



(11)

EP 2 801 395 A1

(12)

EUROPEAN PATENT APPLICATION
published in accordance with Art. 153(4) EPC

(43) Date of publication:

12.11.2014 Bulletin 2014/46

(51) Int Cl.:

A63B 53/00 (2006.01) **A63B 53/04** (2006.01)
A63B 53/10 (2006.01)

(21) Application number: **12852183.8**

(86) International application number:

PCT/ES2012/070351

(22) Date of filing: **17.05.2012**

(87) International publication number:

WO 2013/076329 (30.05.2013 Gazette 2013/22)

(84) Designated Contracting States:

**AL AT BE BG CH CY CZ DE DK EE ES FI FR GB
GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO
PL PT RO RS SE SI SK SM TR**

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(30) Priority: **25.11.2011 US 201113373704**

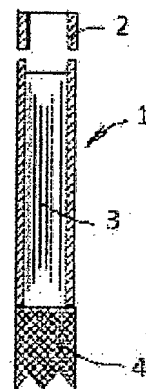
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(54) **GOLF CLUB FOR TEACHING OR LEARNING GOLF**

(57) The invention relates to a golf club for teaching or learning golf, formed by a grip, a tubular shaft and various club heads, having suitable respective measurements. The golf club of the invention is made from very lightweight, low-hardness materials especially designed to prevent the user and/or companions from being injured. The tubular shaft is rigid, has very low malleability and is made from a very lightweight material, such as fibreglass or plastic. A solid heavy metal bar is press-fitted into the lower end of the tubular shaft in order to reinforce the shaft and to provide additional weight or ballast, said shaft being secured in the corresponding club head such that it can be used to play golf under the same conditions as those which apply to adults, to play golf in small spaces and to teach golf to children, youths, teens (juniors) and the like.

Fig. 1.



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Description

OBJECT OF THE INVENTION

[0001] As the title of this document indicates, the present invention consists of a golf club specially designed for playing the game of golf in small spaces, for teaching golf to children, youths and teens (juniors) etc., or for children, youths and teens (juniors) etc., to learn to play golf. It is specially designed to:

1. Prevent the player himself, participants or companions from experiencing problems or becoming injured as a result of using the golf club incorrectly or not knowing how to use it, given the hardness and weight of the materials (steel or graphite) currently used in golf clubs, the shafts of which are usually made of steel or graphite and the club heads of wood or metal, reinforced with peripheral weight in order to hit the ball.

2. Make it possible to play golf in small spaces.

3. Make it possible to learn to play golf properly, given that the technical and design characteristics of the invention are fit for purpose.

[0002] The invention proposes a golf club with technical and/or functional characteristics, which are appropriate for the formal development of the game (golf), unique in that the materials used are lightweight, low-hardness materials, in order to prevent accidental blows from harming or injuring the player, participants or companions, whilst also making it possible for the game of golf to be played in conditions equivalent to those for adults.

BACKGROUND OF THE INVENTION

[0003] At present, practically all golf clubs for children are equivalent to or the same as those for adults but with different measurements, the tubular shaft being made of graphite or wood, which are ultimately less hard and dangerous than those made of steel. Similarly, the club head is made of cast iron or forged iron, which makes the golf club a heavy and dangerous iron, should you hit yourself, another participant or companions with it.

[0004] There are other golf clubs which are very light in composition and made of plastic materials, the tubular shaft of which is a body of plastic material, as is its club head, which does not have a recharge or counterweight, resulting in a low force hit. Other clubs have a club head with a spongy, polyurethane body made of compact leather, with a kind of metal counterweight injected or moulded inside the head. These clubs are inadequate in terms of both design and technical characteristics.

[0005] Teaching or learning in the abovementioned cases is highly imprecise and imperfect and provides little guarantee of achieving a high enough level to be able to

move onto the next level, in which golf clubs for adults are used. In fact, these clubs serve as a material for children to play with, in the broadest sense of the word, as a form of entertainment, without any kind of technical objective.

[0006] The following patents may be cited in the state of the art:

- US 5,335,914 for a "GOLF CLUB HEAD" from Clay Long, Albany Ga.;
- US 5,672,120 for a "GOLF CLUB HEAD" from Stan L. Ramirez;
- US 7,713,143 B2 for a "GOLF CLUB HEAD WITH ADJUSTABLE WEIGHTING, CUSTOMIZABLE FACE-ANGLE AND AVRIABLE BULGE AND ROLL FACE" from D. Clayton Evans;
- US 2003/0176235 A1 for a "SLOTTED HOSEL FOR GOLF CLUB HEAD" from Bruce D. Burrows;
- US 2008/0318707 A1 for a "GOLF CLUB HEAD WITH FOAM CORE" from Mergy; Jeffrey T.; Serano; Anthony D and Jones; David D.
- US 5,244,211 A1 for a "GOLF CLUB AND METHOD OF MANUFACTURE" from Lukasiewicz; Robert F.
- US 4,988,104 A1 for a "GOLF CLUB HEAD AND PROCESS FOR ITS FABRICATION" from Shiotani, Tadahiko; Wantanabe; I.

DESCRIPTION OF THE INVENTION

[0007] The invention is formed by a golf club, wherein a rigid, tubular shaft, which is not very malleable and made of lightweight material such as fiberglass or plastic, sticks out and, at the lower end of which the club head of said club is fitted, by means of a neck or throat arranged on said club head. Likewise, on the lower end of the tubular shaft, a solid heavy metal bar is press-fitted, which serves as a weight recharge to the golf club, whilst also reinforcing this area, making the golf club stronger, especially when hitting the ball with it. It is well covered by the tubular nature of the fibreglass, plastic or other lightweight material, in order to prevent harming or injuring the user and/or his companions.

[0008] The press-fitting of the solid heavy metal bar is secured by means of incorporating a glue or extra strong adhesive substance, preferably methyl cyanoacrylate or similar, which is applied to or spread on both the solid heavy metal bar and on the inside of the shaft, exactly in the area where both come into contact, prior to definitively fitting the solid heavy metal bar inside the tubular shaft, in such a way that they form one single, inseparable body.

[0009] The solid heavy metal bar fitted at the lower end of the tubular shaft extends along approximately $\frac{1}{4}$ or $\frac{1}{3}$

of the total length of the tubular shaft. In one case, said solid heavy metal bar reaches the lower end of the tubular shaft and is level with it. In another case, said end exceeds in a small portion and another case, it is the tubular body of the tubular shaft which exceeds the solid heavy metal bar inside it in a small portion, this portion of the tubular shaft remaining hollow inside. The portion of the end of the tubular shaft which exceeds the solid heavy metal bar does not require any glue inside.

[0010] The tubular shaft made of lightweight material such as fibreglass or plastic may in turn be covered with or wrapped in a soft cover, case or sleeve made of soft material such as rubber or latex, in such a way that it is very tight or close fitting to said tubular shaft, with the aim of protecting the user or companions in a more effective way, in the event of them accidentally being hit by the golf club when in use.

[0011] According to the invention, each golf club head, mounted to its respective lower end of the tubular shaft, will comprise:

1. A club head formed by a rigid paddle of lightweight material, such as plastic, reinforced by a special, irregular traditional ovoid shaped design with longitudinal grooves in the sweetspot; a thick reinforcement nerve in the back side and on the leading edge, preferably occupying a little more than 1/3 of its height and declining towards said leading edge.

The club head on the (heel) side, which has a smaller radius than the other (toe) side, projects a tubular neck (hosel) upwards and towards said end, in order to fix and fit the lower tubular end of the tubular shaft. Inside, the neck has vertical nerves which are tangent with said neck, as male bayonet mounting elements with the tubular shaft, which has lateral and tangential openings on its lower side respectively, which fit in said nerves. The club head as a whole has a loft angle which is preferably at 46 ° on the vertical axle and the neck a lie angle at 63 ° on the horizontal axle.

