July 10, 1962 M. H. EHMKE 3,043,596

GOLF CLUB HEAD

Filed Nov. 25, 1957 2 Sheets-Sheet 1

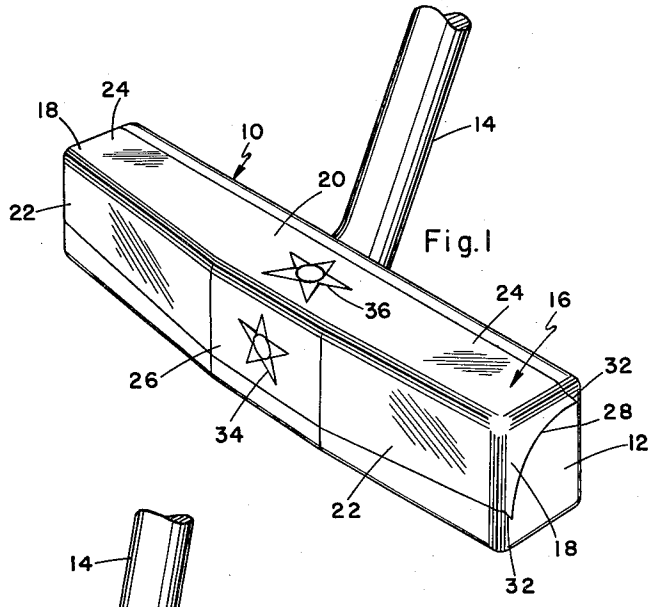


Fig. 1

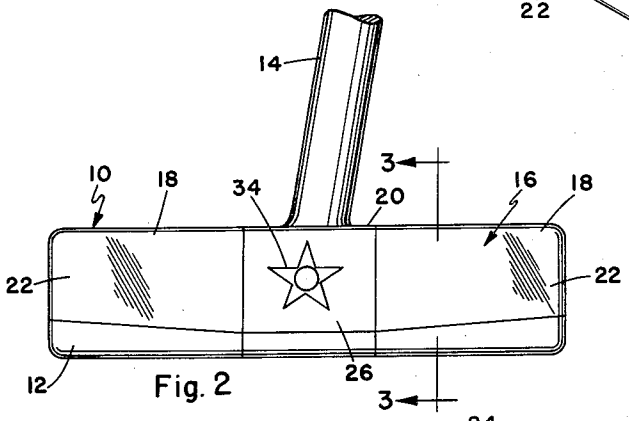


Fig. 2

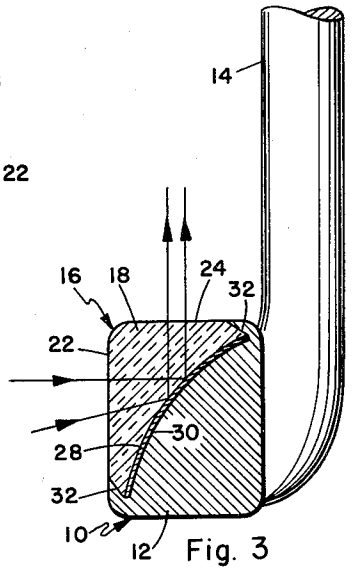


Fig. 3

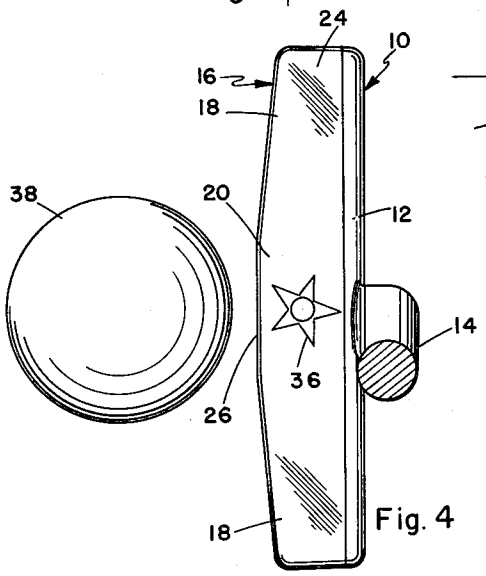


Fig. 4

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GOLF CLUB HEAD

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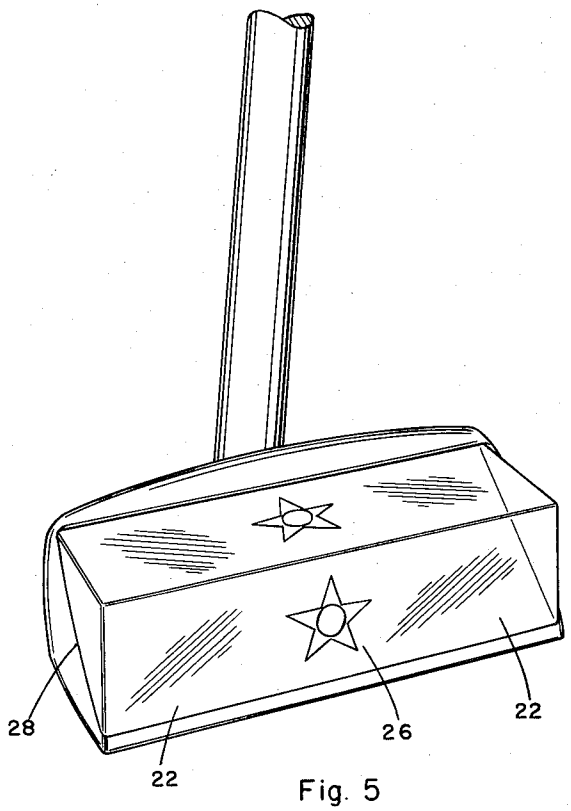


Fig. 5

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GOLF CLUB HEAD

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The present invention relates generally to sporting equipment and more particularly to a golf club head, specifically a putter.

The primary object of this invention is to provide a golf club head having a reflector therein to enable a player to align the club with the ball and cup for a perfect shot, as in putting, the reflector being incorporated entirely into a putter head, the head being shaped to reflect images of the cups and/or flags upwardly to the eyes of the player as he addresses the ball even though the ball is in playing position immediately in front of the club head and even though the head is of only small vertical dimension as in the currently preferred style of putters.

Another object of this invention is to provide a golf club head in which the reflector comprises a prism or prisms inset into the head in such manner that manufacture is simplified by having a part of one face of the prism structure function as the striking face.

Another object of this invention is to provide a golf club head in which the reflector extends substantially the full length of the head so as to extend beyond the ball on both sides thereof, preferably angulated with respect to a central part, to give an ample reflected image of the cup so that the golfer can quickly and easily pick up this image.

