

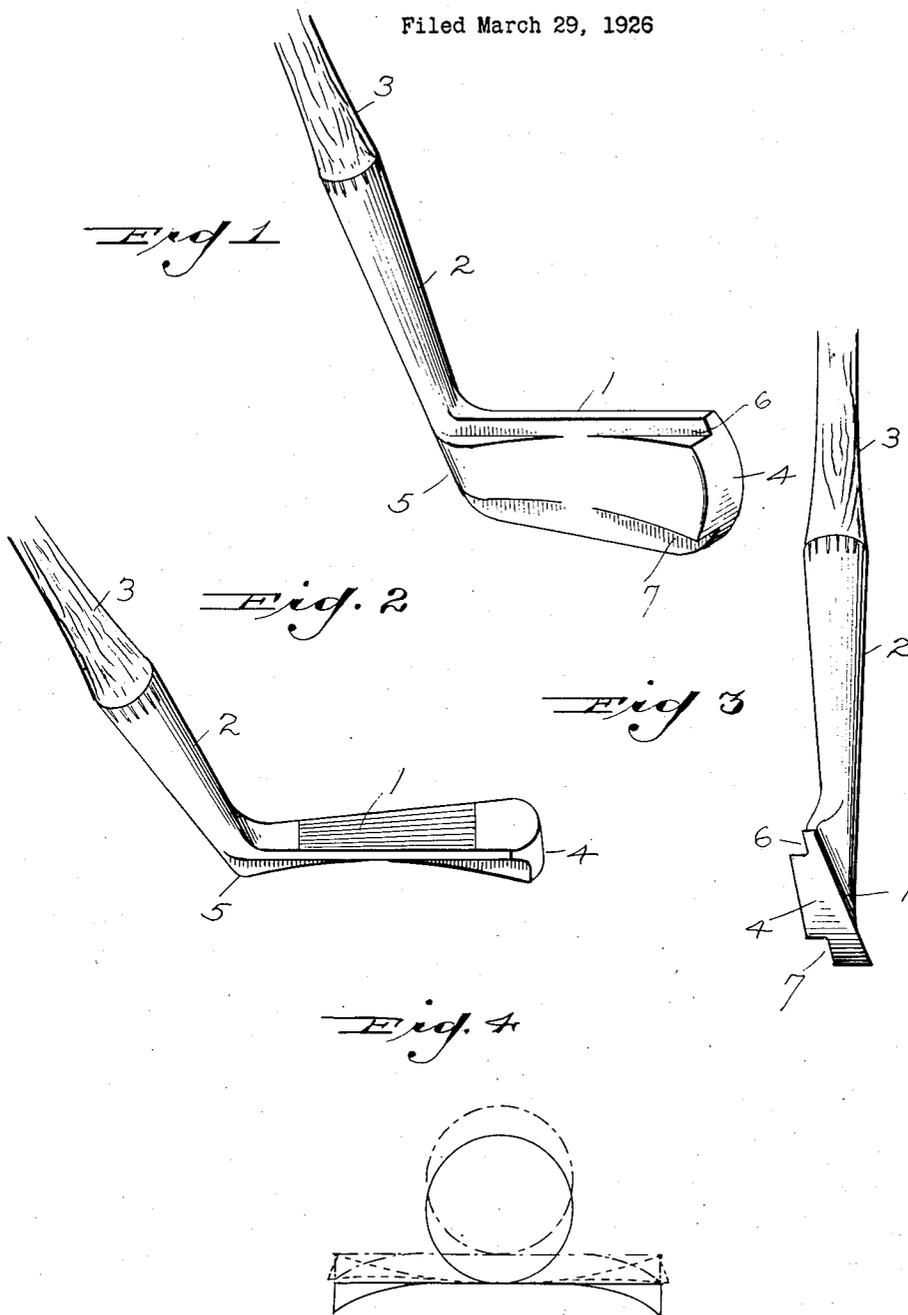
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BALANCED BLADE FOR GOLF CLUBS

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UNITED STATES PATENT OFFICE.