2. A club head formed by a paddle of semi compact material such as a polyurethane mass covered with a uniform and compact layer. The club head is reinforced by a special traditional ovoid design with a straight top edge and an inwardly arching leading edge, the sole being thicker than the top edge with the back side forming a concentric input plane defined by an unequal profile flange, having longitudinal grooves on its front face in the sweetspot and a loft angle at preferably 46° in relation to the vertical axle.

From the heel end of the vertex, which has a lesser radius than the other, toe end, a protruding hosel is projected in tubular form, with a lie angle at preferably 63 ° on the horizontal axle, on which the end of the tubular shaft is fitted and fixed at pressure in its mass with its solid heavy metal bar inside, level with the

end of the tubular shaft or with a portion of said solid heavy metal bar, which protrudes slightly from said end, penetrating from the neck to the coupling of the protruding portion of the solid heavy metal bar or even of the tubular shaft itself with the body of the club head reinforcing the body of said club head when hitting the ball. Likewise, the part of the shaft which is introduced inside said club head is spread with glue in order to make the final sticking of the club head even stronger.

3. A club head formed by a rigid paddle of semi compact material such as a polyurethane mass covered in a uniform layer and likewise reinforced by a special design in oblong form composed of one heel end, which is lesser in radius than the other toe end and by a protruding, eccentric hosel, which ascends in prismatic form with an axial reinforcement to fix and press fit said lower end of the tubular shaft to its solid heavy metal bar, the latter being fixed level with the lower end of the tubular shaft or with a portion of said solid bar exceeding the lower end of the tubular shaft, in both cases embedded to the coupling with the body or mass of the club head, reinforcing the body of the same in order to hit the ball.

The club head has a loft angle at preferably 0 ° in relation to the vertical axle and a lie angle, at preferably 71 ° in relation to its horizontal axle. Likewise, glue is spread onto the part of the shaft which is introduced inside said club head, in order to make the final sticking of the club head even stronger.

4. Club head formed by a rigid paddle of lightweight material, such as plastic, reinforced with a special, oblong shaped design and a hollow body, in such a way that, divided into two almost symmetrical parts, one forms a lid and the other a box, both units being joined together by means of dovetail joints. At the heel end of the box, a tubular hosel is projected which ascends, to be fitted and fixed on the end of the tubular shaft. Said hosel could have vertical nerves inside, which are tangential to said neck, as male bayonet mounting means with the tubular shaft, which has respective lateral and tangential openings on the lower end, which will fit in these nerves. Likewise, said hosel extends in a housing compartment within the box composed of just two parallel walls, which are different in height and into which the tubular shaft enters with its solid heavy metal bar fixed inside it.

The portion of the tubular shaft which enters into the hosel compartment has opposing drill holes, between which a fastener is mounted, which fits inside a female portion located at the base of the hosel extension within the box, thus preventing the tubular shaft from being taken out by pulling it. Likewise, the tubular shaft may be covered with adhesive in order to increase the level of adhesion between the two

elements and to prevent both the compartment and adhesion from wobbling. In the hosel extension within the case or compartment, on the external side which is confluent with the vertices of the hosel with the box, there are reinforcements which are all equal in height, different in length and at a different angle from the same. The box has at least two female members to fit with dovetail joints in the lid which has another two complementary male members, an internally fitting peripheral tab and a semi-circular neckline to hold the hosel in the assembly with the tubular shaft.

[0012] The inside of said ensemble (box/lid) may optionally be filled with a polyurethane foam or another material with the aim of reinforcing and recharging the weight of said ensemble (box/lid), thus obtaining greater compression.

[0013] Said club head has a loft angle which at preferably 0° on the vertical axle and a lie angle which at preferably 71° on the horizontal axle.

THE DRAWINGS

[0014]

Figure 1 is a longitudinal cross-section partially representing the tubular shaft of the golf club, object of the invention.

Figure 2 is a perspective elevation view of the tubular shaft with a female adjustment for bayonet mounting.

Figure 3 is a perspective plan representation of a detail of said female bayonet adjustment in the shaft.

Figure 3.1 is a plan representation of a detail of the hosel of the club head with the male bayonet adjustment of the tubular shaft.

Figure 4 is a perspective elevation representation of the tubular shaft with its solid heavy metal bar inside the same, leaving a hollow space in order to be mounted to the shaft with a fastening.

Figure 4.1 represents the same as Figure 4 but with the solid heavy metal bar level with the end of the shaft, with an adjustment for mounting to both with a fastener.

Figure 5 is a perspective detail of the pressure fitting and adhesion of the solid heavy metal bar housed in the tubular shaft.

Figure 6 is a perspective foreshortened frontal view before an iron type plastic club head.

Figure 7 is a perspective foreshortened plan view of

the same piece represented in the previous figure.

Figure 8 is a perspective view of the piece represented in Figure 7, rotated by 180° .

Figure 9 is a perspective foreshortened lateral elevation of the piece represented in Figure 6.

Figure 10 is a perspective foreshortened frontal view before an iron type club head made of polyurethane foam.

Figure 11 is a perspective foreshortened back side view of an iron type club head made of polyurethane foam.

Figure 12 is a perspective foreshortened plan view of the base of an iron type club head made of polyurethane foam.

Figure 13 is a perspective foreshortened lateral elevation and plan view of the piece represented in Figures 10, 11 and 12.

Figure 14 is a perspective foreshortened lateral elevation view at 90° of Figure 13.

Figure 15 is an analogous view of Figure 6 with the bayonet adjustment of the tubular shaft shown in Figures 6-9 made of plastic, with its solid heavy metal bar level with the lower end of the tubular shaft.

Figure 16 is an analogous view of the previous figure, with a bayonet adjustment squeezed into plastic tubular shaft, with its solid heavy metal bar protruding from the lower end of the tubular shaft.

Figure 17 is an analogous view of Figure 10, with the adjustment and connection of the lower end of the tubular shaft together with its solid heavy metal bar level with the lower end of the tubular shaft, in the body of the club head made of polyurethane foam.

Figure 17.1 is an analogous view of the previous figure with the adjustment and connection of the solid heavy metal bar protruding from the lower end of the tubular shaft, in the body of the club head made of polyurethane foam.

Figure 18 is a perspective lateral elevation of a putter type club head made of polyurethane foam.

Figure 19 is a lateral elevation of one end of the piece represented in Figure 18.

Figure 20 is a plan view of the piece represented in Figures 18 and 19.

Figure 21 is a lower plan view of the piece represented in Figures 18-20.

Figure 21.1 is a vertical cross section of the club head represented in Figures 18-21 with the solid heavy metal bar protruding from the tubular shaft at the lower end.

Figure 21.2 is an analogous view of the above with the solid heavy metal bar level with the lower end of the tubular shaft.

Figure 22 is a front elevation of a hollow club head which is oblong in form, of the putter variety and made of plastic.

Figure 23 is a front elevation of the opposite side to that shown in the previous figure.

Figure 24 is an upper plan view of the piece represented in Figures 22-23.

Figure 25 is an elevation view of one end of Figure 24.

Figure 26 is a frontal representation of the inside of both pieces, the box and the lid, of the ensemble represented in Figures 22-25.

Figures 27 is a plan view of the previous figure.

Figure 28 represents the tubular shaft sectioned and mounted on the club head represented in Figures 20-27, with its solid heavy metal bar level with the lower end of said tubular shaft.

Figure 29 is an analogous view of the previous figure, sectioned and mounted to the club head and its solid heavy metal bar protruding from the lower end of said tubular shaft.

Figure 30 is an analogous view of the previous figures 28 and 29, with the tubular shaft mounted and in crosswise sections, with its solid heavy metal bar fixed onto the fastener.

DESCRIPTION OF THE DRAWINGS

[0015] The drawings define a golf club ensemble (1), with its grip, shaft and club head. The invention comprises a tubular shaft (2), which is rigid, with low malleability and made of a lightweight material which is not very heavy, such as fibreglass or plastic, at the lower end of which a solid heavy metal bar (3) is press fitted, which serves as an additional weight to the golf club and as a reinforcement to said tubular shaft (2) in this area, thus reinforcing the gold club, especially when hitting the ball.

