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Sebo et al.

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[54] **PUTTER-TYPE GOLF CLUB**

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[52] **U.S. Cl.**..... **273/163 R,** 273/80.2, 273/167 R, 273/169

[51] **Int. Cl.**..... **A63b 53/04**

[58] **Field of Search**..... 273/77 R, 78, 163 R, 164, 273/167–175, 183 D, 193 R, 194 R, 80.2–80.8

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[57] **ABSTRACT**

A golf club designed for putting, comprising a club head formed of a light-transmitting material and having at least one and preferably three metallic weight members, preferably elongate, disposed transversely to the longitudinal axis of the club head. The weight members are preferably in the form of cylinders whose axis is positioned along a line perpendicular to the striking face of the club head, in the direction in which the club head will move and in the direction the ball normally should proceed. The centrally located weight member is positioned so that its axis is coincident with the "sweet point" or percussive point of the club, that is, the point at which the ball is most effectively struck. The outwardly disposed weight members are preferably so positioned that the moments of inertia of the club about the point at which the ball is struck are substantially the same. The weight members are clearly visible to the golfer through the club and he can readily determine at what point to strike the ball, and additionally can utilize the outline of the centrally located weight member for sighting the club with the ball and the hole.

10 Claims, 9 Drawing Figures

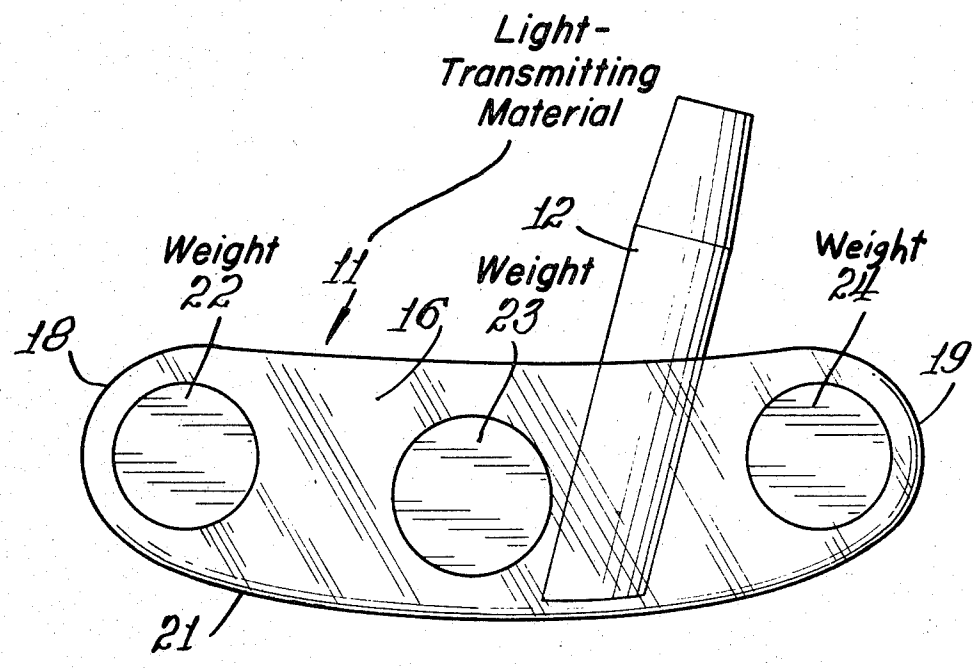


Fig. 1.

