



US 20020194668A1

(19) **United States**

(12) **Patent Application Publication**

**Kwon**

(10) **Pub. No.: US 2002/0194668 A1**

(43) **Pub. Date: Dec. 26, 2002**

(54) **FUNCTIONAL GOLF GLOVES**

(57)

## **ABSTRACT**

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(21) Appl. No.: **10/154,310**

(22) Filed: **May 23, 2002**

(30) **Foreign Application Priority Data**

May 24, 2001 (KR) ..... 20-2001-0015276

### **Publication Classification**

(51) **Int. Cl.<sup>7</sup> A41D 19/00**

(52) **U.S. Cl. 2/161.4**

The present invention relates to functional golf gloves, which allow a golfer to grip the golf club with appropriate pressure with hands. The present invention has a frontal side and a back side, which comprises a glove part equipped with a cover at the portion of the back of the hand of the back side; a pressure recognition part, which recognizes a certain level of pressure or higher as applied to the upper portion of the palm region of the frontal side of said glove part, wherein said pressure recognition part is inserted between the inner and outer skins of the upper portion of the palm region of the frontal side of the glove part, which comprises an elastic pad having holes at a fixed interval; conductors passing through said holes, which are placed respectively at the upper and lower surfaces of said elastic pad; and a main case, installed into said cover at the back side of said glove part, inside of which has a power source connected to said conductors, and which is equipped with an on-off switch and a means of displaying, respectively connected to said power source.