[0016] Press-fitting the solid heavy metal bar (3) ensures that, by means of incorporating an extra strong

glue or adhesive substance (8), preferably methyl cyanoacrylate or a similar substance, which is applied to or spread on both the solid heavy metal bar (3) and the inside of the tubular shaft (2), exactly in the area where both come into contact with one another, prior to housing the solid heavy metal bar (3) inside the tubular shaft (2) definitively, in order for them to form one single, inseparable body.

[0017] The solid heavy metal bar (3) fitted at the lower end of the tubular shaft (2) extends along the length of approximately $\frac{1}{4}$ or $\frac{1}{3}$ of the total length of the tubular shaft (2). Said solid heavy metal bar (3) reaches the lower end of the tubular shaft (2) where appropriate and is level with the same (see Fig. 2). In another case, said end exceeds a small portion (see Fig. 17) and in a further case, the solid heavy metal bar (3) is shorter, therefore not reaching the end of the tubular body of the tubular shaft (2) in a small portion (20a) (see Fig. 4) and this portion of the tubular shaft (2) remaining hollow inside. The portion (20a) of the end of the tubular shaft (2) which the solid heavy metal bar (3) exceeds does not require adhesive inside.

[0018] The tubular shaft (2) made of lightweight material such as fibreglass or plastic, may in turn be covered or wrapped with a case, shell or sleeve (4) (see Fig. 1) made of soft material such as rubber or latex, in such a way that it is very close fitting or tight fitting to the tubular shaft (2), with the aim of making the protection provided to the user or his companions, in the event of them accidentally being hit by the golf club (1) more effective whilst the same is in use.

[0019] Each golf club head, mounted to its respective lower end of the tubular shaft (2), according to the invention, comprises:

1) A club head (9) (see figures 6-9 attached) formed by a rigid paddle of lightweight material (see Fig. 6), such as plastic, reinforced by a special traditional irregular ovoid design, with longitudinal grooves (10) in the sweet spot; a thick reinforcement nerve (11) (see Fig. 8) in the back side and on the leading edge, preferably occupying just over $\frac{1}{3}$ of its height and decreasing towards said leading edge.

The heel end of the club head (9), which is smaller in radius than the other toe end, projects a tubular hosel (90) in an upwards direction towards said end, in order to fit and fix the lower end of the tubular shaft (2). The hosel (90) has vertical nerves (30) inside, which are tangent to said hosel, which serve as male bayonet mounting means with the tubular shaft (2), which has corresponding lateral openings on its lower end which are tangential (5) (see Figure 2) and which fit in said nerves (30).

The club head (9) as a whole has a loft angle at preferably 46° in relation to the vertical axle and the hosel (90) has a lie angle, at preferably 63° in relation to the horizontal axle.

2) A club head (12) (see Figs. 10-14 attached) formed by a rigid paddle of semi compact material such as a mass of polyurethane covered with a uniform and compact layer. The club head (12) is reinforced by a special traditional ovoid design with a straight top edge (12a) and a leading edge (12b), which curves towards the inside, with the sole (15) being thicker than the top edge (12a) and the back side (14) forming a concentric input plane (14a) defined by an unequal profile flange, its front face presenting longitudinal grooves in the sweet spot (10a) and a loft angle at preferably 46° in relation to the vertical axle.

A hosel (13) projects upwards from the end of the heel vertex, which is smaller in radius than the other, toe vertex, the hosel protruding in tubular form, with a lie angle at preferably 63° in relation to the horizontal axle, in which the lower end of the tubular shaft (2) is fixed and press fitted with its solid heavy metal bar (3) inside, level with the lower end of the tubular shaft (2) (see Fig. 17) or with a portion of said solid heavy metal bar (3) protruding slightly (31) (see Fig 17.1) from said lower end of the tubular shaft (2), penetrating through the hosel (13) to the connection with the body of the club head (12), thus reinforcing said body of the club head as it is used to hit the ball.

3) A club head (16) (see Figs. 18-21.1 attached) formed by a rigid paddle of semi compact material such as a mass of polyurethane covered with a uniform layer and likewise reinforced by a special design in the form of an oblong, composed of one heel (19) end which is smaller in radius than the other, toe end (19a) and by a hosel (16a) which protrudes, is eccentric and rises in a prismatic form with an axial reinforcement (17) for fixing and press fitting said lower end of the tubular shaft (2) to its solid heavy metal bar (3), this solid heavy metal bar being fitted level to the lower end of the tubular shaft (2) (see Fig 21.1) or to a portion of said solid bar (32) exceeding the lower end of the tubular shaft (2) (see Fig 21.1) in both cases being embedded down to the connection with the body or mass of the club head (16), thus making the body of the same stronger in order to hit the ball.

The club head (14) has a loft angle which at preferably 0° in relation to the vertical axle and a lie angle at preferably 71° on the horizontal axle.

4) A club head (20) (see Figs.22-30) formed by a rigid paddle of lightweight material, such as plastic, reinforced by a special oblong design with a hollow body, formed in such a way that, divided into two almost symmetrical parts, one forms a lid (22) and the other a box (21) (see Fig. 26), both being joint together by means of dovetail joints, comprising female (23) and male (24) elements and the box (21) having a hosel (25) where the tubular shaft (2) is

fitted before being fixed by means of a fastener (7); The means for fixing the tubular shaft (2) of the club head (20) consist of an ascending tubular hosel (25), which is in an eccentric position towards an inclined end with a lie angle of preferably 71° in relation to the horizontal axle.

Said hosel (25) has vertical nerves inside (30) which are tangent with said hosel (25) and act as male bayonet mounting means of the tubular shaft (2) which has respective lateral male elements which are tangential (5) on the lower end which fit in said nerves (30).

[0020] The portion (20a) (see Fig 4) of the tubular shaft (2) which enters into the compartment (26) of the hosel (25) has two opposing drill holes (6) between which a fastener (7) is mounted, which fits with a female portion (23a) located in the hosel (25) extension within the box or compartment (26), thus preventing the tubular shaft (2) from being taken out by pulling it. Likewise, the level of adhesion in the compartment (26) and adhesive, prevents it from wobbling, especially in the event of it being incorporated or bayonet mounted.

[0021] In the extension (26) of the hosel (25) within the box or compartment (21), at the external side and in confluence with the vertices of the hosel (25) with the box (21), reinforcements (28 and 28a) exist which are equal in height but differ in length and angle in relation to the same. The box (21) has at least two female members (23) in order to facilitate fitting the lid (22) by means of dovetail fittings, this lid having two further complementary male elements (24), an internally fitting peripheral tab (29) and a semi-circular neckline (29a) to hold the hosel (25) in the mounting with the tubular shaft (2).

[0022] Said hosel (25) extends in a compartment (26) within the box (21) composed of just two parallel walls which are different in height, wherein the tubular shaft (2) enters with its solid heavy metal bar (3) being press-fitted therein, level with the end of said tubular shaft (2) (see Fig. 28) or alternatively, said solid heavy metal bar (3) reaching the limit of the fastener or said solid heavy metal bar (3) exceeding the lower end of the tubular shaft (2) (see Fig. 29), in order to fit and fix the end of the tubular shaft (2).

[0023] The inside of said ensemble (20) (box (21)/lid (22)) may optionally be filled with a polyurethane foam or another material, with the aim of reinforcing and providing an additional weight to said ensemble (box/lid), thus reinforcing it.

[0024] Said club head (20) has a loft angle at preferably 0° in relation the vertical axle.

