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(71) Applicant and
(72) Inventor: **HAN, Sang Bae** [KR/KR]; 106-1082, LG 1-cha Village Apt., Seongdongmaeul, 155, Seongbok-dong, Yongin-si, Gyeonggi-do 449-980 (KR).

(74) Agent: **JIN, Cheon Woong**; Nobel International Patent & Law Firm, 7th Fl., Yukseong Bldg., 706-25, Yeoksam-dong, Gangnam-gu, Seoul 135-080 (KR).

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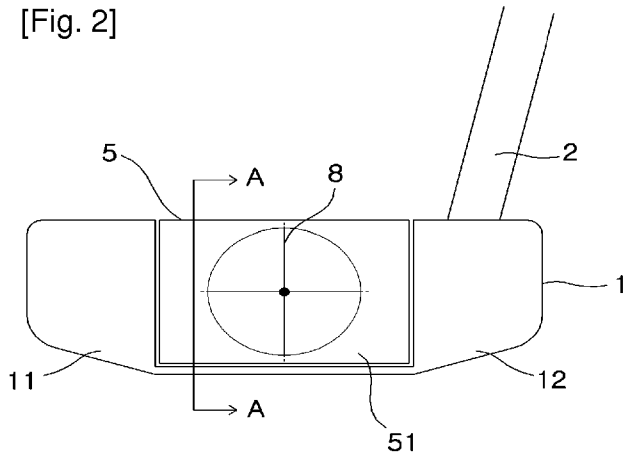
(54) **Title:** THE GOLF PUTTER WITH THE FUNCTION OF OBSERVATION

[Fig. 2]



(57) **Abstract:** A golf putter used for golf game is disclosed, wherein the putter head is mounted with an observation unit equipped with at least one or more from a prism, a convex mirror, a concave mirror and a lens capable of allowing a player to directly observe a target direction, a strike point of a golf ball and an alignment state between the ball and the target with the naked eye from above a putter face, and the observation unit is mounted with an aiming unit configured with linear and circular shapes to allow the target direction and the putter face to be squared and to allow a player to precisely strike the sweet spot, such that the target direction and a rear surface of the ball can be observed in person with the naked eye to accurize the putting in terms of distance and straightness, and heads-up can be avoided.

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Description

THE GOLF PUTTER WITH THE FUNCTION OF OBSERVATION

Background Art

[1] The present invention relates to a golf club used in the golf game, and more particularly to a golf putter capable of allowing a player to putt by visually checking a front direction of a face and a target direction from an upper side of a head.

[2]

[3] The traditional putting is most frequently executed by sense and by eye measurement in the form of ascertaining a target point, addressing toward a target direction while only watching the ball and the putt. It is therefore difficult to allow the target direction and the face of the putter to be accurately aligned. It is also difficult to accurately strike a ball at a sweet spot associated with the putter's ball striking face. Still another problem is that players tend to heads up prematurely to observe the putting result by eye and are prone to commit a blunder.

[4]

Disclosure of Invention

Technical Problem

[5] The present invention is disclosed to solve the aforementioned problems and it is an object of the present invention to provide a golf putter with observation function mounted with observation means to allow a player to directly observe a target direction, a strike point of a golf ball and an alignment state between the ball and the target with the naked eye from above a putter face, whereby the target direction and the putter face are squared to allow the player to strike the sweet spot (the point on the striking face located on the line of movement of the centre of gravity of the club head, or center of gravity), such that the target direction and a rear surface of the ball can be observed in person with the naked eye to accurize the putting in terms of distance and straightness, and heads-up can be avoided.

[6]

Technical Solution

[7] In one general aspect, a putter club head may comprise observation means for allowing a player to directly observe with eyes a target direction ahead of a putter face and a rear surface of a golf ball.

[8]

[9] Implementations of this aspect may include one or more of the following features.

[10]

[11] The observation means may be selected from one of the reflective bodies including a prism, a flat mirror, a convex mirror and a concave mirror, and an optical magnifying or a reducing instrument, or in combination thereof.

[12]

[13] The prism that can execute a total reflection unlike a mirror has an advantage of a bright and clear screen. The prism may be selected from at least one or more of the concave mirror, the convex mirror and a lens. The prism may be carved with concave, or convex sphere, so that the prism itself can be configured with a convex mirror or a concave mirror to enhance the light transmission rate and to constitute an accurate yet simple appearance.