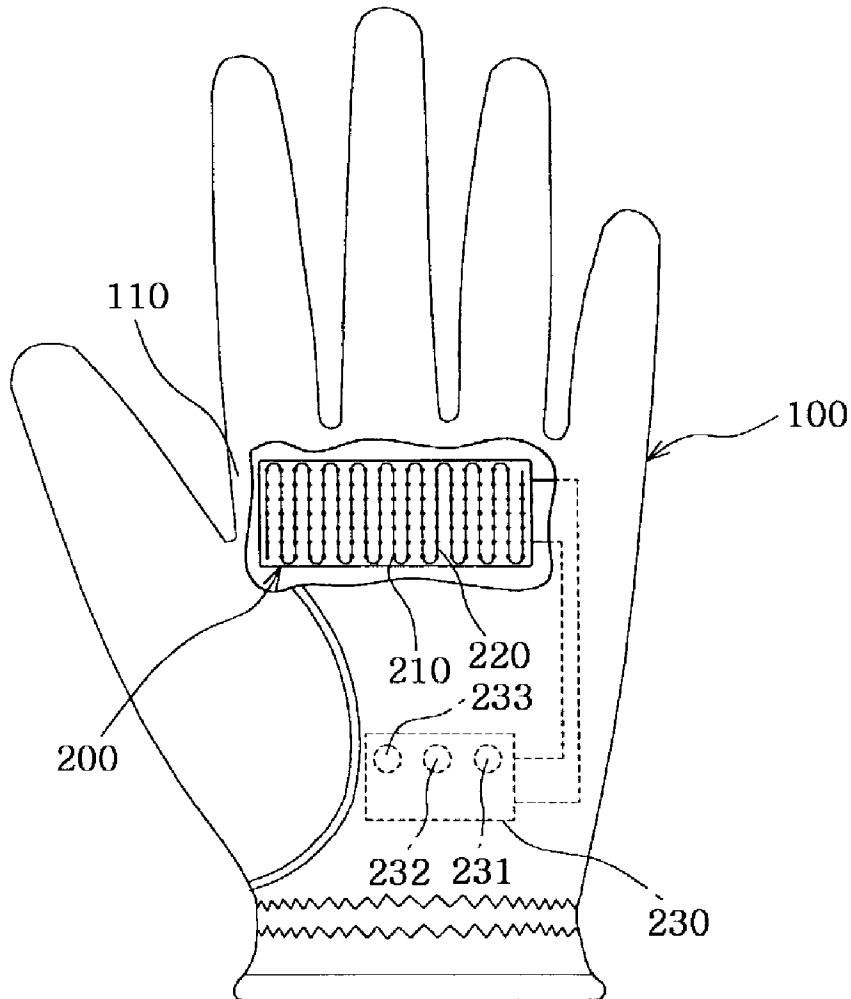


Fig.1

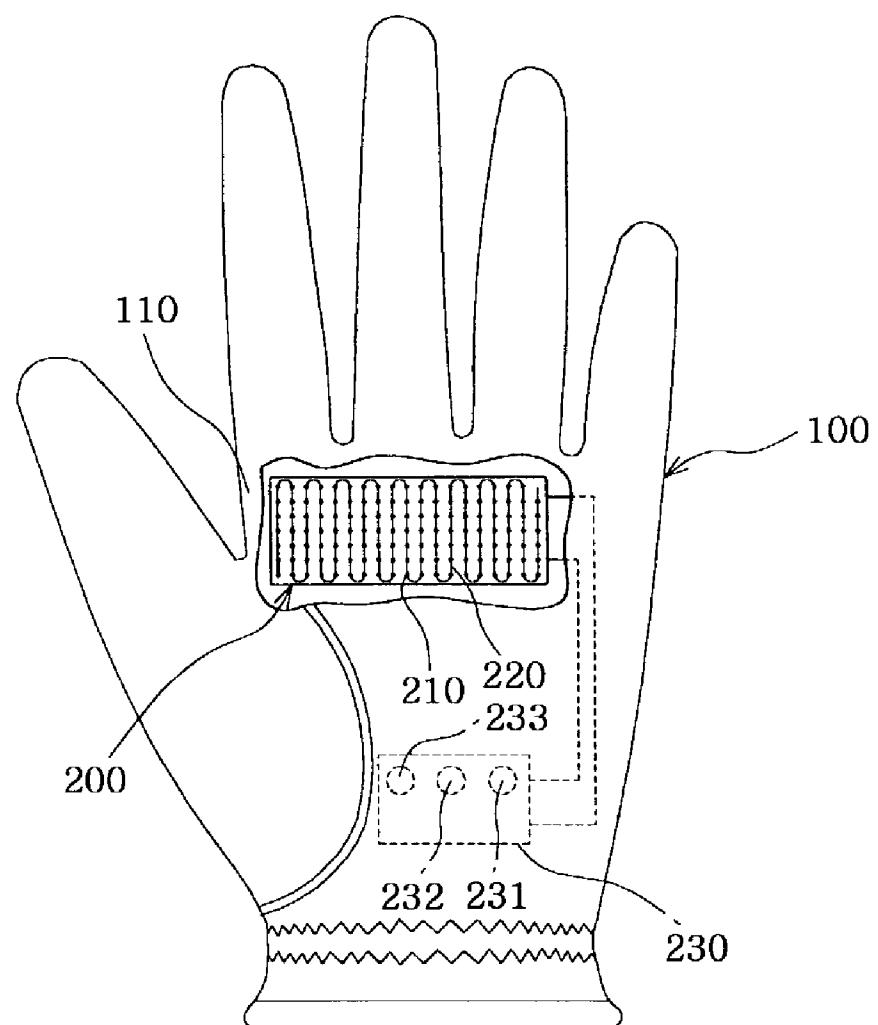


Fig.2

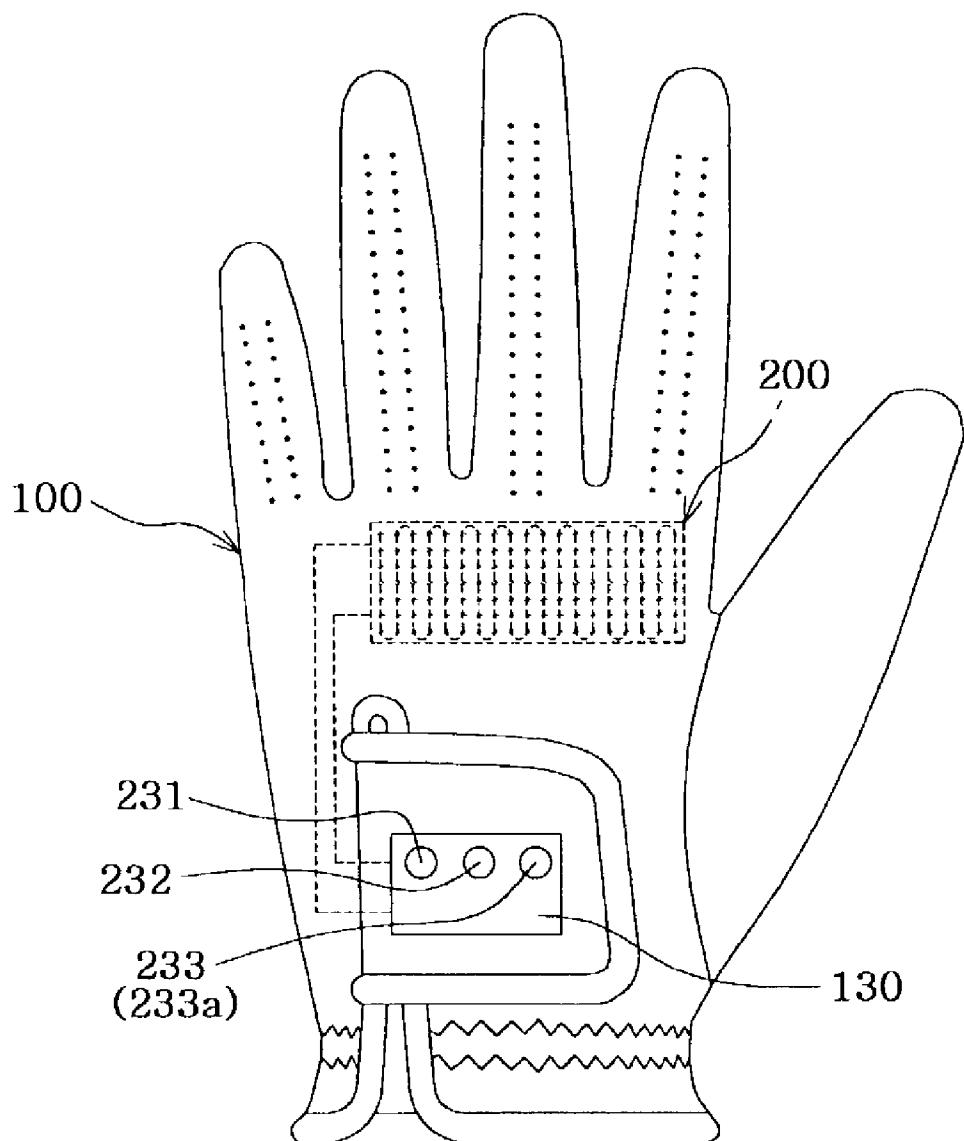


Fig.3

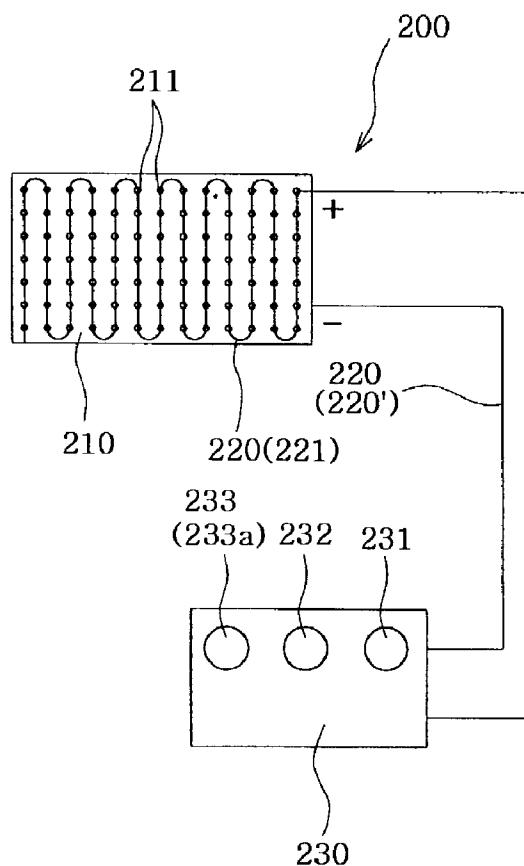


