

[54] SET OF GOLF IRONS

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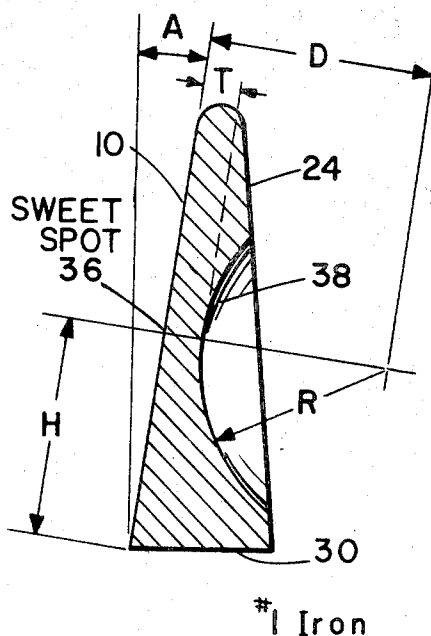
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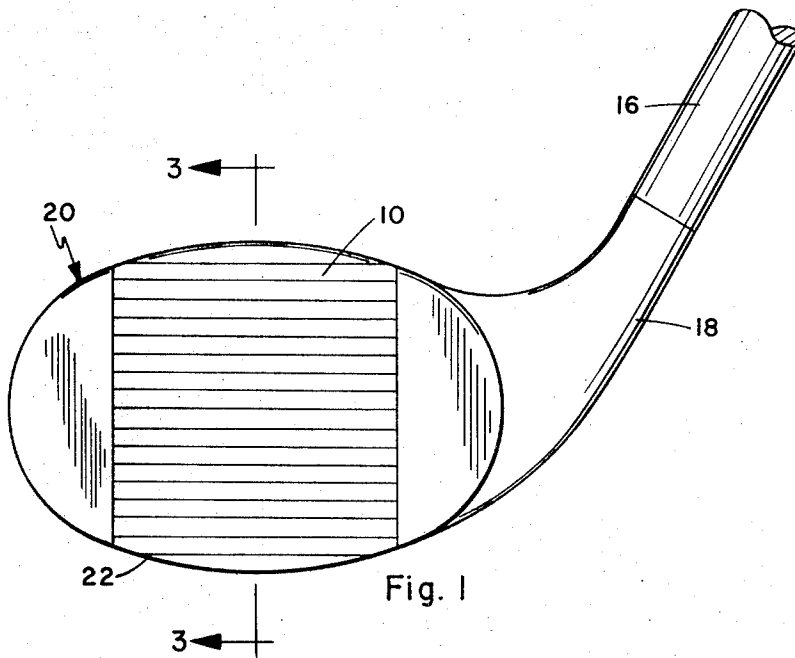
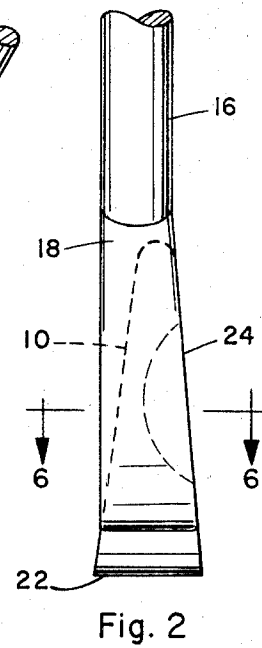
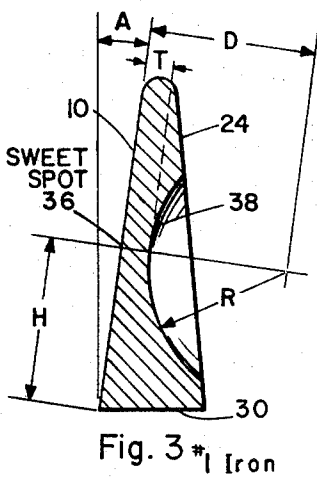
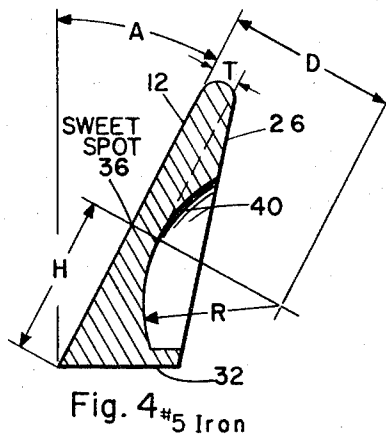
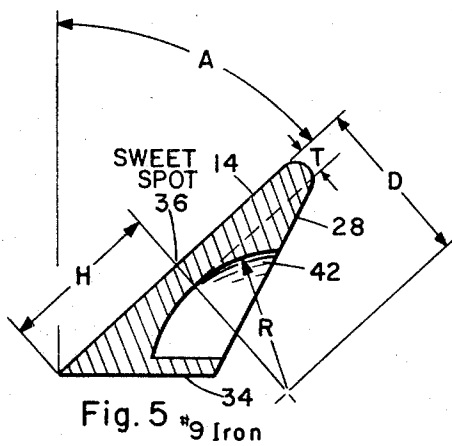
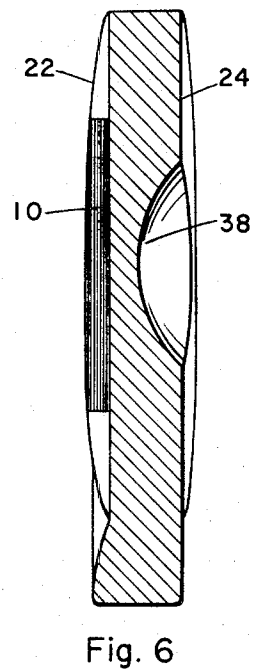
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[57] ABSTRACT