A further object of this invention is to provide a golf club head in which the reflector has indicia thereon to facilitate attainment of proper address, these indicia being arranged in a unique manner.

Still another object of this invention is to provide a golf club head having a convex surfaced reflector which gives an amplified field of view and thus simplifies the initial positioning of the club.

Another object of this invention is to provide a golf club head which is adapted for fabrication from many different materials, so that the choice of material can be according to the dictates of availability and price considerations, the exact sizes and proportions being matters easily determined to suit particular conditions and needs.

Another object of this invention is to provide a golf club head which is practicable and inexpensive to manufacture.

Finally, it is an object to provide a golf club head which is simple and convenient to use and which will give generally efficient and durable service.

With these and other objects definitely in view, this invention consists in the novel construction, combination and arrangement of elements and portions, which will be hereinafter fully described in the specification, particularly pointed out in the claims, and illustrated in the drawing which forms a material part of this disclosure, and in which:

FIGURE 1 is a perspective view of the golf club head;

FIGURE 2 is a front elevation view thereof;

FIGURE 3 is a slightly enlarged sectional view taken on the line 3—3 of FIGURE 2;

FIGURE 4 is a top plan view of the head with a golf ball shown in playing position; and

FIGURE 5 is a view, in perspective, showing a slightly modified form of the invention.

Similar characters of reference indicate similar or identical elements and portions throughout the specification and throughout the views of the drawing.