Fig.4

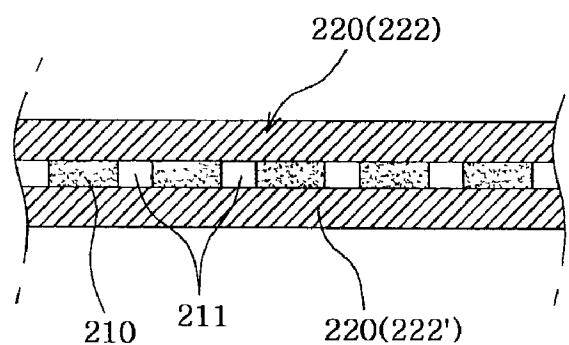


Fig.5

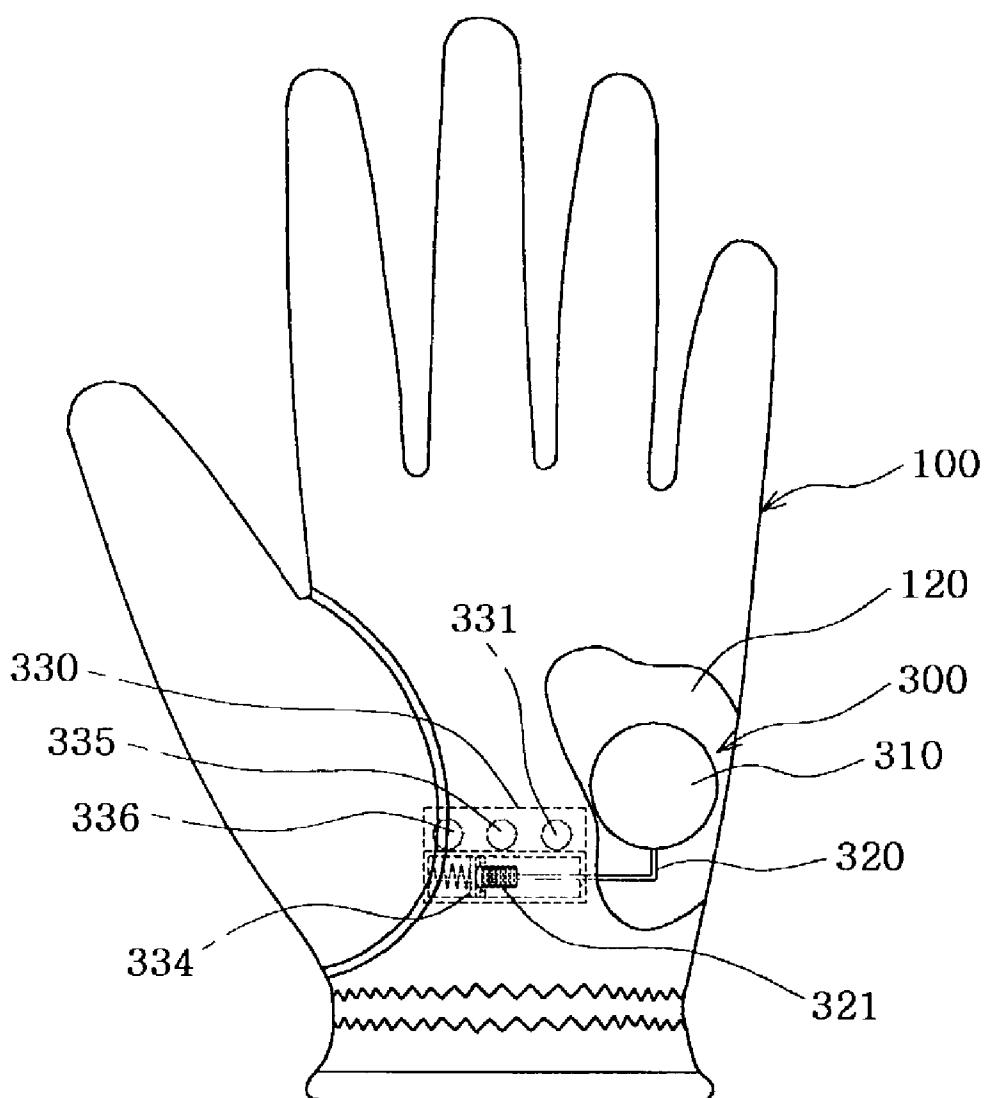


Fig.6

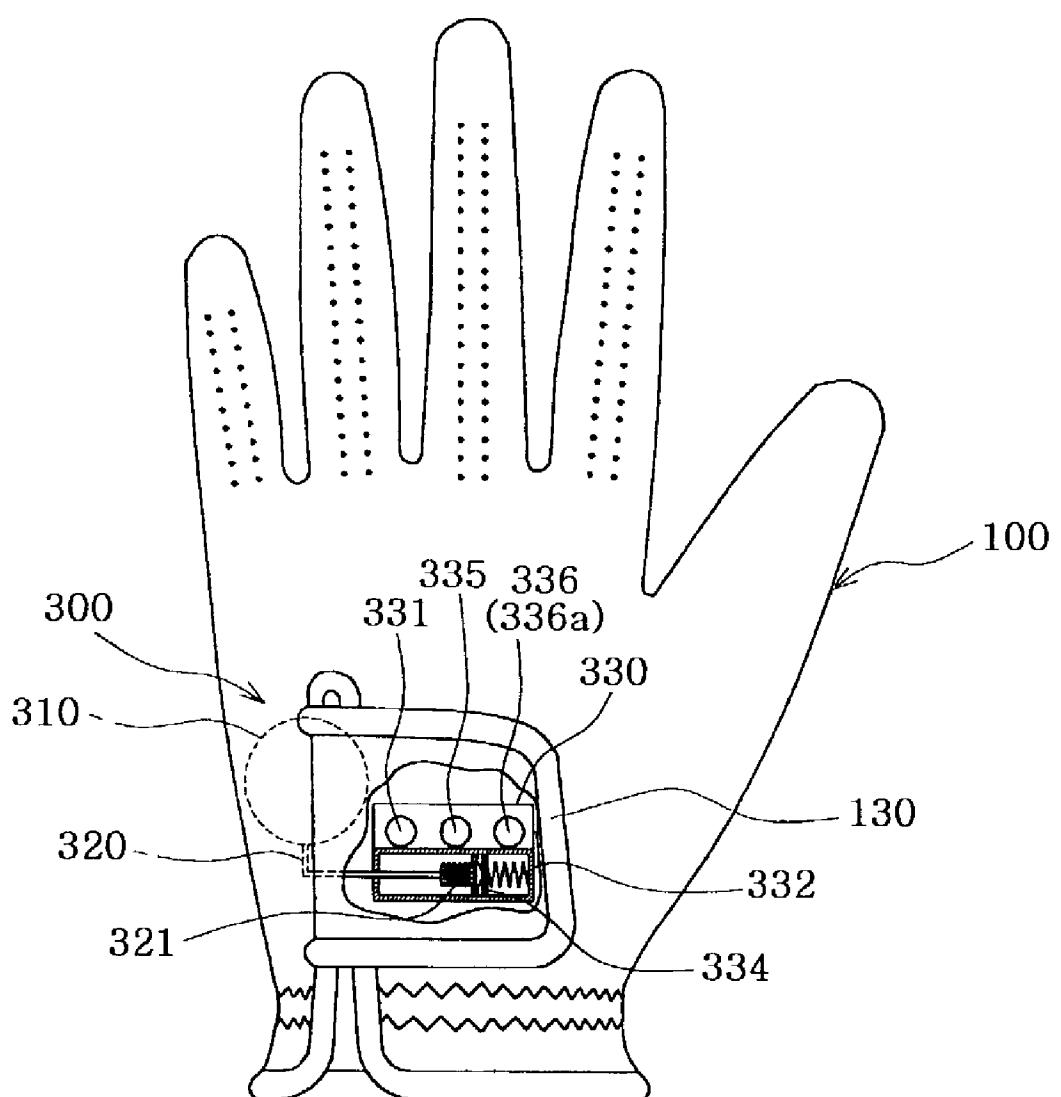


Fig.7