Claims

1. "Golf club for teaching or learning golf", formed by its corresponding tubular shaft (2) with its respective means adapted according to its various club heads,

- likewise adapted and grip, manufactured using lightweight materials which are not very heavy and which are soft in order to prevent the user and/or his companions from being hurt, **CHARACTERISED in that** said golf club (1) has a rigid tubular shaft (2) with low malleability, made of a lightweight material which is not very heavy, such as fibreglass or plastic, at the lower end of which a solid heavy metal bar (3) is press-fitted, thus reinforcing the tubular shaft (2) and providing an additional weight or ballast, fixed to its respective club head.
2. "Golf club for teaching or learning golf" formed by its corresponding various club heads, likewise adapted, **CHARACTERISED in that** it is formed by a rigid club head (9) made of lightweight material such as plastic, reinforced by means of a special design; a paddle of semi compact material (12) such as a mass of polyurethane foam covered with a uniform layer, likewise having a special design; a club head (16) made of semi contact material, namely a polyurethane foam mass with a uniform layer, in the form of an oblong and; a club head (20) which has a hollow body in the form of an oblong made of lightweight rigid material such as plastic, divided into two almost symmetrical parts, one forming a lid (22) and the other a box (21) and both being joint together by means of dovetail joints.
 3. "Golf club for teaching or learning golf" according to claim 1, the press-fitting of the solid heavy metal bar (3) being **CHARACTERISED in that** it ensures, by means of incorporating an extra strong glue or adhesive substance (8), which is applied to both the solid heavy metal bar (3) and the area in which the same comes into contact with the inside of the tubular shaft (2), before housing the solid heavy metal bar (3) at the lower end of the tubular shaft (2) definitively.
 4. "Golf club for teaching or learning golf" according to claims 1 and 3, the solid heavy metal bar (3) being fixed to one of the ends of the tubular shaft (2), which is **CHARACTERISED in that** it extends along a length of approximately $\frac{1}{3}$ of the total length of said tubular shaft (2), in such a way that the solid heavy metal bar (3) reaches: in one case, the lower end of the tubular shaft (2), being level with the same; in another case said end exceeding a small portion and in a further case, it is the tubular body of the tubular shaft (2) which exceeds the solid heavy metal bar (3) in a small portion (2a), this portion of the tubular shaft (2) remaining hollow inside.
 5. "Golf club for teaching or learning golf" according to claim 3, the portion (20a) of the end of the tubular shaft (2) which exceeds the solid heavy metal bar (3) **CHARACTERISED in that** it does not require any glue inside.
 6. "Golf club for teaching or learning golf" according to claim 1, the tubular shaft (2) made of fibreglass or plastic being **CHARACTERISED in that** it is optionally covered or wrapped with a cover, shell or sleeve (4) made of soft material such as rubber or latex which is very close fitting or tight fitting to the body of said tubular shaft (2).
 7. "Golf club for teaching or learning golf" according to claim 1, the press-fitting of the tubular shaft (2) to the club head (9), (12), (16) and (20) being **CHARACTERISED in that** it ensures, by means of incorporating an extra strong glue or adhesive substance (8) which is applied to the area in which this bar comes into contact with the inside of the hosel (90); (13), (16a) and (25) and/or the club head (9), (12), (16) and (20), prior to fitting it definitively, thus reinforcing it and increasing the level of final adhesion.
 8. "Golf club for teaching or learning golf" according to claim 2, the club head (9) made of lightweight plastic material reinforced by a special, traditional irregular ovoid design, being **CHARACTERISED in that** the vertex of the heel end, which is smaller in radius than the other toe end, projects a tubular hosel (90) upwards towards said end in order to fit and fix the lower tubular end of the tubular shaft (2); the hosel (90) consists of internal vertical nerves (30), which are tangent to said hosel (90), as male bayonet mounting means with the tubular shaft (2), which has lateral openings (5) on its lower end, which fit in said nerves (30) and the club head (9) has longitudinal grooves (10) in the sweet spot; a thick reinforcement nerve (11) in the back side and on the leading edge, occupying a little bit more than $\frac{1}{3}$ of its height and decreasing in projection towards said leading edge; it has a loft angle at preferably 46° in relation to the horizontal axle.
 9. "Golf club for teaching or learning golf" according to claim 2, the club head (12) formed by a rigid paddle of semi compact material such as a mass of polyurethane covered by a uniform and compact layer, **CHARACTERISED in that** the heel end of the vertex, which is smaller in radius than the other toe end, projects a tubular hosel (13) upwards, protruding in a tubular form, with a lie angle at preferably 63° in relation to the horizontal axle, in which the end of the tubular shaft (2) is fixed and press-fitted in its mass with its solid heavy metal bar (3), level with the lower end of the tubular shaft (2) or with a portion (31) of said solid heavy metal bar (3), said lower end of the tubular shaft (2) protruding slightly, penetrated through the hosel to the connection with the body of the club head (12).
 10. "Golf club for teaching or learning golf" according to claims 2 and 9, the club head (12) **CHARACTER-**

ISED in that it is likewise reinforced by a special traditional ovoid design with a straight top edge (12a) and inward arching leading edge (12b) with the sole (15) being thicker than the top edge (12a) and the back side (14) forming a concentric INPUT plane (14a) defined by a flange with an unequal profile, its front face presenting longitudinal grooves in the sweet spot (10a) and a loft angle at preferably 46° in relation to the vertical axle.

11. "Golf club for teaching or learning golf" according to claim 2, the club head (16) formed by a rigid paddle of semi compact material such as a mass of polyurethane covered by a uniform and compact layer, likewise reinforced by a special oblong design, **CHARACTERISED by** a heel end (19) which is lesser in radius than the other toe end (19a) and a hosel (16a) which protrudes, is eccentric and ascends in the form of a prism with an axial reinforcement (17) in order to fix and press-fit said lower end of the tubular shaft (2) to its solid heavy metal bar (3), the latter being fixed level with the lower end of the tubular shaft (2) or with a portion of said solid bar (32), exceeding the lower end of the tubular shaft (2), in both cases embedded down to the connection with the body or mass of the club head (16).
12. "Golf club for teaching or learning golf" according to claims 2 and 11, the club head (16) **CHARACTERISED in that** it has a loft angle at preferably 0° in relation to the vertical axle and a lie angle at preferably 71° on the horizontal axle.
13. "Golf club for teaching or learning golf" according to claim 2, the club head (20) made of lightweight material, such as plastic, reinforced by a special oblong design and a hollow body formed in such a way that, divided into two almost symmetrical parts, it is **CHARACTERISED in that** one part forms a lid (22) and the other part forms the box (21), both units being joined together by means of dovetail joints comprising female (23) and male (24) means, the box (21) having a hosel (25) in order to be attached to the tubular shaft (2); said tubular hosel (25) is ascending and in an eccentric position towards an end (heel) and is inclined with a lie angle at preferably 71° in relation to the horizontal axle.
14. "Golf club for teaching or learning golf" according to claims 2 and 13, the hosel (25) **CHARACTERISED in that** it extends a compartment (26) within the box (21), comprised of just two parallel walls which are different in height, where the tubular shaft (2) enters with its solid heavy metal bar (3) fixed inside is level with the end of said tubular shaft (2) or said solid heavy metal bar (3) even reaching the limit of the fastener (7) or exceeding said shaft (2).

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15. "Golf club for teaching or learning golf" according to claims 2, 13 and 14, said hosel (25) **CHARACTERISED in that** it has internal vertical nerves (30) which are tangent to said hosel (25), as male bayonet mounting means of the tubular shaft (2), which has respective lateral and tangential female means (5) at the lower end, which fit in said nerves (30).
16. "Golf club for teaching or learning golf" according to claims 2, 13, 14 and 15, optionally inside said ensemble (20) (box 21/lid 22) **CHARACTERISED in that** it is filled with a polyurethane foam.
17. "Golf club for teaching or learning golf" according to claims 2, 13, 14 and 15 the hosel (25) of said club head (20) **CHARACTERISED in that** it has a loft angle at preferably 0° in relation to the vertical axle and a lie angle at preferably 71° on the horizontal axle.
18. "Golf club for teaching or learning golf" according to claims 1 and 5, the portion (20a) of the tubular shaft (2) which enters the compartment (26) of the hosel (25) **CHARACTERISED in that** it has two opposing drill holes (6) between which a fastener (7) is mounted, which is fixed in a female flanged hub (23a) located in the extension (26), thus preventing the tubular shaft (2) from being taken out by pulling it.
19. "Golf club for teaching or learning golf" according to claims 2 and 13, the extension (26) or compartment of the hosel (25) inside the ensemble (20) **CHARACTERISED in that** it has reinforcements (28 and 28a) on its external side, which are equal in height, differ in length and are confluent with the vertices of the hosel (25) and the box (21).
20. "Golf club for teaching or learning golf" according to claims 2 and 13, the box (21) **CHARACTERISED in that** it has at least two female members (23) in order to fit the lid (22) by means of dovetail joints, which has another two complementary male members (24), an internally fitting peripheral flange (29) and a semi-circular neckline in order to hold the hosel (25) in the mounting with the tubular shaft (2).