Referring now to the drawing in detail, the golf club head 10 comprises a head block 12 of wood, metal, plastic,

glass or some other suitable material, to which is fixed a conventional handle 14, shown fragmentarily. For simplicity the head is illustrated as a simple rectangular element, but it should be understood that various shapes may be employed and the handle may be attached in any suitable manner or position. Inset into the head block 12 is prism structure 16 comprising a pair of transparent prisms 18 disposed at each end of the head block and connected by a central prism 20. The simplest cross-sectional shape for these prisms is triangular but the slightly modified triangular form shown is preferred. For simplicity of manufacture and assembly, the prisms 18 and central prism 20 are preferably made from a unitary piece of material such as glass or plastic, although the vertical front face of the prism 20, which will hereinafter be referred to as the striking face 26, may be a separate element and of different material if desired, or may even be unitary with the head block 10.

Each prism 18 has generally flat, vertical front faces 22 and a flat top face 24 substantially normal to each other, said front faces being disposed at acute angles to the striking face 26. The striking face, but not the vertical front faces 22, will ordinarly be patterned to some extent and may present a knurled, striated or pebble surface, and when the prism 20 is unitary with the prisms 18, this surfacing may be accomplished by sandblasting at least a portion of the striking face 26. As stated, the prisms 18 and 20 are substantially triangular in cross section and the surface 28 of each, generally diagonally disposed with reference to the head block 10, is preferably concave. Total reflection may be relied upon, but it is preferred that said concave surface will be silvered, aluminized, or otherwise treated to provide a forwardly convex mirror surface 30 as illustrated in FIGURE 3. The head block 12 is recessed to receive the prism or prisms snugly and to hold the prisms in place. The edges 32 of the prisms at the intersection of the faces 22 and 24 with the concave surface 28, are bevelled. The opposed faces of the bevelled edges 32 diverge slightly so that the prisms are keyed in place in the manner of a dovetail joint. The prisms, whether unitary with each other or separate, may be secured in place by a suitable adhesive, thus making the complete head an integral structure and eliminating the need for screws or other fastening devices.

The striking face 26 is normally largely hidden by the ball, but the prisms 18 with the corresponding mirror surfaces 30 pick up the cup and/or flag pole and reflect the image thereof upwardly as indicated in FIGURE 3. The front faces 22 of the prisms 18 are vertical and inclined rearwardly toward the outer ends thereof. This inclination of the prisms 18 results in the rays of light from the cup or flag to the two prisms 18 being somewhat converged, and the player simply adjusts the club head to the position wherein the cup or flag is identically imaged in the prisms 18. The striking face 26 is then accurately disposed normal to a line leading from the cup to the center of the striking face 26.

For further guiding the player in properly addressing the ball, the striking face 26, or one of the front faces 22 of the prisms 18, is provided with indicia such as that shown at 34. Further indicia 36 is provided on the top face of the corresponding prisms and the two indicia have a definite easily recognizable dimensional and/or configurative relationship as well as being positioned symmetrically of a single vertical plane extending transversely of the head 10, when the striking face is vertical or in the designed playing position. The image of the indicia 34 is imposed on the indicia 36 when the player's eyes are vertically above the club head and the club head properly positioned.

To use the device the player addresses the ball in his

accustomed manner and the head **10** is placed adjacent the ball **38** so that the striking face **26** is almost touching the ball, the head **10** being usually rested lightly on the ground for stability. The player first positions the club head so that the reflected images of the cup to be played as reflected by the prisms **18** are identical as seen from above. Since the mirror surface **30** is convex, the image, although sufficiently sharp, will pick up the flag, for example, and the head **10** need not be turned excessively to locate the image of the cup or the bottom end of the flag pole held at the cup. Most golfers prefer to have the club head directly vertically beneath the eyes and this positioning is quickly and easily assured by securing visual registration of the indicia **36** with the reflection of the indicia **34**. The golfer will then either maintain this position or use this knowledge as a reference to guide him in assuming a slightly different preferred position. Thus, with a proper stroke, the ball can be propelled in the desired direction accurately and, with increased confidence thereby engendered, muscular overtension is easier to avoid and the player's game is improved. If the player desires to play to the high side of the cup, he will position the head **10** so that the images reflected by the prisms **18** are correspondingly shifted. Other indicia may be added to the prisms to guide such calculated abberation from straight line putting. It is also recognized that the slope of the green or irregularities therein may have to be allowed for in some instances but this does not detract from the general utility of the present invention. The utility of this precision putter head as an instruction device is obvious but it is proposed that the invention is applicable to putters for regular and even professional play.