[14]

[15] The prism may include training means configured with at least one of the linear and circle shapes, such that the putter face, the target and the ball can be precisely aligned and aimed to thereby improve the accuracy of the putting. The prism may also include inclination angle control means for adjusting an inclination angle of the prism, such that the inclination angle can be adjusted in accordance with an individual attribute.

[16]

[17] It is preferable that the control means be solidly manufactured to prevent the observation means from being swayed by the putting impact as change of the inclination angle during the game may be against the game rule or inclination angle is not easily changed. Preferably, the inclination angle is so configured as to be changed by a tool or the like.

[18]

Advantageous Effects

[19] The present invention enables a player to directly observe a target direction, a strike point of a golf ball and an alignment state between the ball and the target with the naked eye from above the putter head, whereby the target direction and the putter face are squared to allow the player to observe and precisely strike the sweet spot (center of gravity), such that the target direction and a rear surface of the ball can be observed in person with the naked eye to accurize both the distance and straightness and heads-up can be avoided.

[20]

Brief Description of the Drawings

[21] FIG.1 is a conceptual view relative to use of a golf putter according to the present invention.

[22] FIG.2 is a cross-sectional view of a golf putter according to a first exemplary implementation of the present invention.

[23] FIG.3 is a cross-sectional view taken along line A-A of FIG.2.

[24] FIG.4 is a cross-sectional view of a golf putter according to a second exemplary implementation of the present invention.

[25] FIG.5 is a cross-sectional view of a golf putter according to a third exemplary implementation of the present invention.

[26] FIG.6 is a cross-sectional view of a golf putter according to a fourth exemplary implementation of the present invention.

[27] FIG.7 is a cross-sectional view of a golf putter according to a fifth exemplary implementation of the present invention.

[28]

Best Mode for Carrying Out the Invention

[29] Exemplary implementations of the present invention will be described in detail with reference to the accompanying drawings.

[30]

[31] FIG.1 is a conceptual view relative to use of a golf putter according to the present invention.

[32]

[33] A golf club head of the present invention generally composed of a head (1), a shaft (2) and a grip (3) may include observation means for a player to personally observe with the naked eye from above a putter face a target direction ahead of the putter face, a rear surface of a ball (4) and an alignment state of the ball, and to enhance to ascertain a forward area through the observation means, and to improve feelings of directions and distances by addressing the ball to putt while ascertaining a forward area through the observation means.

[34]

[35] FIG.2 is a schematic cross-sectional view of a golf putter according to a first exemplary implementation, and FIG.3 is a cross-sectional view taken along line A-A of FIG.2.

[36]

[37] The observation means equipped at the putter head is configured to be exemplified by a prism, where an overall head may be configured with a prism to which a shaft is directly connected.

[38]

[39] In the present exemplified implementation, a prism (5) may be mounted at a weight center of the putter head (1), where tow (11), a heel (12) and a head rear surface (13) are made of metallic materials, and the shaft (2) is connected to the heel.

[40]

[41] The prism may be made of optical glass, synthetic resin, crystal and reinforced material. A prism face is designed with lines and a circle for use as aiming means (8) for easy aiming. The aiming means (8) may be mounted at an upper surface (52) of the prism or an inclination surface (53) from which reflection is performed.

[42]

[43] The head is centrally configured with the prism (5) having transparent optical materials with a less specific gravity, while the tow (11) and the heel (12) are constituted with metals having a larger specific gravity to allow the head to have a uniformly divided mass at each side of the head, whereby the moment of inertia can be enhanced and directional orientation can be increased.

[44]

[45] The glass or synthetic resin may be cured for increased hardness to hold off being easily scratched. An appropriate adjustment of hardness may be effected in the course of curing process, such that the glass or the synthetic resin has an advantage over the metal materials.

[46]

Mode for the Invention

[47] FIGS. 4 to 7 are cross-sectional views of a golf putter according to second to fifth exemplary implementations of the present invention.

[48]

[49] The prism mounted at the putter head may select one or more from a convex mirror, a concave mirror and a lens to make it easy to observe and check the target and to enhance the preciseness of putting.

[50]

[51] FIG.4 illustrates an exemplary implementation in which, an inclination surface (53) of the prism (5), which is a reflection surface from which a total reflection is effected, is cut to a partial sphere on which depressed engraving (6) is formed, such that the depressed engraving serves as a convex mirror by refracting the totally-reflected light, and a phase of target direction observed from the upper surface (52) can be observed with a reduced size. As a result, there is an advantage of broadening (enlarging) an observational view.