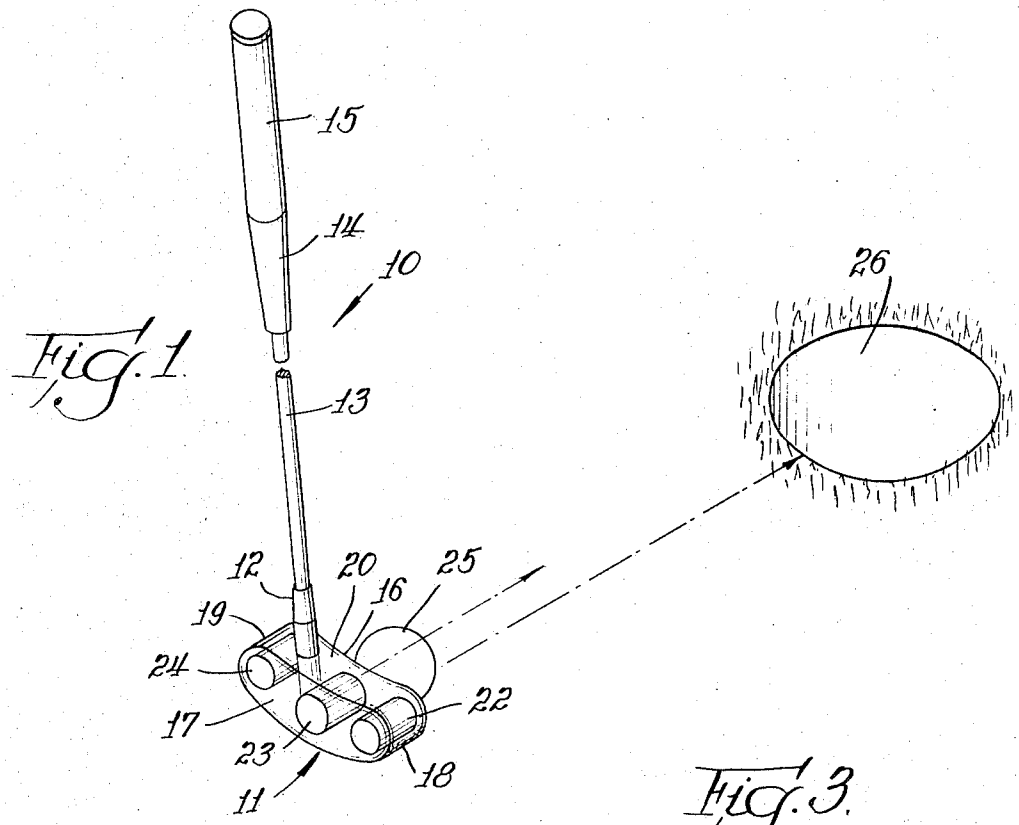


Fig. 2.

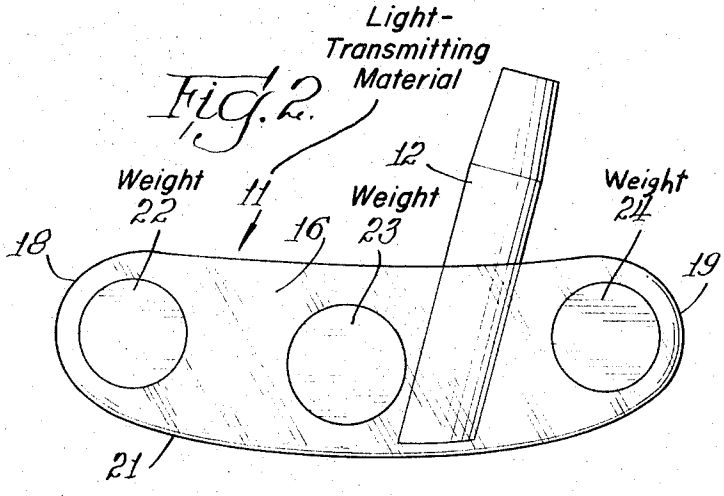


Fig. 3.

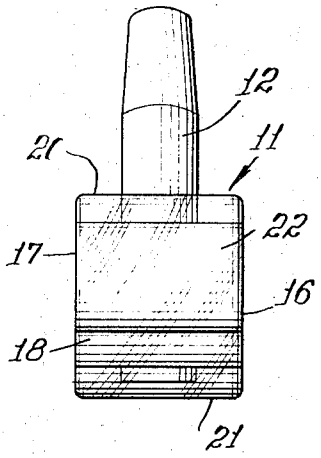


Fig. 4.