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BALANCED BLADE FOR GOLF CLUBS.

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My invention relates to golf clubs and more particularly to driving irons or distance irons and the like.

The invention pertains to the design and proportion of the blade of such golf club, whereby the mass of material is so distributed that it will react at the moment of impact with the ball when properly played as to afford a long distance flight of the ball of rather low trajectory. This is effected by decreasing the thickness of the blade in the middle and increasing the thickness gradually toward the ends of the blade, so that the preponderance of material is located on opposite sides of the central line of the blade or point of impact. The preferred form of the blade is that of a flat forward or striking face and a concave rear face, although a slight concavity to the forward striking face by which the thickness of the blade is decreased in the middle and increased at the ends may be found advantageous to some players. It has been found by experience and experiment in the use of clubs of the present design, that this unequal distribution of mass or weight in the blade of the club head affords a peculiar characteristic which is essential to long distance flights of the ball. While the club head as constructed is rigid and unyielding, there is nevertheless because of its particular shape a peculiar vibratory reaction at the moment of impact, which is thought to be as though the weighted ends of the club tend to advance beyond the middle or bend around the ball at the moment of impact, and that the blade then instantly straightens by advancing the middle portion into the plane of the advance weighted ends, thus giving to the ball that peculiar sustained impulse, so essential to long flights. This explanation is offered merely as a theory, and is not intended as a limitation, for indeed no such flexibility of the blade is at all perceptible, to the eye, and is more or less assumed from the feel of the club and the characteristic result of the club in play.

The object of the invention is to provide an improved form of golf iron head, which while retaining the standard and legendary shape, size and appearance, will afford improved playing qualities, achieve greater

distance and provide a well balanced club of improved action.

With the above primary and other incidental objects in view as will more fully appear in the specification, the invention consists of the features of construction, the shape, proportions, distribution and arrangement of material, or their equivalents, as hereinafter described and set forth in the claims.

Referring to the accompanying drawings, wherein is shown the preferred, but obviously, not necessarily the only form of embodiment of the invention, Fig. 1 is a perspective view of a driving iron embodying the improvement forming the subject matter hereof, viewed from the rear. Fig. 2 is a top plan view of the head of the club, and Fig. 3 an end elevation thereof. Fig. 4 is a greatly exaggerated diagrammatic view of the reaction of the club head at the moment of impact with the ball.

Like parts are indicated by similar characters of reference throughout the several views.

While the present invention has been illustrated as applying to driving or distance irons, it will be understood that it is not limited to this particular club alone, but is equally applicable to a mashie, cleek, jigger, niblick or other club of like character. The term "driving" or distance iron as herein employed, is therefore, to be considered as including golf clubs of various forms and modifications.

In the drawings, there is illustrated a driving iron of conventional design and proportion, in which 1 is the blade or head, and 2 the hosel, in which is connected the shaft or handle 3.

Whereas the usual club head or blade of this type is provided with a substantially flat rear face, the blade being of substantially uniform thickness on horizontal sections from the heel to the toe, although sometimes converging upwardly or vertically, the present head differs therefrom by being formed concave upon its rear face, while the forward or striking face is preferably though not necessarily substantially flat. In the present construction, the golf club head or blade is made of least thickness at its medial portion, the thickness of

the blade gradually increasing toward both the toe 4 and the heel 5 of the blade or head. The usual construction is to make the toe portion 4 of somewhat greater thickness than the heel portion 5, although this relation may be reversed to accommodate the club to the peculiarities of a particular player. While this tapered or gradual enlargement of the club head from its middle toward its opposite ends, may extend throughout the full height of the head or blade, it is preferred to confine such enlargement to an area somewhat less than the width or height of the blade, thereby forming at the top and bottom of the rear face of the blade, offsets or rabbets 6 and 7. The mass of material of the blade is thus unequally distributed and is formed into oppositely disposed convergent masses, projecting from the rear face of the club on opposite sides of the medial line or point of impact. The weight of the club may be varied by varying the width of the rabbets 6 and 7, thus increasing or decreasing the height of the rearwardly projecting tapered masses of material contiguous to the opposite ends of the head or blade.