Fig. 1.

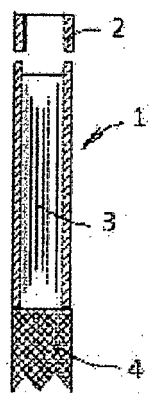


Fig. 2.

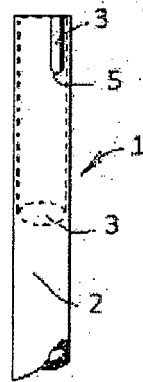


Fig. 4.

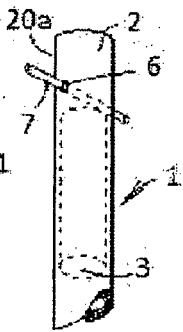


Fig 4.1.

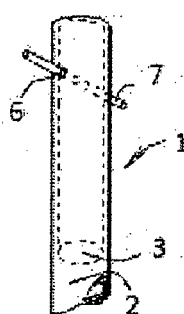


Fig. 3.

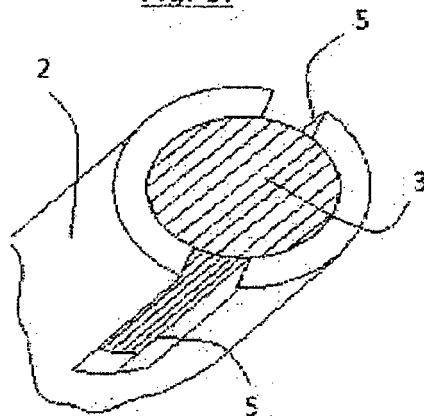


Fig. 5.

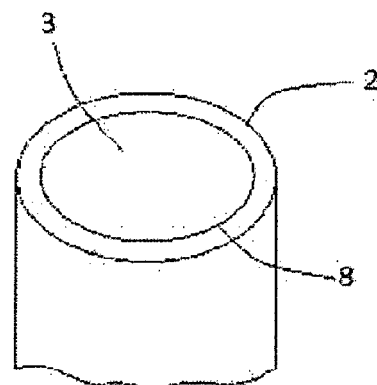


Fig. 3.1.

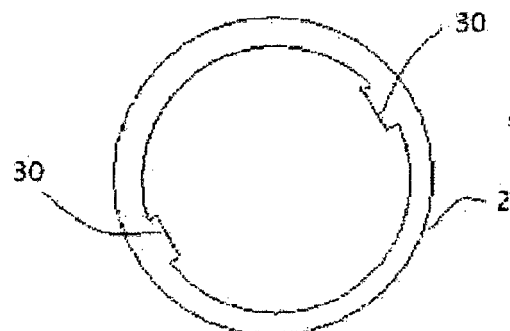


Fig. 6.

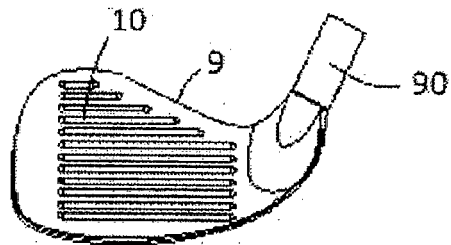


Fig. 7.

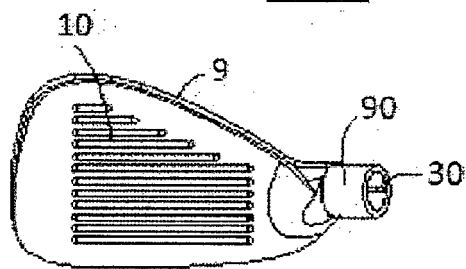


Fig. 8.

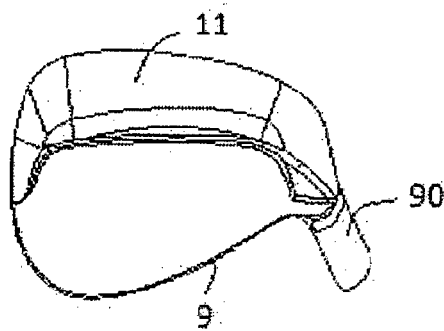


Fig. 9.

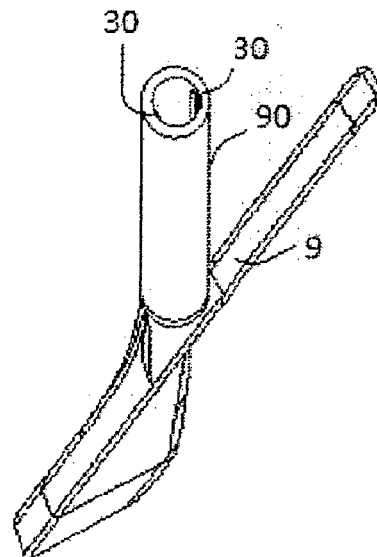


Fig. 10.

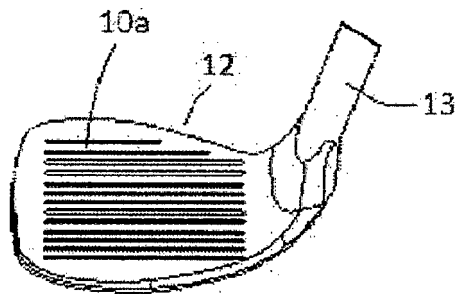


Fig. 12.

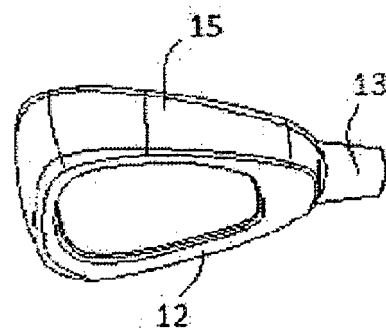


Fig. 11.

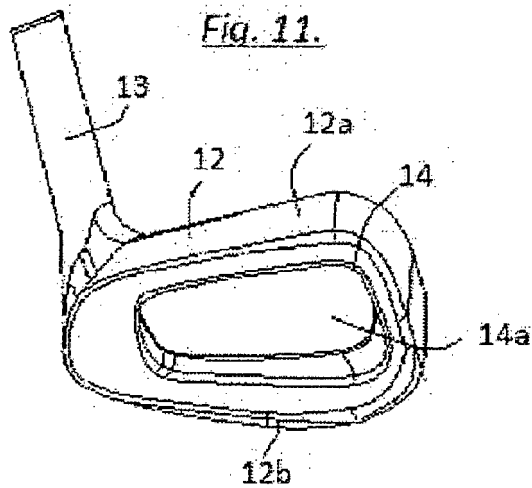


Fig. 14.

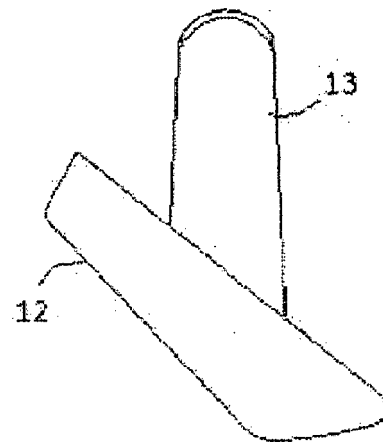


Fig. 13.