A set of golf club irons with heads having graduated loft angles, the striking faces being of the same size and elliptical shape so that the club head is balanced both vertically and horizontally about the center of the elliptical driving face, with a downwardly curved lower front edge to minimize the divot, and a recess in the rear face creates a sweet spot at the center of the striking face and a uniform distance from the lower front edge throughout the set of irons, the minimum thickness of metal at the sweet spot being also uniform throughout the set of irons since the recess is a spherical segment, above the sole of the head, having a constant radius with a center on a line through the center of the driving face and normal to the plane of the driving face. The psychological advantage in locating the sweet spot identically in identical driving faces is obvious since the user can more easily learn to use all the clubs of the set with heightened efficiency.

6 Claims, 6 Drawing Figures





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SET OF GOLF IRONS

BACKGROUND OF THE INVENTION

Many prior art irons have been developed showing, more or less incidentally and without correlation, some of the features of my club construction. For example, some prior art clubs have such independent features as downwardly curved edges and recessed rear faces, although not co-ordinated functionally or even structurally. In other words, the user of prior art clubs, even with beautifully "matched" sets including wedges, putters and other clubs, frequently had difficulty in recognizing the exact spot in the heads which should strike the ball party due to the fact that the heads or striking faces of the heads were not symmetrical about any such easily recognized control point. Furthermore many irons tended to twist even when virtually properly stroked because of imbalance.

SUMMARY OF THE INVENTION

As claimed, these clubs are the irons in a set of irons, ordinarily numbered one to nine, and the heads all have the same size and elliptical shape, each iron has a sole in the rear face of the irons is a recess having the shape of a segment of a sphere, the center of the sphere being about 1.18 inches to the rear of the driving face on a line through the center of the front face, perpendicular thereto, and the radius is on the order of one inch so that the minimum head thickness at the resulting sweet spot is about 0.18 inches, this thickness being constant throughout the set. Since the striking face is elliptical the lower front edge takes a minimum divot with minimum twisting moment, this feature being heightened by the symmetry of the club about the sweet spot.

DESCRIPTION OF THE DRAWINGS

FIG. 1 is a front face view of an iron fashioned according to this invention, the head and hosel being shown full size and the shaft being fragmentarily shown;

FIG. 2 is a side elevation view as taken from the right side of FIG. 1;

FIG. 3 is a sectional view taken on line 3—3 of FIG. 1;

FIG. 4 is a similar sectional view of an iron with a greater loft angle;

FIG. 5 is a similar sectional view of an iron with a still greater loft angle;

FIG. 6 is a sectional view taken on line 6—6 of FIG. 2.