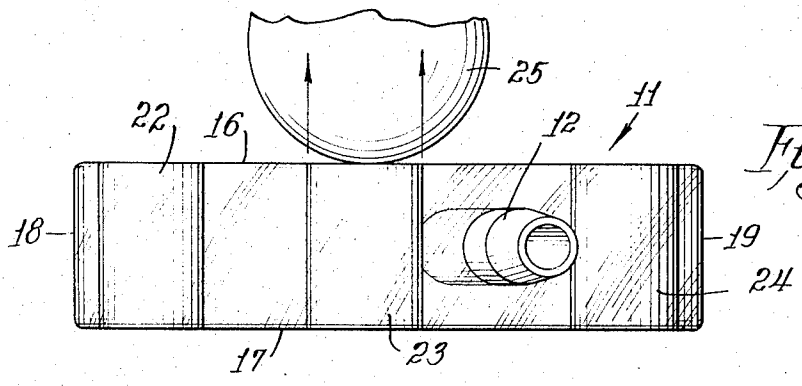


Fig. 5.

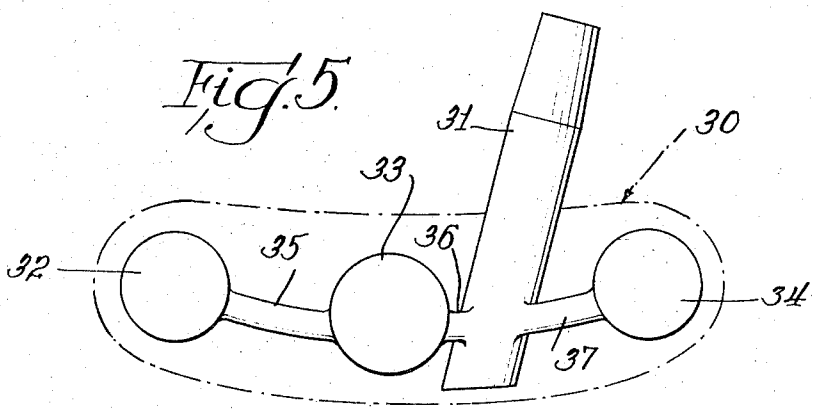


Fig. 6.

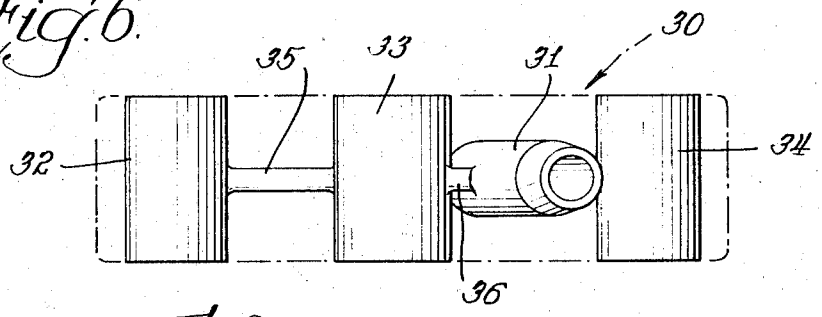


Fig. 8.

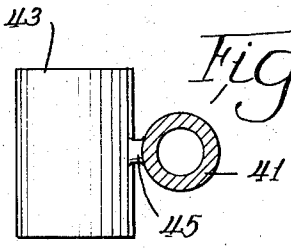


Fig. 7.

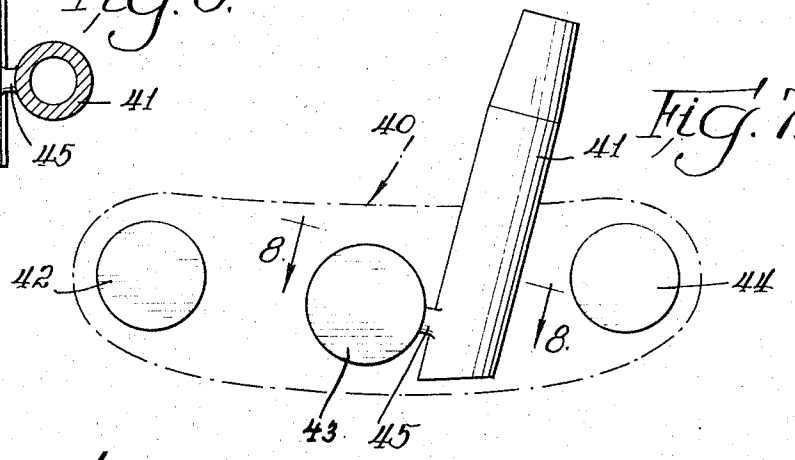
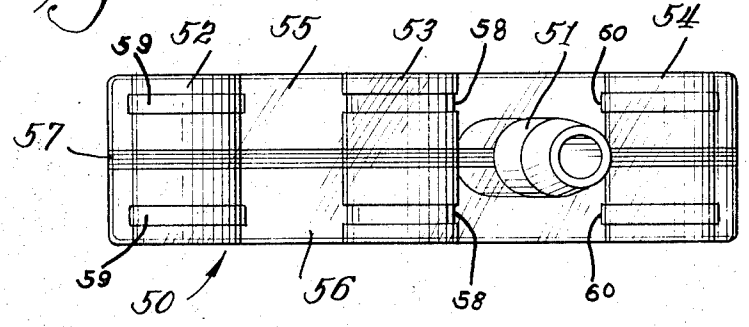