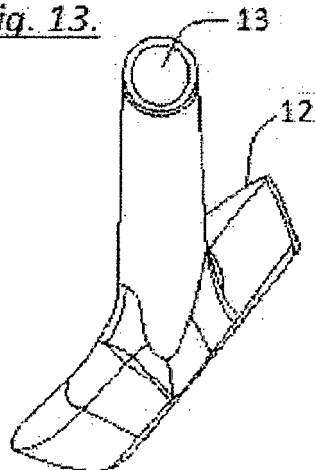


Fig. 15.

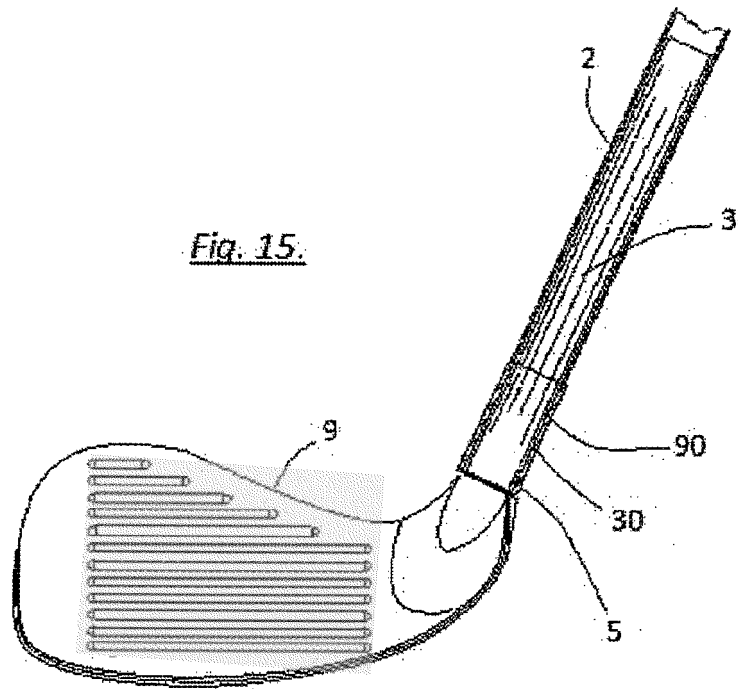


Fig. 16.

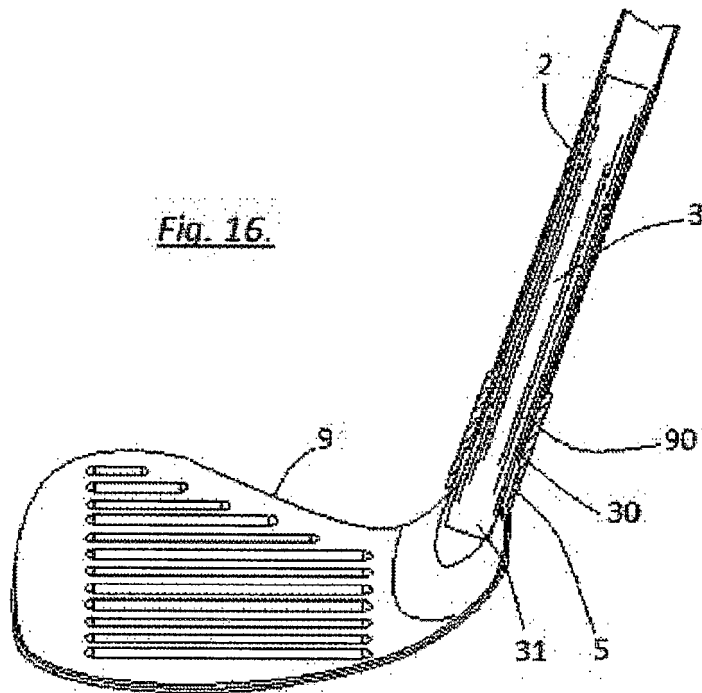


Fig. 17.

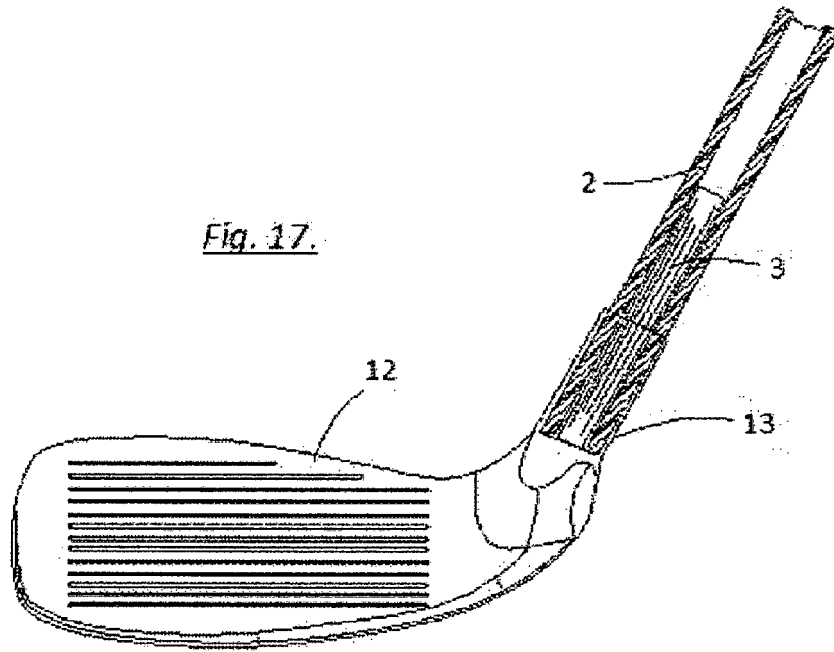


Fig. 17.1.

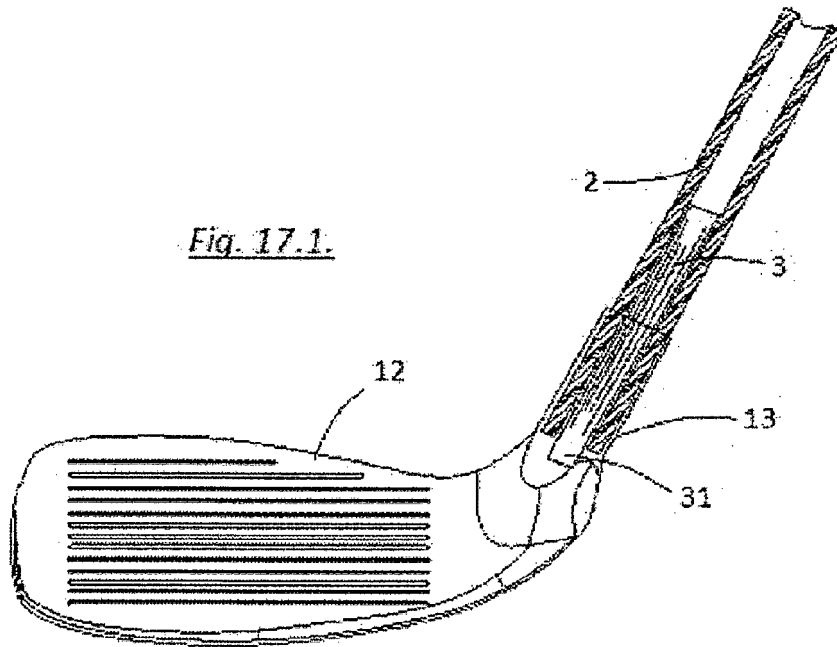


Fig. 18.

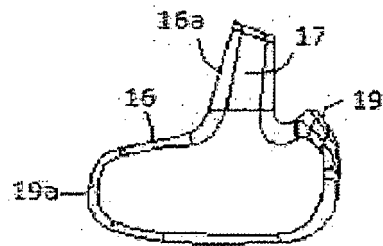


Fig. 20.