DETAILED DESCRIPTION OF A PREFERRED EMBODIMENT

In the drawing three irons of different loft angles are proposed as representative of a complete set of irons, ordinarily numbered 1 to 9 and variously named. The loft angles are indicated at A as the difference between the vertical and the driving faces 10, 12 and 14, respectively, of the number 1 iron of FIGS. 1, 2, 3, and 6, the number 5 iron represented in FIG. 4 and the number 9 iron represented in FIG. 5.

Each iron will have a shaft, fragmentarily indicated at 16, a hosel 18 and the head which is shown in detail and generally indicated by the numeral 20 in FIG. 1. It is preferred that the hosel 18 should emerge from head 20 initially in the general direction of the major axis of the ellipse defined by the striking face of the club and

then curve upwardly to the shaft 16. The elliptical shape of the striking faces is important, for balance both vertically and horizontally is at least optically evidenced thereby and the user of the clubs is psychologically benefited and assured by the uniformity in shape and size of the striking faces, the most obvious portions of the club heads. Two additional assets also may be mentioned, namely, the elliptical shape provides a nearly optimum striking area and the curved lower front edge 22 takes a minimum divot. The striking face proper may of course be striated as at 24 or otherwise treated in accordance with USGA rules.

The head 20 is generally triangular in vertical cross-section and the rear faces 24, 26 and 28 are inclined away from the striking faces so that soles 30, 32 and 34 of graduated, horizontal length are generated, these soles being substantially horizontal as indicated. In the irons with greater loft the soles become curved plates as indicated at 32 and 34 of approximately one-eighth inch thickness, the curvature of course generally following the curvature of the corresponding portion of said forward lower edge 22 of the elliptical striking face.

A sweet spot 36 of minimum head thickness is provided by forming a recess as shown at 38, 40 and 42 above the sole 30, 32 and 34, respectively, this recess being a segment of a sphere and the spherical radius R is a constant on the order of one inch throughout the set of irons. The center of curvature for said recess is located at a distance D to the rear of the striking faces 10, 12, and 14, measured on a line through the sweet spot 36 perpendicular to the striking face. The distance D is on the order of 1.18 inches in each iron so that the minimum thickness T of the head at the sweet spot 36 is a uniform thickness on the order of 0.18 inch. The distance H from the sweet spot to the lower front edge is uniform throughout the set and is on the order of 1.12 inches.

Although rather specific dimensions have been set forth above these measurements should be considered in the context of the important features of uniformity in size and shape of the driving face, uniformity or standardization of the sweet spot structure and location thereof in reference to the standardized driving face and a balancing of the driving face both vertically and horizontally about the sweet spot as center.

I claim, as my invention:

1. A set of golf irons, comprising:

a plurality of irons, each iron having a head with a different loft angle wherein said loft angle progressively increases from the lowest numbered iron to the highest numbered iron and each head having a front striking face, a rear face and a lower front leading edge;

the striking faces of the different irons being the same size and shape;

and the rear face of each iron in said set having therein a recess in the shape of a spherical segment providing a minimum head thickness uniform throughout said set and a sweet spot at a uniform distance from the lower front edge throughout the set.

2. A set of golf irons according to claim 1 wherein said striking faces are elliptical so that each lower front edge is downwardly curved to minimize the divot taken by the club in use with the sweet spot at the center of

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the ellipse so that the striking face is symmetrical both vertically and horizontally about said sweet spot.

3. A set of golf irons according to claim 1 wherein said distance from the lower front edge is on the order of 1.12 inches.

4. A set of golf irons according to claim 1 wherein each of said heads has a sole and said recess is above said sole and each sphere of which said recess is a segment has a radius constant throughout the set, the center of which sphere is on a line perpendicular to said striking face through the sweet spot of said striking face.

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5. A set of golf irons according to claim 4 wherein said radius is on the order of 1.00 inch and the head thickness at said sweet spot is on the order of 0.18 inches.

5 6. A set of golf irons according to claim 1 wherein each iron has a sole, the rearward portion of said sole beneath said recess is, in the irons of the set having high loft angles, a plate on the order of 0.125 inch thick curved in conformity with the corresponding portion of the elliptical lower front edge of the striking face.

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