Fig. 9.



PUTTER-TYPE GOLF CLUB

BACKGROUND OF THE INVENTION

The present invention deals broadly with golf clubs and more particularly refers to a golf club utilized for putting on a putting green.

The various designs for putters disclosed in the art are almost as numerous as the number of golfers using them. Designs for putters have taken many turns, with the result that some putters are almost unrecognizable as such. Some golfers seek a putter which is perfectly balanced to their demands. Others seek putters which are simple to sight and line up with the hole toward which the ball is to be propelled. Still other golfers are more concerned with aesthetic appearance of the putter than with effectiveness. It can be stated without risk of contradiction that the ideal putter has still not been developed.

SUMMARY OF THE INVENTION

It is an object of the present invention to provide a putter type of golf club which is well balanced.

It is a further object to provide a putter having a high moment of inertia about its balance point, percussive point, or sweet point so that even if the golf ball is not struck at the exact balance point of the club, the club will not twist by an appreciable amount as the ball is struck.

It is a further object to provide a putter having indicia provided, whereby the player may accurately judge the proper point on the club with which to hit the golf ball.

It is still further an object to provide a putter so designed that the player can readily judge the precise direction to which the striking face of the club is perpendicular and to indicate in which direction the golf ball will travel.

It is an additional object to provide a putter of the type described which can be readily and relatively inexpensively manufactured and assembled, and which has a desirable aesthetic appearance.

Still further objects and advantages of the invention will appear as the description proceeds.

To the accomplishment of the foregoing and related ends, the invention, then, consists of the useful putter-type golf club herein fully described and particularly pointed out in the claims, the annexed drawings, and the following description setting forth in detail certain illustrative embodiments of the invention, such disclosed embodiments illustrating, however, but several of the various ways in which the principle of the invention may be used.

BRIEF DESCRIPTION OF THE DRAWINGS

In the annexed drawings:

FIG. 1 is a perspective view of a putter according to the invention shown in conjunction with a golf ball and an enlarged green cup.

FIG. 2 is a side elevational view of the club head of the putter.

FIG. 3 is a front end view of the club head.

FIG. 4 is a top view of the club head shown in conjunction with a golf ball, and illustrating its use as a left-handed putter.

FIG. 5 is a side elevational view of another embodiment of the invention.

FIG. 6 is a top view of the embodiment illustrated in FIG. 5.

FIG. 7 is a side elevational view of a putter showing still another embodiment of the invention.

FIG. 8 is a fragmentary cross-sectional view taken at the line 8—8 of FIG. 7; and

FIG. 9 is a side elevational view of a putter constituting a further embodiment of the invention.

DESCRIPTION OF THE SPECIFIC EMBODIMENTS

As understood in the prior art, the term "putter" is defined as a golf club with a short shaft and almost perpendicular face that is used in putting. That is, a putter has a striking face with a loft angle specifically designed for use on putting greens of a golf course.

Referring more particularly to FIGS. 1-4, a putter **10** is shown comprising a club head **11**, a ferrule or socket **12** affixed therein and having an axial channel, and a shaft **13** affixed within the axial channel of the ferrule **12**. A handle **14** is mounted on the shaft **13** and is provided with a conventional grip **15** of leather, rubber, or plastic material. The club head **11** has striking faces **16** and **17** for both right-handed and left-handed golfers. The club head **11** also has a toe **18**, heel **19**, top surface **20** and bottom surface **21**. As shown in the drawings, the club head **11** is elongated and is symmetrically formed about a longitudinal axis. As is evident, the striking faces **16** and **17** extend in a direction parallel to the longitudinal axis of the club head **11**.

