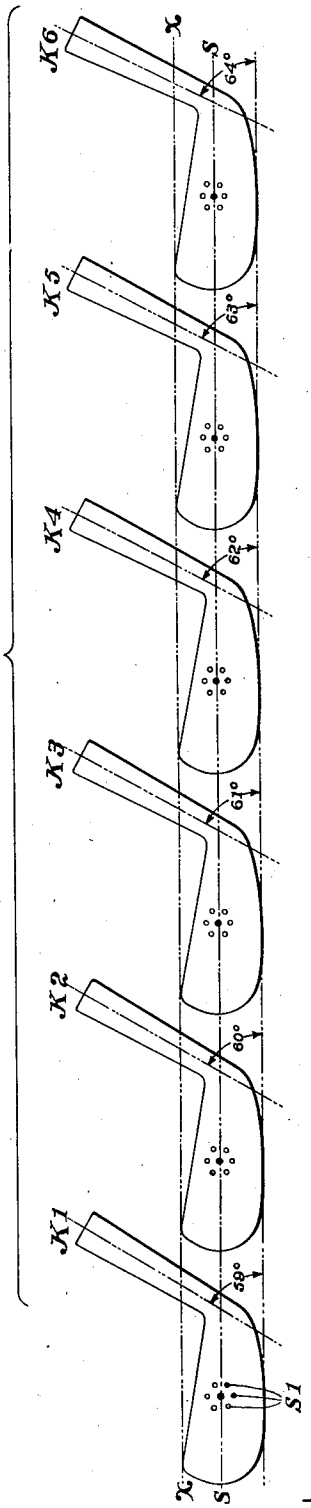


Fig. 3.

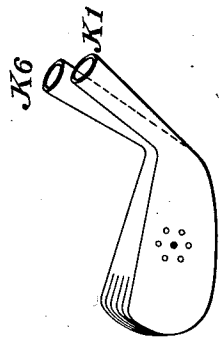
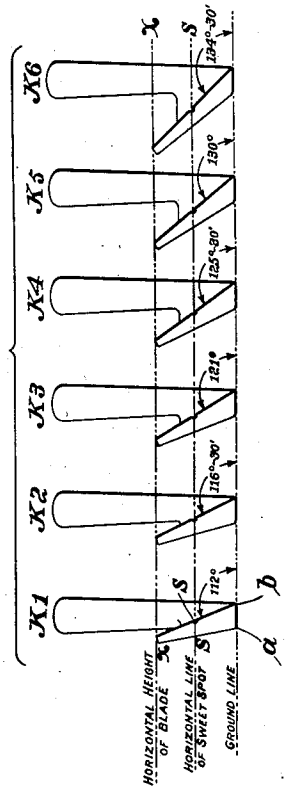


Fig. 1.



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GOLF CLUB.

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The invention in one aspect thereof consists of a series of matched golf clubs whereby a club is provided specially adapted to meet the requirements of each stroke which the player may be called upon to perform in the course of a game, the said clubes having, however, certain like characteristics which are preserved throughout the series, despite their variations in other respects.

The series of clubs is shown in the accompanying drawing in which

Fig. 1 is a view of the series of matched clubs looking from the front, each club being shown as occupying a like position in respect to the ground plane, that is, with its base or lower edge resting flat on said plane.

Fig. 2 shows the same clubs as represented in Fig. 1 but in side elevation.

Fig. 3 shows diagrammatically a set of irons grouped together.

These clubs of Fig. 2 are shown as having the same "lie" in respect to the ground line so that their similar and dissimilar characteristics can be seen by comparison.

As is well known, a golf club head has a point on its striking face at which the most effective impact with the ball takes place. This spot is generally known as the "sweet spot" and if contact with the ball takes place here the most effective drive will be the result as well as the most accurate delivering of the ball.

In practice a player acquires the habit of hitting the ball at a certain part of the striking face of the club and when there is a variation in the location of the sweet spot on the series of clubs used by the player he is unable to get the most effective stroke from his series of clubs. One feature of the present invention is that despite the variations in the clubs of the series as will be presently pointed out, the sweet spot is maintained on all the clubs at the same position relative to the ground plane, and to the length and height of the club head.