The operation of this invention will be clearly comprehended from a consideration of the foregoing description of the mechanical details thereof, taken in connection with the drawing and the above recited objects. It will be obvious that all said objects are amply achieved by this invention and it will now be clear how this invention accomplishes incorporation of reflector means in a golf head of even reduced vertical dimension.

It is understood that minor variation from the form of the invention disclosed herein may be made without departure from the spirit and scope of the invention, and that the specification and drawing are to be considered as merely illustrative rather than limiting. For example, the club head may be formed with the faces **22** and **26** substantially coplanar and flat and may, if desired, be tilted slightly from the vertical. As a further example, the surface **28** may be flat rather than concave in one direction, all as illustrated in FIGURE 5.

I claim:

1. A golf club head including a reflector having a reflective surface disposed internally of the head and inclined for upward reflection of an image of the green in front of the club head, said reflector having three principal faces, a substantially vertical ball striking face, a substantially horizontal top face and a third face constituting said reflective surface, said reflector being an integral unit and fixed in operative position in said head with said reflective surface disposed at the level of and laterally of said striking face, and said horizontal top face constituting the top surface of the golf club head.

2. A golf club head according to claim 1 wherein said reflector has a front face and said ball striking face constitutes only a portion of said front face, said front face having other portions thereof extending laterally of said ball striking face.

3. A golf club head according to claim 2 and wherein said other portions are disposed horizontally laterally of the striking face.

4. A golf club head according to claim 2 wherein said other portions are disposed at an acute angle to said striking face.

5. A golf club head, comprising: a head block for attachment to a handle; a unitary prism inset in and integral with said head block; said prism extending substantially the full length of said head block and having a front face which includes a striking face and a transparent portion at each end thereof; said prism having a top face substantially normal to said striking face; each of said portions having an inner reflecting surface disposed substantially obiquely relative to said striking face; said top face having indicia thereon; said front face having further indicia thereon disposed to be reflected by said reflecting surface in an easily recognized relationship to the first mentioned indicia when the club head is viewed from above.

6. A golf club head according to claim 5 and wherein said reflecting surface is convex upwardly and forwardly of the club head.

7. A golf club head having a striking face, and a reflector having a reflective surface disposed internally of the head and disposed operatively and fixedly behind and laterally of and at the level of said striking face for upward reflection of an image of the green in front of the club head, said head including a body of transparent solid material, said striking face being a substantially vertical front face of said body, said body having an inclined rear face and said reflective surface being at said inclined rear face, and the top of said body constituting the top surface of the golf club head.

8. A golf club head having a striking face, and a reflector having a reflective surface disposed internally of the head and disposed operatively and fixedly behind and laterally of and at the level of said striking face for upward reflection of an image of the green in front of the club head, said head including a solid prism of transparent material, said prism having a substantially vertical front face constituting said striking face and an inclined rear face comprising said reflector.

9. A precision putter for putting a golf ball toward the target area at or on the high side of the pin on a putting green, said putter comprising: a putter head having a striking face on the front thereof; a reflector fixed in said head horizontally behind said striking face and having a reflective surface disposed internally of the putter head in fixed relation to said striking face and at the level of and horizontally behind and laterally of said striking face; that portion of the head between said striking face and said reflector being transparent and said reflector being disposed to reflect an image of the pin on the putting green generally toward the eyes of a player, said image appearing adjacent to the rear side of the ball and at the level of the ball; and means in said head to establish an arbitrary, fixed reference line of sight in a plane normal to said striking face and including the initial portion of the proposed path of the putted ball.

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