The club head may be produced of any suitable light-transmitting material and preferably transparent plastic material such as Lucite or Plexiglas (methylmethacrylate), polystyrene, polycarbonate, polypropylene, polyurethane, and many other suitable plastic materials.

Embedded within the club head are a toe-positioned weight member **22**, a central weight member **23**, and a heel-positioned weight member **24**. The weight members are preferably formed of a heavy material, preferably a metal such as brass, steel, stainless steel, bronze, or any other suitable metal. The weight members **22–24** are shown in their preferred form as cylinders, although other suitable forms such as rectangles, polygons, et cetera, may be used. The weight members are preferably in the form of a prismatic figure such as a cylinder or prisms having three or more sides as well as fluted or other similar forms. As is evident in the drawings, the weight balancing members of this disclosure extend for a substantially equal amount in opposite directions with respect to the longitudinal axis of the club head **11**. The end surfaces of the central weight member **23** are preferably exposed and flush with the striking faces of the club head so that the weight member can directly strike the golf ball. Moreover, at least a portion of the weight member should have a surface in line with the direction in which the ball is to travel, so that the surface of the weight can be used for sighting the direction of travel with the green cup.

FIG. 1 illustrates a putter **10** according to the invention in conjunction with a golf ball **25** and a green cup or hole **26**. As shown in FIGS. 1 and 4, the lateral surfaces of the weight **23** can be used to line up the ball with the hole and to serve as a line of reference. The weight members **23** and **24** may be mounted so that their end faces are also exposed and flush with the striking faces **16** and **17**. Alternatively, they may have only one flush surface or may even be completely embedded within the club head **11**, since the ball will normally not be struck at those points. In the optimum em-

bodiment the moment of inertia of the weight member **22** with respect to the percussive or "sweet point," that is, the axis of the central weight member **23,** should be substantially the same as or at least close to the moment of inertia of the heel-positioned weight member **24** plus the moment of inertia of the ferrule **12** together with the effective component of the shaft and handle about the same axis of the central weight member **23.** As a result, when the ball is struck with the end face of the central weight member **23,** the club head **11** will proceed with a translatory motion and will not rotate or twist. It is clear that, since the weight and the location of the weight members **22, 23** and **24** directly affect the action of the moment of inertia, these members **22, 23** and **24** may be referred to as weight balancing members. It is further evident from the drawings that the shaft **13** is fixedly attached to the club head **11** at a location between the central weight balancing member **23** and the heel **19** of the club head **11.**

Referring to FIGS. **5** and **6,** another embodiment of the invention is shown comprising a club head **30** and a ferrule **31** embedded therein. Weight members **32, 33** and **34** are provided of similar structure to those of FIGS. **1–4.** Additionally, small webs or bridges **35, 36,** and **37** are provided intermediate the weight members **32, 33,** and **34** and the ferrule **31.** The webs **35, 36** and **37** increase the strength of the assembly and prevent twisting of the ferrule. The webs should preferably be thin so they do not obstruct the view through the club head which is transparent.

A further embodiment is shown in FIGS. **7** and **8** comprising a club head **40,** ferrule **41,** weight members **42, 43** and **44.** Weight members **42, 43** and **44** are embedded in the club head **40** in the same manner as in FIGS. **1–4.** The central weight member **43** is connected to the ferrule **41** by means of a web or bridge **45,** which may be in the form of a thin piece of metal welded to the weight member **43** and the ferrule **41,** or alternatively, integral therewith. The assembly may be molded as a unit or extruded in a single piece, and subsequently machined to form.