Referring to Fig. 1 it will be noticed that the clubs are marked K^1 to K^6. All are shown as having the same "lie" that is with their lower faces or edges resting squarely on the ground and with their hosels, as viewed from the front Fig. 1 lying in a vertical plane. It will be observed that the striking face of the club K^1 is inclined to the horizontal so as to make an angle of 112°, that the striking face of the club K^2 makes an angle of 116° 30′ and that each successive club of the series has its striking face at a greater angle to the ground plane than that of the preceding club, the last club K^6 being inclined 134° 30′ from the horizontal. The increase in pitch of the inclined face between successive clubs is the same number of degrees say 4½ degrees. Each club reaches from the ground plane to the same height measured perpendicularly to said plane. That is to say, with all the clubs having the same "lie" in respect to the ground line, the upper edges of their heads will reach to the same horizontal plane indicated by the line x—x of the drawing. Of course the width of the striking face measured along its incline from the grouid line to the top line x—x will vary in the successive clubs, the width of the striking face of club K^6 being much greater than that of club K^1 but as before stated measured vertically the heights of all the clubs is the same. The sweet spot on the striking face of each club lies in the same horizontal line at s, as shown, so that measured vertically from the ground line the sweet spot will be at the same height from the ground throughout the series of clubs, and on each club this sweet spot will be indicated by a small recess formed in the face of the club. The wall of this recess may be colored red or any other bright color. The sweet spot may have about it a formation indicating its general location and as an example of this I show in the drawings a circle of depressions S^1. Instead of these a groove may be formed in the face of the club enclosing the sweet spot indication and in both cases the surface at the sweet spot is adapted to grip the ball.

It will be observed by a comparison of the clubs represented in Fig. 2 that there is an exact variation in the angle of lie of the club to compensate for the progressive shortening of the shafts from K^1 to K^6. The club K^1 carries the longest shaft and the angle of lie is the lowest, viz, 59° as indicated in Fig. 2. Club K^2 has a slightly shorter shaft hence the angle of lie is increased to 60°. This brings the blade or head of the club a little closer to the player. This variation in the angle of the shafts exists progressively throughout the series, the shaft of K^6 being at an angle of 64° to the horizontal and this being the shortest

shaft, bringing the head which has the greatest lateral inclination the closest to the body of the player.

Another characteristic of the set of clubs is that there is an exact variation progressively of the series in the angle of the nose of the blade or head and also that there is an exact difference in weight between each club and the next in the series. The weights of the club heads increase according to the increase of the lateral inclination of the said heads. For instance, the club K^1 weighs 8 ounces; K^2 8¼ ounces; K^3 8½ ounces; K^4 8¾ ounces and so on, the last club K^6 of the series weighing 9¼ ounces.

This increase in weight from K^1 to K^6 compensates for the shortening of the shafts from K^1 to K^6 so that all the clubs have what may be termed the same "center of swing."

It will be seen from the above that the location of the sweet spot is exactly the same on all the blades irrespective of their relative weights, lengths or widths.

To express the problem involved in another way, it may be said that in practice a player acquires the habit of hitting the ball at a certain part of the face of the club head, and where there is a variation in location of the sweet spot in clubs as ordinarily made the player does not receive the benefit of the full power of the club except where by chance he happens to locate the proper point of impact. In other words, with the ordinary variation between clubs the sweet spot on one would be differently located on the different clubs, in respect to the height, length and width of the striking face thereof, whereas in the present set of matched clubs the sweet spot would be at the same point in respect to the dimensions mentioned and a player will be able to get a stroke of maximum efficiency by making the impact come at the same spot on each of the clubs of the set.

Where in the appended claims I refer to the ground plane, it will be understood that this means the plane in which the lower face of the club head from *a* to *b* lies. This is the edge or face which rests squarly on the ground when the club is set to have the proper lie to the surface of the ground.

It is the experience of the average golfer to find one or two clubs in his set of irons that always seem to feel more comfortable and engender increased confidence in making the shot, with the result that the shot, as a rule, is uniformly better. This is a psychological reaction, it being common experience of golfers that confidence before the shot usually begets a good shot and that the average links normally call for the use of some one or two clubs more frequently than others and that naturally the clubs in which the greatest use prevails as a rule become the clubs with which the player acquires greatest proficiency. One object of this invention is to make a related set of irons which, by virtue of a progressive difference of weights in their relation to a progressive difference of lengths, will produce a feel common to all, to the end that a player, picking up an iron with his eyes shut, would be unable to tell which one of the set he had in his hands.

In other words there is a scientific relationship between the progressive weighing of the head and the progressive shortening of the shaft and in disclosing this feature of the invention I have illustrated a set of six clubs of graduated power wherein each one of the set will be made to feel as near as possible like each of the other clubs of the set.

I claim:

1. A series of golf clubs having the striking faces of their heads relatively increasingly inclined to the ground plane and with the same increment in degrees between successive heads, the heights of said heads measured perpendicularly from the ground plane being the same, and the sweet spot being at the same level on all the heads, substantially as described.

2. A series of golf clubs having the striking faces of their heads relatively increasingly inclined to the ground plane and with the same increment in degrees between successive heads, the height of said heads measured perpendicularly from the ground plane being the same and the sweet spots being at the same level on all the heads, said clubs having shafts progressively shorter and having the angle of lie and the weight of the heads increasing by a regular progression, substantially as described.

In testimony whereof I affix my signature.

WILLIAM F. REACH.