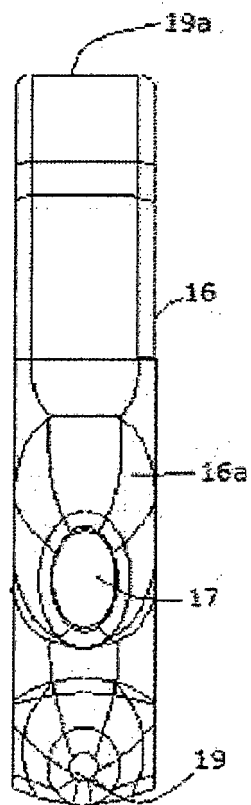


Fig. 21.

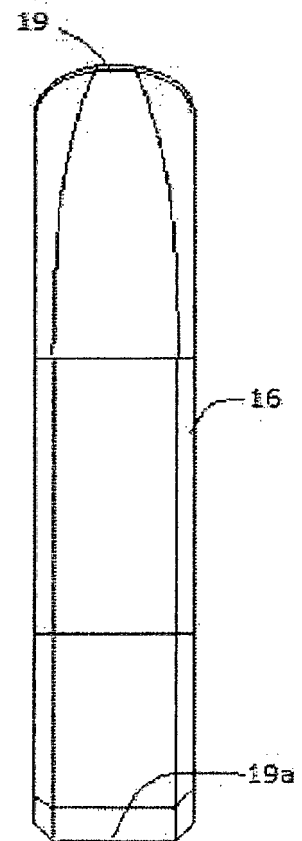


Fig. 19.

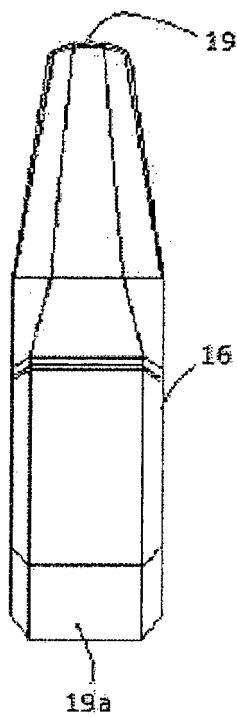


Fig. 21.1.

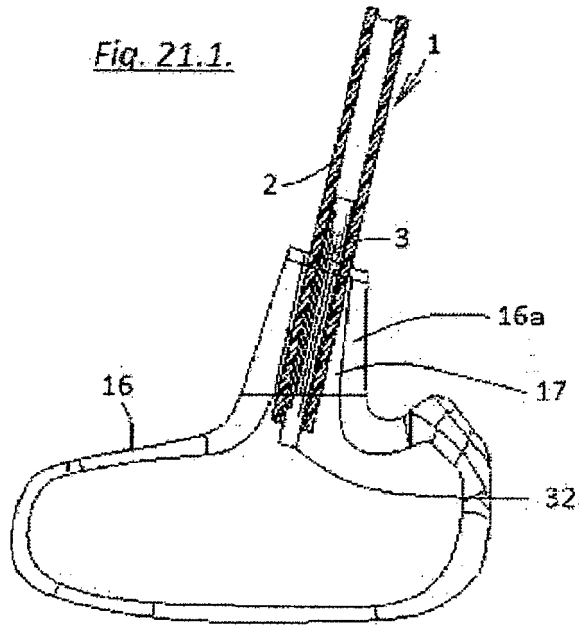


Fig. 21.2

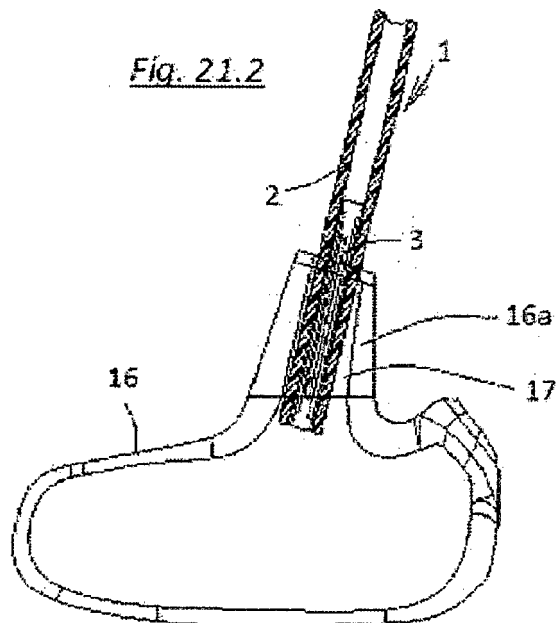


Fig. 22.

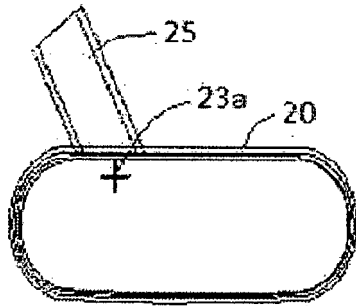


Fig. 23.

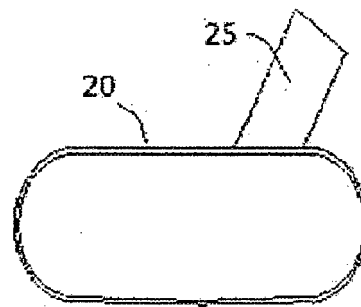


Fig. 24.

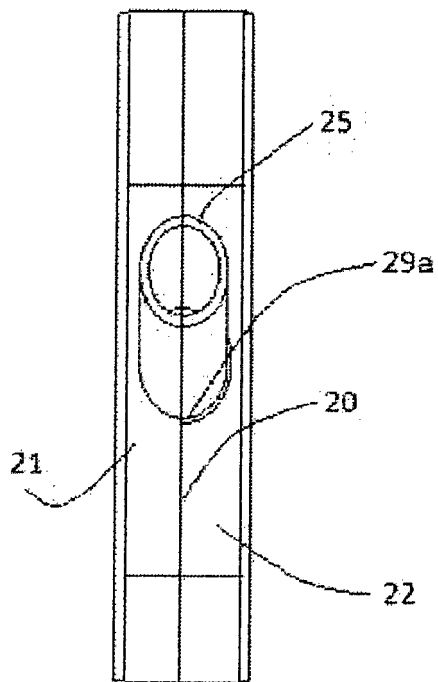


Fig. 25.

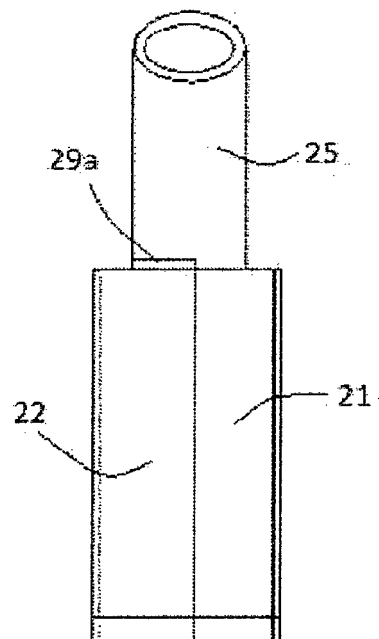


Fig. 26.