Still another embodiment is shown in FIG. **9.** The structure is similar to that shown in FIGS. **1–4,** having a club head **50** and a ferrule **51,** and containing weight members **52, 53** and **54.** In this embodiment, however, the club head **50** is formed of three sheet-form club head members, two external club members **55** and **56** having a central club head member **57** sandwiched between the external club head members **55** and **56** and adhered thereto by a suitable adhesive. The central club head member **57** is preferably formed of a colored plastic material which may be either opaque, transparent or translucent, and serves as an ornamental embellishment. The central club head member **57** should preferably be quite thin compared to the lateral club head members, particularly if it is opaque, so that it does not obstruct the vision through the transparent lateral club head members **55** and **56.** The club head members provided with cavities to receive the ferrule and weight members, and then affixed to each other by means of an adhesive, preferably one which will not be visible after it sets. As shown in FIG. **9,** if desired, the weight members **52, 53,** and **54** may be provided with annular grooves **58** or annular ribs **59** and **60** to assist in retaining the weight members in place.

The golf club of the present invention represents a decided improvement over putter-type golf clubs of the prior art. When properly assembled and balanced, it provides the player with an easily viewed designation of the percussive point, that is the point of the club at which the ball should be struck. When thus struck at the proper point, the club is balanced by the various weights so that there is no tendency to twist or turn. Additionally, the lateral walls of the weight members, and particularly the central weight member, provide an accurate means for sighting the club towards the green cup or hole. This is made possible by the fact that the club head is made of a light-transmitting, and preferably a transparent, plastic material so that the outlines of the weight members may be readily seen for aiming the club. The club head has a very attractive appearance, particularly when a clear plastic material such as Plexiglas is utilized, and an attractively colored material such as polished brass utilized for the weight members. Golfers, both amateur and professional who have tested the present putter have been generous in their praise of both its functional merits and its aesthetic appearance. Some golfers have claimed to have taken from one to two strokes off their game by the use of the club. The club is relatively easy to assemble and relatively inexpensive to produce.

While but only a few forms of the invention have been shown and described, other forms within the spirit and scope of the invention will now be apparent to those skilled in the art. Therefore the embodiments shown in the drawings are to be considered as merely diagrammatically setting forth the invention for illustrative purposes, and are not intended to limit the scope of the invention herein described, shown and claimed.

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. A putter golf club for use in putting comprising:

a. an elongated club head symmetrically formed about a longitudinal axis and composed of a light-transmitting material having at least one relatively flat striking face extending parallel with respect to said longitudinal axis, said head having disposed therein:

1. a centrally located first weight balancing of substantially rod form arranged substantially perpendicular to said striking face having an end face exposed and flush with the surface of said striking face, and having a longitudinal surface substantially perpendicular to said striking face,
2. a second weight balancing member disposed within the toe portion of said club head,
3. a third weight balancing member disposed in the heel portion of said club head, all of said weight members being spaced apart from each other along the longitudinal direction of said club head,
4. said weight balancing members being composed of metal; and

b. a handle comprising a shaft having one end fixedly attached to said head at a location between said first weight balancing member and the heel portion of the club head, and having a grip mounted at the other end of said handle,

c. said light-transmitting material being effective to reveal said longitudinal surface of the first weight balancing member.

2. A golf club according to claim 1, wherein said weight balancing members are cylindrical in form, and their axes are perpendicular to said striking face.

3. A golf club according to claim 1, having a tubular ferrule extending into said head at the top surface thereof, the end of said shaft being disposed within and affixed to said ferrule.

4. A golf club according to claim 1, wherein said head is formed of two outer relatively thick plates of a transparent plastic material, and wherein a thin sheet of a material having a color other than that of said outer plates is interposed between and affixed to said outer plates.

5. A golf club according to claim 1 wherein said weight balancing members are so arranged that their axes are substantially parallel with each other.

6. A golf club according to claim 1 wherein at least one of said weight members is provided with annular grooves for retaining said weight member within said club head.

7. A golf club according to claim 1 wherein at least one of said weight members is provided with annular ribs for retaining said weight member within said club head.

8. A golf club according to claim 1 having two substantially parallel striking faces, whereby said club may be used as either a right-handed or a left-handed club.

9. A golf club according to claim 8 wherein both end faces of said centrally located weight member are exposed and flush with the surfaces of said striking faces.

10. A golf club according to claim 1, wherein said weight balancing members extend a substantially equal amount in opposite directions with respect to the longitudinal axis of the club head.

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