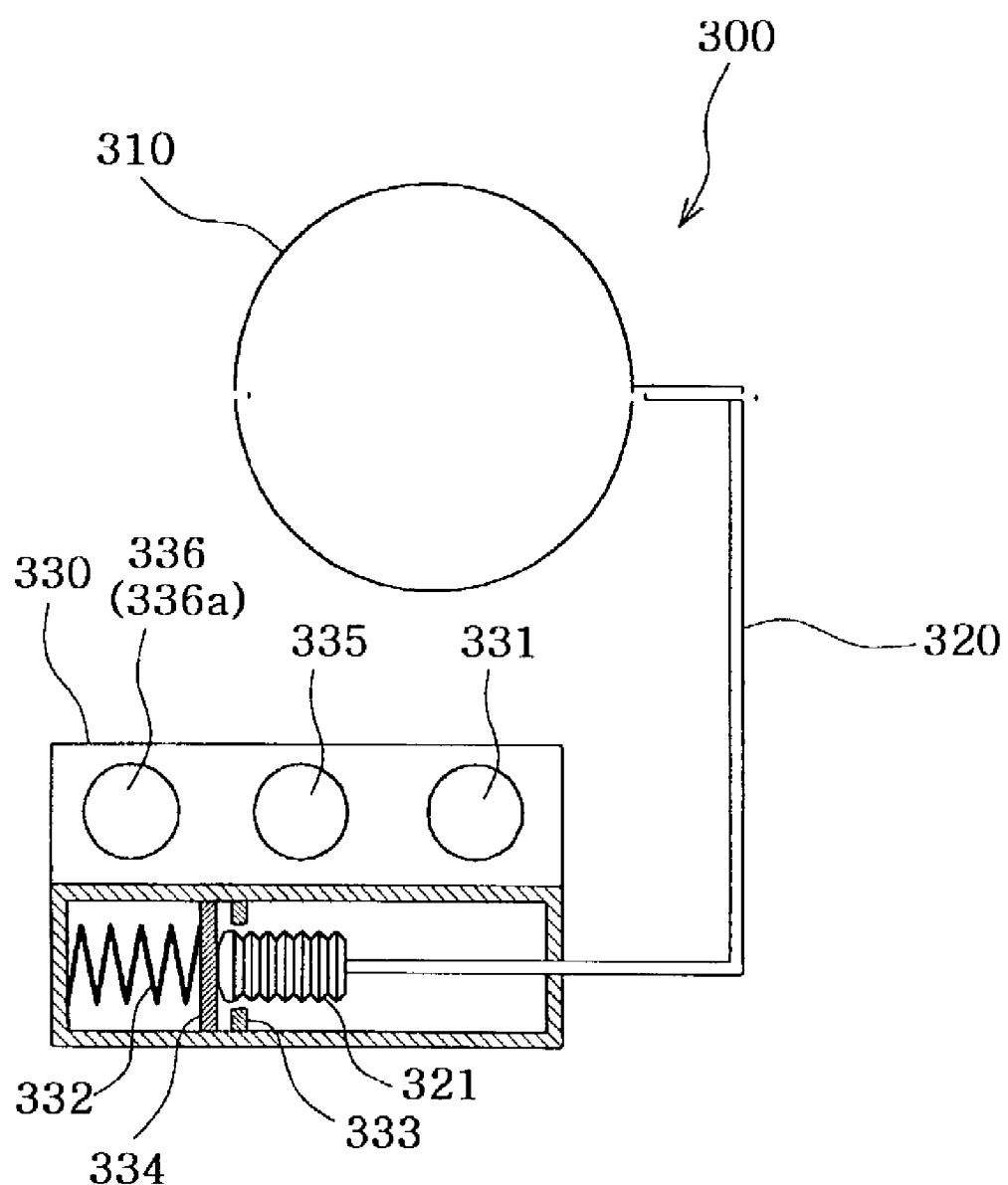


Fig.8

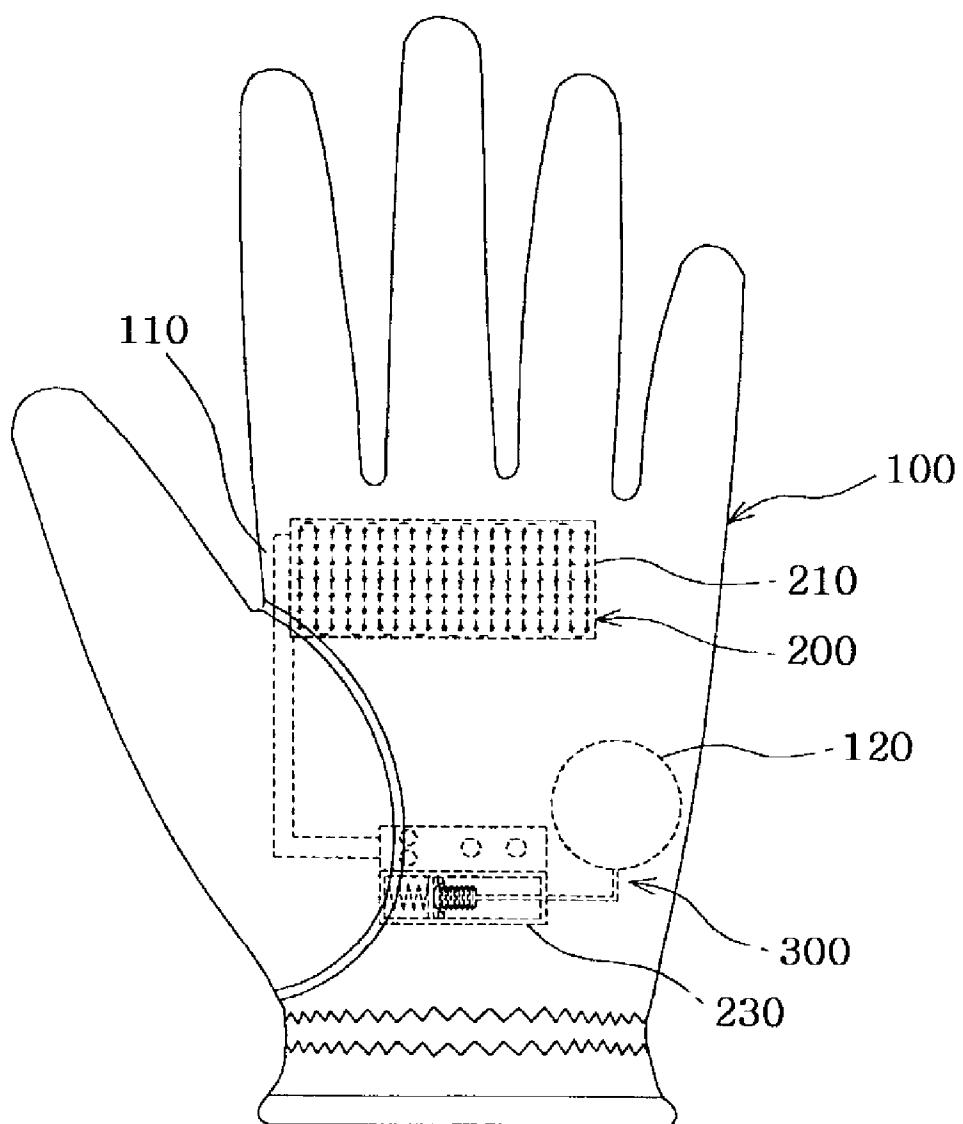


Fig.9

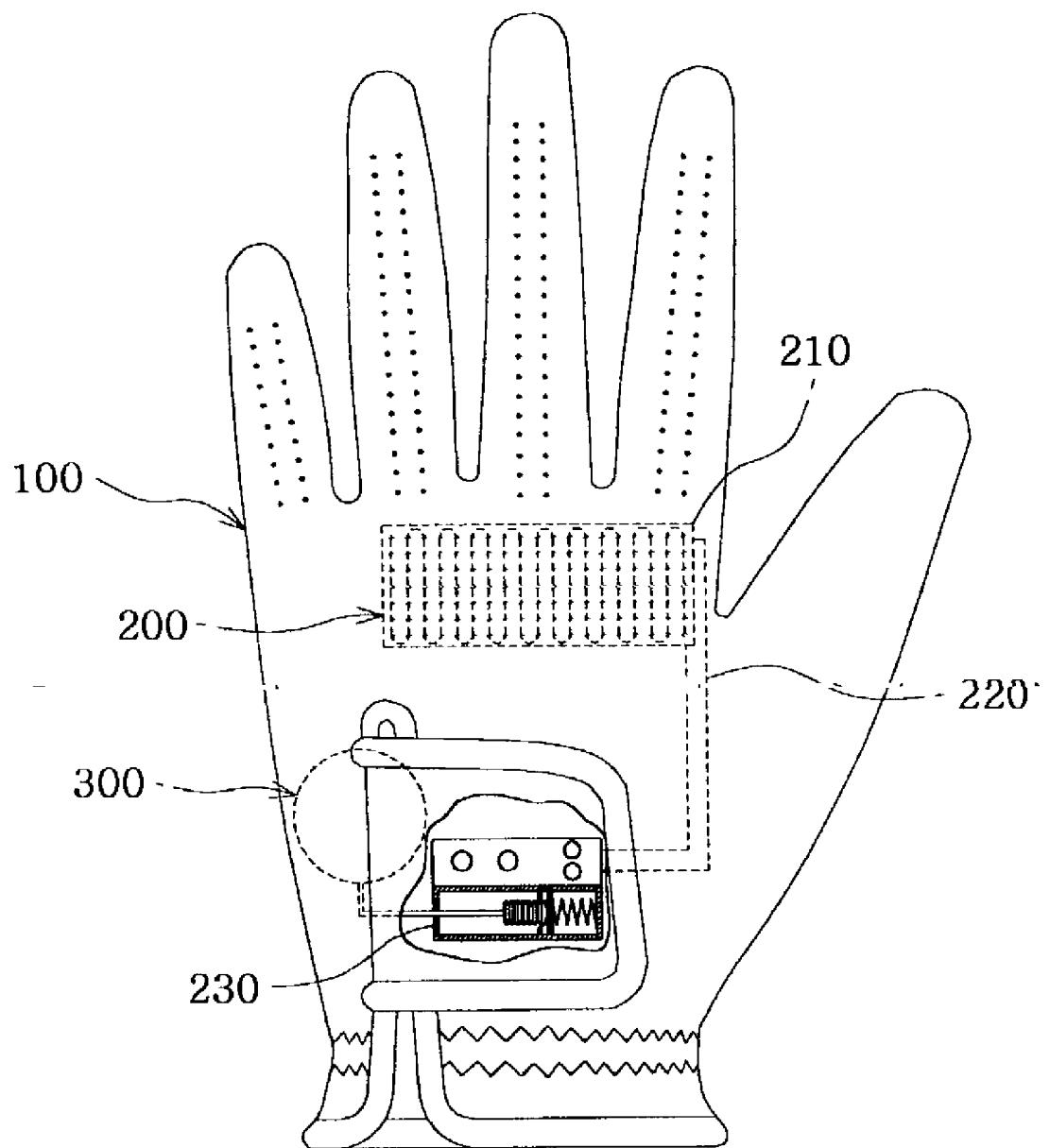
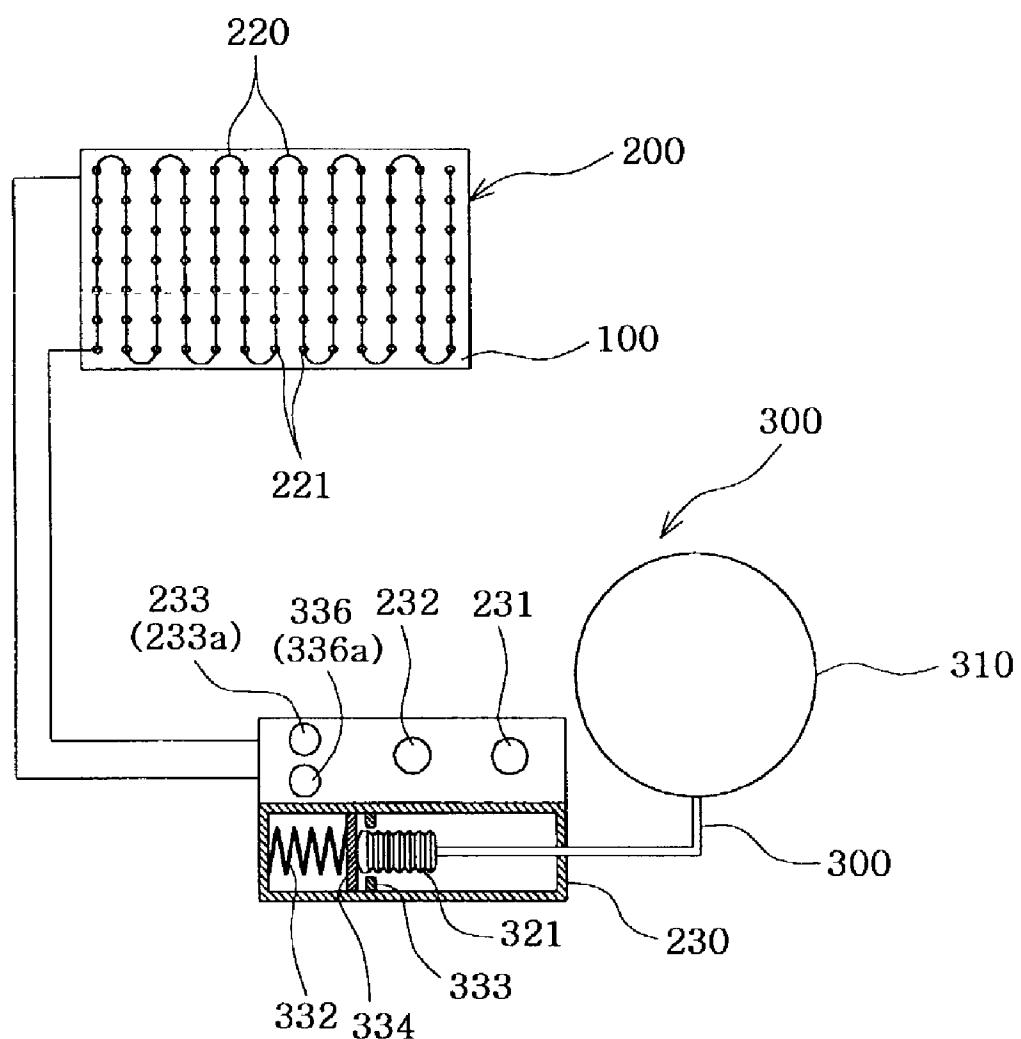


Fig.10



## FUNCTIONAL GOLF GLOVES

### CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] The present invention claims priority from Korean Patent Application No. 20-2001-0015276.

### FIELD OF THE INVENTION

[0002] The present invention relates to golf gloves, or more particularly to functional golf gloves, which allow a golfer to grip the golf club with suitable pressure by hands.