[52]

[53] FIG.5 refers to an exemplary implementation in which the reflection surface (53) of the prism (5) is so embossed as to be protruded in the form of a partial sphere, and the inclination surface is formed with an embossed spherical surface (7), such that the embossed spherical surface serves as a concave mirror by refracting the totally-reflected light, and a phase of the target direction observed from the upper surface (52)

can be observed with an enlarged size. As a result, there is an advantage of striking point to be impacted being observed with an enlarged form.

[54]

[55] FIG.6 is an exemplary implementation in which the upper surface of the prism (5) is cut to a partial spherical shape to serve as a concave mirror with a depressed spherical surface (61), such that a phase (an image)passing the depressed spherical surface is reduced in size to thereby enlarge the view.

[56]

[57] FIG.7 shows an exemplary implementation in which the prism (5) serves to function as a convex lens by allowing the upper surface (52) of the prism (5) to be so embossed as to protrude in the form of partial sphere and allowing the upper surface to be formed with a depressed spherical surface (71), such that a phase passing the embossed spherical surface can be enlarged.

[58]

[59] The magnifying and reducing means are not limited to the sweet spot. Each lateral surface of the sweet spot area may be formed with at least one or more magnifying and reducing means, whereby the target can be directly observed through the lateral surface of the ball.

[60]

[61] Furthermore, the observation means is not limited to the prism. Other means are possible. For example, the observation means may be formed by selecting from at least one or more of the reflection bodies such as a flat mirror, a concave mirror, a convex mirror and a lens, and tools mounted with optical magnifying and reducing functions, these concepts of which are also within the scope of the present invention.

[62]

Industrial Applicability

[63] The present invention provides a golf putter capable of allowing a player to putt by ascertaining with the naked eye above the putter head a target direction and a forward area ahead of putter face.

Claims

[1] A golf putter with the function of observation comprising observation means mounted at a putter head for allowing a player to directly observe with naked eye a target direction ahead of a putter face and a rear surface of a golf ball from above the putter face, wherein the observation means is a prism.

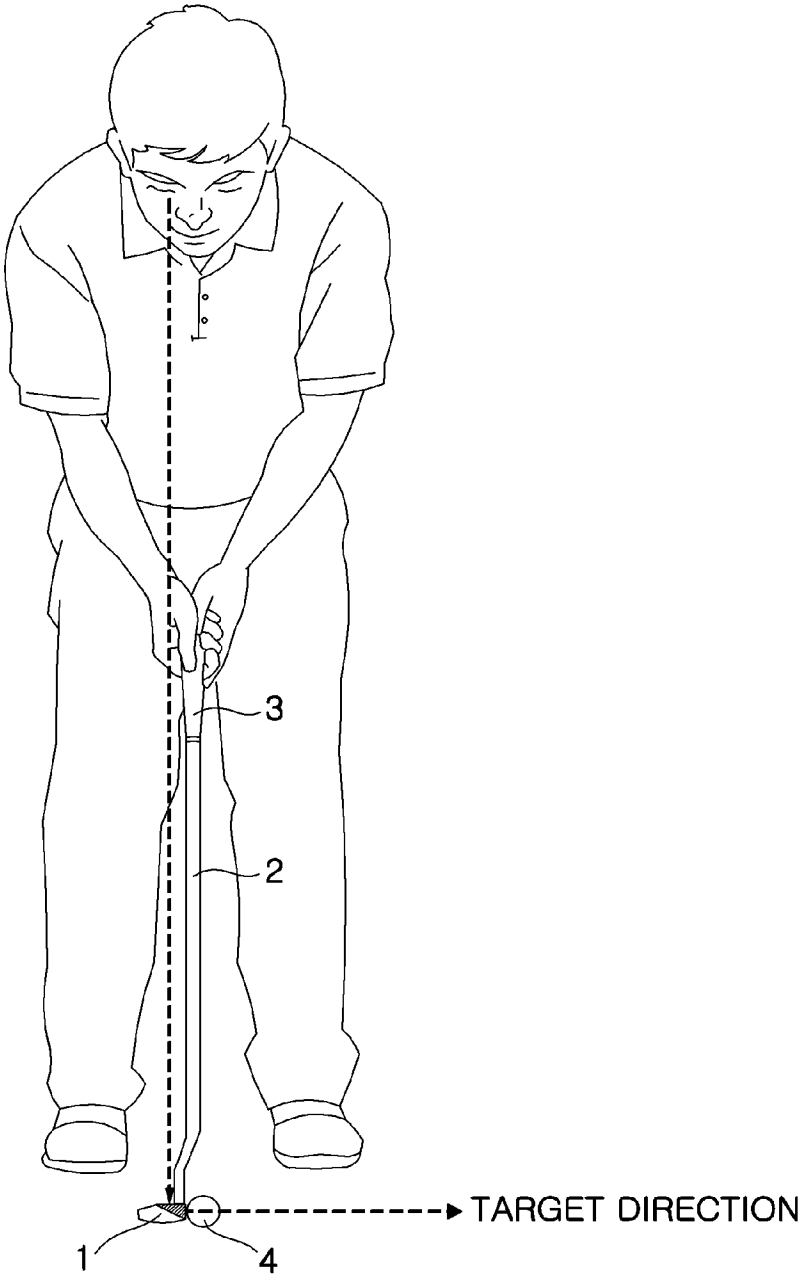
[2] The golf putter as claimed in claim 1, wherein the observation means is selectively mounted with at least one or more of a concave mirror, a convex mirror and a lens.