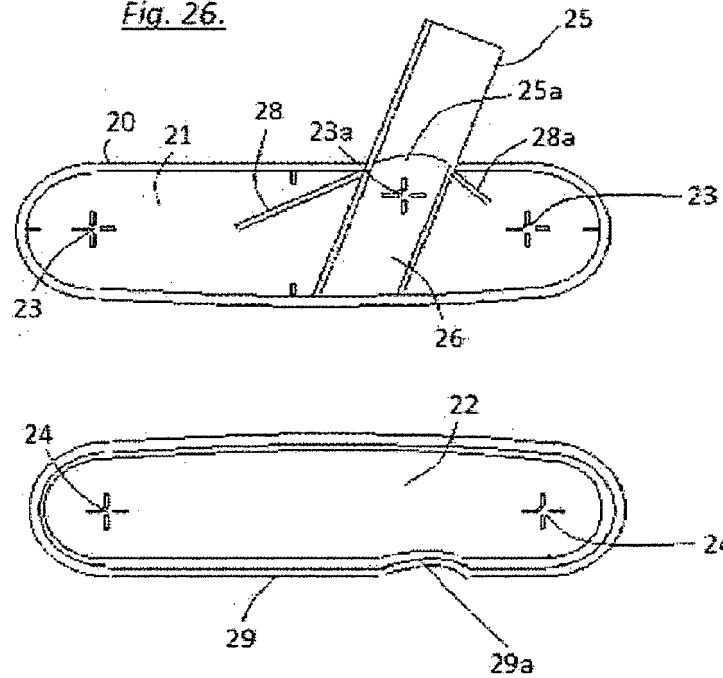


Fig. 27.

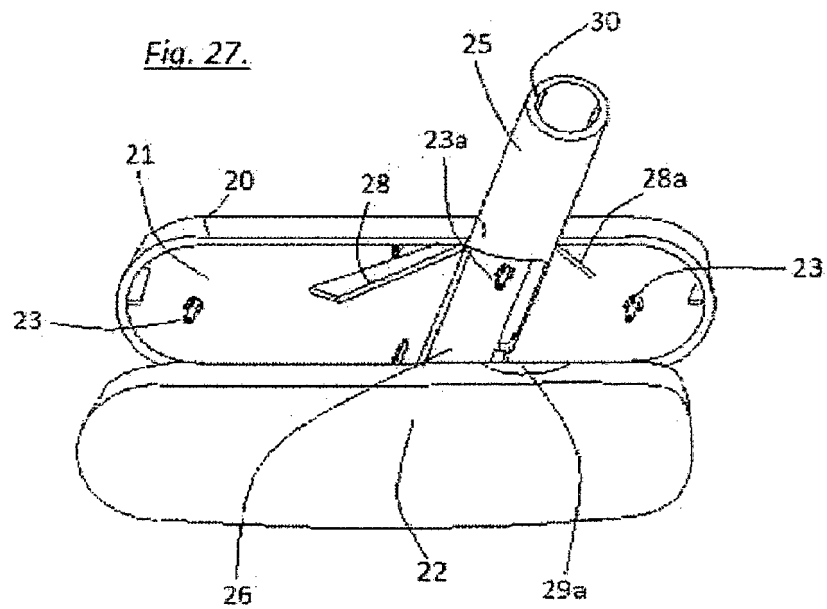


Fig. 28.

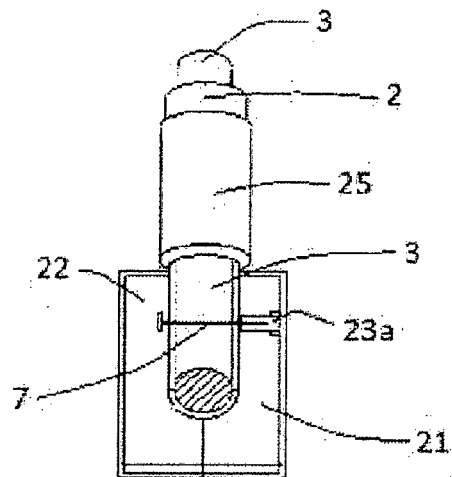


Fig. 29.

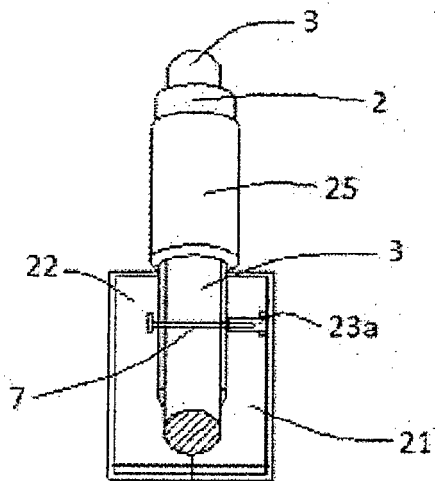
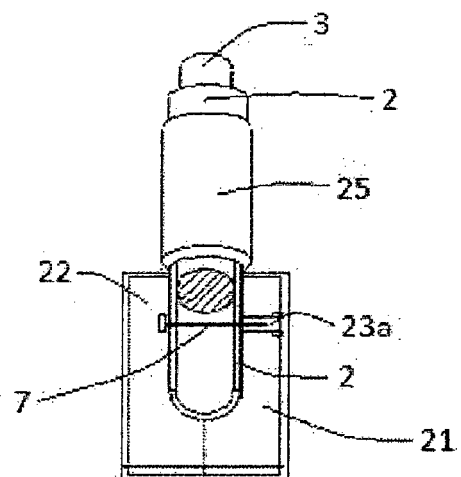


Fig. 30.



INTERNATIONAL SEARCH REPORT

International application No.
PCT/ES2012/070351

A. CLASSIFICATION OF SUBJECT MATTER

See extra sheet

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)
A63B

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

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

EPODOC, INVENES, WPI

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6139444 A (RENARD PHILIPPE ET AL.) 31/10/2000, description; figures 1 - 6.	1,3-7
Y		2,8-20
X	KR 20070113425 A (DONG KWANG CO LTD) 29/11/2007, description; images.	1,3-7
Y	US 4326716 A (LACOSTE FRANCOIS R) 27/04/1982, abstract; figure 2,	2,8
Y	US 5244211 A (LUKASIEWICZ ROBERT F) 14/09/1993, abstract;	2,9-12
A		16
X	GB 1214254 A (ANTHONY LUSIEN CARLINO) 02/12/1970, Figures & Abstract from DataBase EPODOC. Retrieved from EPOQUE; AN GB-4168769-A;	2,13-20

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

☒ See patent family annex.

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Date of the actual completion of the international search
06/07/2012

(26/07/2012)

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/ES2012/070351

C (continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of documents, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	GB 332354 A (THOMAS TODRICK) 24/07/1930, Abstract from DataBase EPODOC. Retrieved of EPOQUE; AN GB-1792729-A	8,15
A	GB 191230050 A (SCOTT EDWIN HAMILTON WINCKWORT) 24/12/1913, figures.	18
A	JP 2005006998 A (KAMIYAMA GOJI) 13/01/2005, figures & Abstract from DataBase EPODOC. Retrieved from EPOQUE; AN JP-2003175748-A	13-20

Form PCT/ISA/210 (continuation of second sheet) (July 2009)

INTERNATIONAL SEARCH REPORT

International application No.

PCT/ES2012/070351

Information on patent family members

Patent document cited in the search report	Publication date	Patent family member(s)	Publication date
US6139444 A	31.10.2000	NONE	
-----	-----	-----	-----
KR20070113425 A	29.11.2007	NONE	
-----	-----	-----	-----
US4326716 A	27.04.1982	NONE	
-----	-----	-----	-----
US5244211 A	14.09.1993	WO9319818 A	14.10.1993
-----	-----	JPH06508291 A	22.09.1994
-----	-----	-----	-----
GB1214254 A	02.12.1970	JP50021895 B	26.07.1975
-----	-----	-----	-----
GB332354 A	24.07.1930	NONE	
-----	-----	-----	-----
GB191230050 A	24.12.1913	NONE	
-----	-----	-----	-----
JP2005006998 A	13.01.2005	NONE	
-----	-----	-----	-----

Form PCT/ISA/210 (patent family annex) (July 2009)

INTERNATIONAL SEARCH REPORT

International application No.
PCT/ES2012/070351

CLASSIFICATION OF SUBJECT MATTER

A63B53/00 (2006.01)
A63B53/04 (2006.01)
A63B53/10 (2006.01)

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- US 5335914 A [0006]
- US 5672120 A [0006]
- US 7713143 B2 [0006]
- US 20030176235 A1 [0006]
- US 20080318707 A1 [0006]
- US 5244211 A1 [0006]
- US 4988104 A1 [0006]