### BACKGROUND OF THE INVENTION

[0003] All golfers wish to hit the golf ball farther to an accurate spot. However, to do this, a golfer must first learn to do a smooth swing while accurately gripping the golf club at the time of set-up (address), which is basic to the sports. To properly learn this type of postures, one must be well acquainted with various techniques basic to golf.

[0004] As one of the basic techniques of golf, it is necessary to swing the golf club while gripping it with appropriate pressure with varying degrees according to the region of the palm of the hand. In other words, it is necessary to lightly grip the golf club with the left-side portion of the palm including a thumb, and with the inside portion of the palm including a little finger, it is necessary to grip the golf club with appropriate pressure to such a degree that the golf club does not slip through.

[0005] Nevertheless, from the psychological perspective of a golfer, in trying to hit the golf ball farther, the golfer unconsciously tends to grip the golf club tighter than it is necessary at the point of a back or down swing. Consequently, at the top of the back swing, a gap between the palm and the golf club may occur. By way of tight gripping, the muscles become stiffen, and the swinging speed is reduced thereby. In this situation, one cannot smoothly carry out a back swing and an impact. In the end, a proper driving distance cannot be achieved, and an accurate drop at a target point becomes unobtainable.

[0006] All golfers basically have the same experience of trying to learn the feel of a grip. During the first golf lesson, an instructor usually explains the feel of the grip with appropriate pressure with the left-side region of the palm by comparing it to the feel of softly holding a wrist of an 100-day old baby; to the feel of softly holding the neck of a chic; or to the feel of softly holding an opened toothpaste. However, the feel is vague, and from the perspective of beginners, it is rather difficult to learn.

[0007] Accordingly, to increase the driving distance of a golf ball, it is preferable to grip the golf club with a left-side portion of the palm with pressure of approximately 20 g/cm<sup>2</sup> or less. It is also preferable to grip the golf club with appropriate pressure with the inside portion of the palm so that the palm does not separate from the golf club. However, in the past, it was necessary to learn about appropriate pressure by feels only.

### SUMMARY OF THE INVENTION

[0008] The objective of the present invention lies in providing functional golf gloves, which allow a golfer to

exercise proper swinging while lightly gripping the golf club with the left-side portion of the palm including a thumb.

[0009] Another objective of the present invention lies in providing functional golf gloves, which allow a golfer to exercise proper swinging without separation of the inside portion of the palm including a little finger from the golf club.

[0010] In order to achieve the aforementioned technical objectives, the functional golf glove of the present invention has a frontal side and a back side, which comprises a glove part, having a cover at the back portion of the hand of said back side, and a pressure recognition part which can recognize a certain level of pressure or higher, which is applied to the upper portion of the palm of said glove part.

[0011] The pressure recognition part comprises an elastic pad, having holes at a constant interval, which is inserted between the outer and inner skins at the upper portion of the palm region of the frontal side of the glove part; conductors, respectively placed onto the upper and lower surfaces of said elastic pad, which pass through said holes; and a main case, installed into the cover at the back side of said glove, inside of which is equipped with a power source connected to said conductor, an on-off switch, and a means of displaying, respectively connected to said power source.

[0012] The aforementioned conductors comprise electric wires or electrode plates.

[0013] The aforementioned means of displaying comprises a lamp, which emits light.

[0014] Moreover, in order to achieve the aforementioned technical objectives, the functional golf glove of the present invention has a frontal side and a back side, which comprises a glove part, having a cover at the part of the back of the hand of the back side, and a low-pressure recognition part which can recognize a certain level of pressure or lower, which is applied to the lower portion of the palm of said glove part.

[0015] The aforementioned low-pressure recognition part is inserted into the lower side of the palm of the frontal side of the glove part, inside of which comprises a tube filled with fluid materials, and a hose connected to said tube, the end of which is attached to a bellows capable of contraction and expansion; and comprises a main case with an on-off switch conned to said power source and a means of displaying, installed into the cover at the back side of said glove part, wherein a contact plate is grounded or shorted by way of elasticity of a spring to the contact point according to contraction and expansion of said bellows inserted therein, in which said contact point is connected to the power source and attached to the inner wall thereof.

[0016] Here, the aforementioned tube is characterized by installing it in a slanted manner to the lower inside portion of the palm region of the frontal side of the glove part.

[0017] The aforementioned means of displaying comprises a lamp, which emits light.

[0018] Moreover, in order to achieve the aforementioned technical objectives, the functional golf glove of the present invention has a frontal side and a back side, which comprises a glove part, having a cover at the back portion of the hand of said back side; a pressure recognition part which can

recognize a certain level of pressure or higher, which is applied to the upper portion of the palm of said glove part; and a low-pressure recognition part which can recognize a certain level of pressure or lower, which is applied to the lower portion of the palm of said glove part.

[0019] The aforementioned pressure recognition part comprises an elastic pad, having holes at a constant interval, which is inserted between the outer and inner skins at the upper portion of the palm region of the frontal side of the glove part; conductors, respectively placed onto the upper and lower surfaces of said elastic pad, which pass through said holes; and a main case, installed onto the cover at the back side of said glove, inside of which comprises a power source connected to said conductors, an on-off switch, and a means of displaying, respectively connected to said power source.

[0020] The aforementioned low-pressure recognition part comprises a tube filled with fluid therein, which is inserted into the lower side of the palm of the frontal side of the glove part; a hose connected to said tube, the end of which is attached to a bellows capable of contraction and expansion; and a contact plate, installed with a spring inside said case, which is grounded or shorted by way of elasticity of a spring to the contact point according to contraction and expansion of said bellows, in which said contact point is connected to the inner wall of said main case; and a means of displaying, installed to the surface of said main case, which connected to said power source.

#### BRIEF DESCRIPTION OF DRAWINGS

[0021] FIG. 1 is a plain view of the frontal side of a functional golf glove, partially sectional, according to Example 1 of the present invention.

[0022] FIG. 2 is a plain view of the back side of a functional golf glove according to Example 1 of the present invention.

[0023] FIG. 3 is a detailed drawing of a pressure recognition part according to Example 1 of the present invention.