[3] The golf putter as claimed in claim 1, wherein the observation means is selected from at least one or more of the flat mirror, a concave mirror, a convex mirror and a lens.

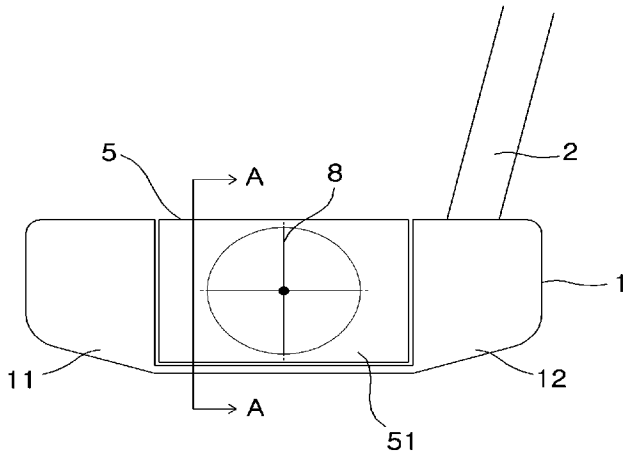
[4] The golf putter as claimed in claim 1, wherein the observation means is mounted with aiming means carved with at least one of lines and circles for use as aiming means.

[5] The golf putter as claimed in claim 1, wherein the observation means is mounted with inclination control means for adjusting an inclination angle.

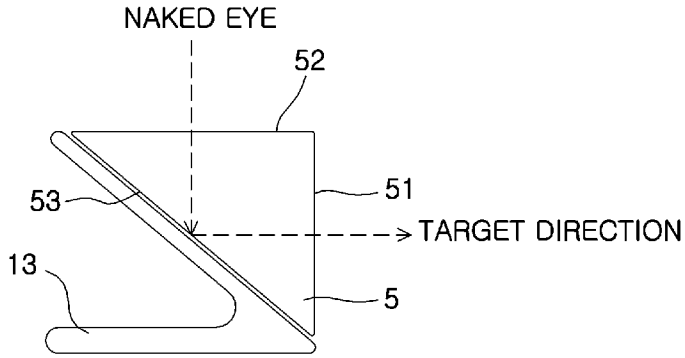
[Fig. 1]



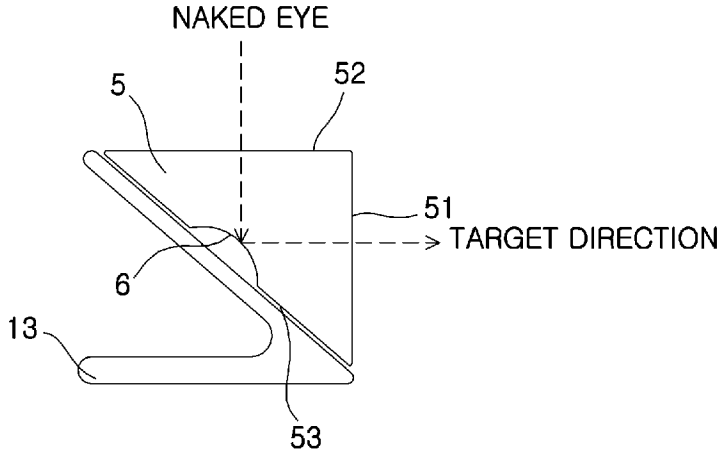
[Fig. 2]