By thus distributing the preponderance of weight of the club head, increasing the thickness of the toe and heel of the club and forming the intermediate portion of less thickness than such heel and toe, remarkable distance and accuracy in the flight of the driven ball has been achieved. This is attributed, whether correctly or incorrectly, to the resultant vibratory action at the moment of impact due to the peculiar shape and distribution of material and weight as before described.

It being understood that the principle or theory of operation is unnecessary, and that explanation of the principle need not even be understood, by the inventor, so long as the structural features of the club are sufficiently described to enable others to successfully construct the club, the theory of vibratory reaction has been illustrated in Fig. 4 on a grossly exaggerated scale. In Fig. 4, the normal portion of the blade is diagrammatically shown at the moment of impact by solid lines. The thin middle portion is retarded by its contact with the ball and the weighted ends advance to the dotted line positions. The tendency of the blade to reassume its normal shape causes the middle portion to spring forward into line with the weighted ends as shown by dot and dash lines. This imparts additional impetus to the ball by which greater distance flight is achieved.

From the above description it will be apparent that there is thus provided a device of the character described, possessing the particular features of advantage before enumerated as desirable, but which obvious-

ly is susceptible of modification in its form, proportions, detail construction and arrangement of parts without departing from the principle involved or sacrificing any of its advantages.

While in order to comply with the statute the invention has been described in language more or less specific as to structural features, it is to be understood that the invention is not limited to the specific details shown, but that the means herein disclosed comprise the preferred form of several modes of putting the invention into effect, and the invention is, therefore, claimed in any of its forms or modifications within the legitimate and valid scope of the appended claims.

Having thus described my invention, I claim:

1. In a golf club, a driving iron or the like, including an integral solid metallic blade, having a substantially flat striking face and a horizontally arcuate concave rear face.

2. In a golf club, a driving iron or the like, including a blade and integral tapered weight portions located on the rear face of the blade in spaced relation on opposite sides of the center of impact and tapering toward such center and also spaced from the top and sole margins of the blade.

3. In a golf club, a driving iron or the like, including a blade, and a rib on the rear face of the club spaced away from the top and sole margins, the rib being medially indented.

4. In a golf club, a driving iron or the like, including a blade and two oppositely disposed convergent masses of material projecting from the rear face of the blade in substantially mid height positions.

5. In a golf club, a driving iron or the like, including a blade, the material of which is unevenly distributed, the blade being thinnest substantially upon a vertical medial line, the mass of material being of gradually increasing thickness from the middle toward the ends with the preponderance of material located on opposite sides of the point of impact.

6. In a golf club, a driving iron or the like, including a blade, of substantially uniformly graduated varying thickness being thickest at its toe, thinnest at its middle the heel being of greater thickness than the middle of the blade, but of less thickness than the toe thereof.

7. In a golf club, a driving iron or the like, including a blade, the toe portion of which is thicker than the heel portion and both toe and heel portions thicker than the middle portion the intermediate portion being substantially uniformly reversely tapered.

8. A head for a golf driving iron, or the

like, including an integral solid metallic blade, the rear face of which is reversely tapered inwardly toward the vertical medial line thereof, the outer ends of the tapered 5 surfaces terminating abruptly substantially coincident with the opposite ends of the blade.

9. A head for a golf driving iron, or the like, including an integral solid metal blade 10 having on opposite sides of its medial line two unequal rearwardly projecting masses of material gradually merging one toward the other into the body of the blade.

10. A head for a golf driving iron, or the like, including an integral solid metallic 15 blade of plano concave form, the driving face of which is substantially flat while the rear face thereof is indented upon a transversely disposed segmental curve extending substantially from the toe to the heel of the 20 blade and approaching the flat driving face upon a medial vertical line.

In testimony whereof, I have hereunto set my hand this 10 day of March A. D. 1926.

WILLIAM B. SIME.