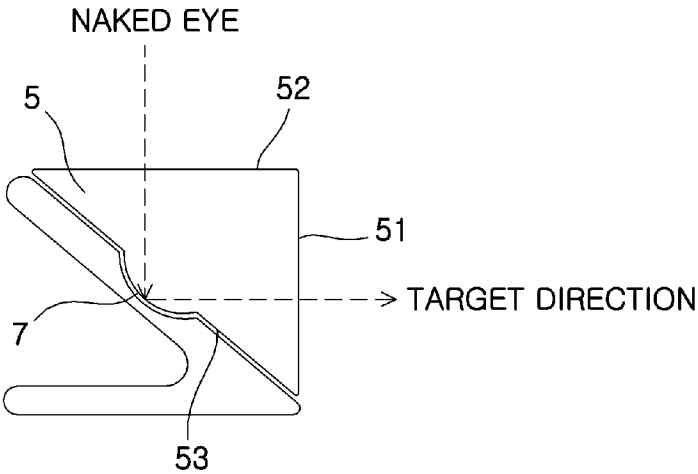
[Fig. 3]



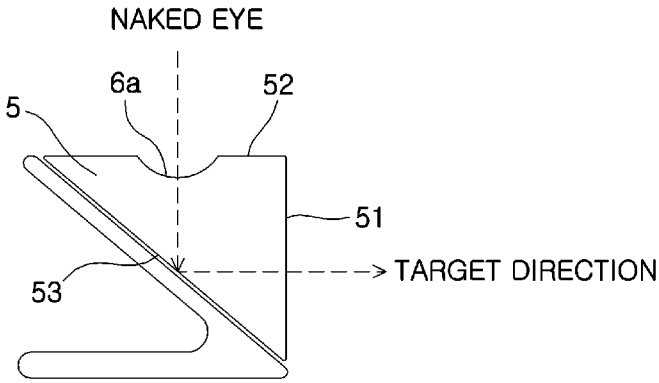
[Fig. 4]



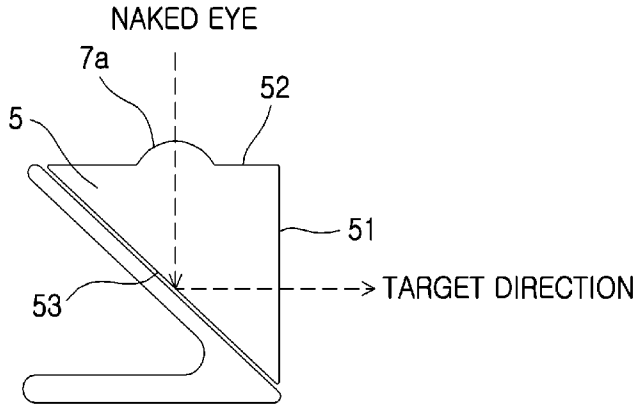
[Fig. 5]



[Fig. 6]



[Fig. 7]



INTERNATIONAL SEARCH REPORT

International application No.
PCT/KR2007/004159

A. CLASSIFICATION OF SUBJECT MATTER

A63B 53/04(2006.01)i

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 8 A63B 53/00, 69/36

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean Utility models and applictions for Utility models since 1975

Japanese Utility models and applications for Utility models since 1975

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKIPASS(KIPO INTERNAL), Kyeword : "golf, putter"

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	KR 20-0319933 Y1 (Ki Chul Yeom) 16 July 2003	1-4
A	See abstract, claim 1 and figures 1-2	5
X	KR 20-2000-0005676 U (Dae Hoon Jeong) 06 April 2000	1
A	See abstract, claim 1 and figures 2-3	2-5
X	JP 08-196669 A (Shiyuu Itsukiyuu Kenchiku Sekkei Jimusho:KK) 06 August 1996	1
A	See abstract, claim 1 and figure 1	2-5
A	KR 10-2003-0088155 A (You Shin Lee) 19 November 2003 See abstract, claims 1-2 and figures 2-3	1-5

☐ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

* Special categories of cited documents:

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Date of the actual completion of the international search	Date of mailing of the international search report
29 JANUARY 2008 (29.01.2008)	**29 JANUARY 2008 (29.01.2008)**

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Korean Intellectual Property Office
920 Dunsan-dong, Seo-gu, Daejeon 302-701,
Republic of Korea

Facsimile No. 82-42-472-7140

Authorized officer

SEO, Il Ho

Telephone No. 82-42-481-5997

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
KR 20-0319933 Y1	16-07-2003	None	
KR 20-2000-0005676 U	06-04-2000	None	
JP 08-196669 A	06-08-1996	None	
KR 10-2003-0088155 A	19-11-2003	None	