[0024] FIG. 4 is an enlarged sectional view, which shows another embodiment of conductors according to Example 1 of the present invention.

[0025] FIG. 5 is a plain view of the frontal side of a functional golf glove, partially sectional, according to Example 2 of the present invention.

[0026] FIG. 6 is a plain view of the back side of a functional golf glove, partially sectional, according to Example 2 of the present invention.

[0027] FIG. 7 is a detailed drawing of a low-pressure recognition part according to Example 2 of the present invention.

[0028] FIG. 8 is a plain view of the frontal side of a functional golf glove according to Example 3 of the present invention.

[0029] FIG. 9 is a plain view of the back side of a functional golf glove, partially sectional, according to Example 3 of the present invention.

[0030] FIG. 10 is a detailed drawing of a pressure recognition part and a low-pressure recognition part according to Example 3 of the present invention.

#### DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0031] Below, the construction of the functional glove according to the present invention is described in detail with references to the attached drawings:

[0032] FIGS. 1-3 show Example 1 of the present invention. FIG. 1 is a plain view of the frontal side of a functional golf glove, partially sectional, according to Example 1 of the present invention. FIG. 2 is a plain view of the back side of a functional golf glove according to Example 1 of the present invention. FIG. 3 is a detailed drawing of a pressure recognition part according to Example 1 of the present invention.

[0033] In Example 1, the functional golf glove of the present invention has a glove part 100 and a pressure recognition part 200 comprising an elastic pad 210, conductors 220, and a main case 230.

[0034] The glove part 100 is shaped in the form of a hand, which comprises a frontal side and a back side. The frontal side has inner and outer skins, for allowing insertion of an elastic pad 210. Moreover, the back side is partially sectioned into two parts, which allows a golfer to easily put on the gloves, while having a cover 130 with an attachable and detachable Velcro tape.

[0035] The elastic pad 210 is inserted between the inner and outer skins of the palm portion of the frontal side of the glove part 100 and has holes 211 at a certain interval. The elastic pad contracts or expands according to the pressure applied thereto while gripping a golf club with a hand. As for the materials for the pad, it can be made with rubber, silicone, sponge, or soft plastic, etc.

[0036] The location for installing the elastic pad 210 is the upper outside portion 110 of the palm region of the frontal side of the glove part 100. In other words, it is preferable to place the pad slanted toward the lower portion, directly below the portion of the index finger to the third-finger. Generally, a golfer needs to softly grip the golf club with the upper outside portion 110 of the palm region of the frontal side, including the portion of the thumb of the glove part, and accordingly, the elastic pad 210 is placed at said outside portion 110.

[0037] The conductors 220 are placed respectively at the upper and lower surfaces of the elastic pad 210. When the upper and lower conductors come in contact through the holes 211 on the pad 210, the current flows thereby, which results in displaying of the signals on the means of displaying 233.

[0038] In FIG. 3, the conductors 220 are of electric wires (221, 221'). In FIG. 4, the conductors 220 are of electrode plates (222, 222') having thin membranes. In particular, when electrode plates (222, 222') are used, the conductors 220 are not too problematic, but when electric wires (221, 221') are used, it is necessary to wire the holes 211 on the elastic pad 210. As such, by way of pressure with the hand, if the elastic pad 210 contracts, the anode wire 221 and the cathode wire 221' come in contact, thereby causing current flow.

[0039] The main case 230 is installed onto the lower side of the palm portion of the back side of the glove part 100, i.e., the upper side of the cover 130, which is attached and

detached thereto by means of a Velcro tape. In the main case, there is a power source 231, which is connected to the conductors 220, supplying current thereto. Moreover, there is an on-off switch 232 on the surface of the main case, which turns on and off the functional glove of the present invention. There is also a means of displaying 233, which displays signals when a golfer grips the golf club with a certain level of pressure or higher. The on-off switch and 232 and the means of displaying 233 are all connected to the power source 231.

[0040] Here, the means of displaying 233 could be a lamp emitting light, or an alarm sounding a warning alarm, etc. Meanwhile, in the present example, the means of displaying 233 is a lamp 233a, which emits light. As for the location of the lamp 233a, it is placed, slanted in the lower inside portion of the back of the hand, at the back side of the glove part 110 (refer to FIG. 2). In this setting, a golfer can easily see the lamp while in the posture of the top of a back swing. Unlike the warning alarm, which generates sounds, the lamp 233a would not bother other neighboring golfers, which in turn secures privacy since only the golfer with the functional gloves is aware of the situation.

[0041] The operation of Example 1 of the present invention is described as below: A golfer while wearing the gloves of the present invention would grip the golf club with appropriate pressure. With the upper outside portion of the palm including a thumb, the golfer should hold it softly with little pressure (pressure of approximately 20 g/cm<sup>2</sup> or less), and with the lower inside portion of the palm including a little finger, the golfer should hold it with strong pressure. At this time, if the pressure is at a certain level or higher at the outside portion 110 of the palm region of the frontal side of the glove part 100, the elastic band 210 contracts, and the conductors 220 placed at the upper and lower surfaces thereof come in contact through the holes 211 on the pad, which results in current flow. In the end, the light on the lamp 233a (i.e., the means of displaying 233) is turned on.

[0042] Consequently, with the present invention, a golfer can see the flashing light on the lamp 233a, becoming aware that the grip on the golf club is too tight, and thereby changing the grip accordingly.

[0043] FIGS. 5 through 7 show Example 2 of the glove of the present invention. FIG. 5 is a plain view of the frontal side of a functional golf glove, partially sectional, according to Example 2 of the present invention. FIG. 6 is a plain view of the back side of a functional golf glove, partially sectional, according to Example 2 of the present invention. FIG. 7 is a detailed drawing of a low-pressure recognition part according to Example 2 of the present invention.

[0044] The functional golf glove of the present invention, in Example 2, is equipped with a tube at the glove part 100, and a low-pressure recognition part 300 comprising a hose 320 and a main case 330.

[0045] The glove part 100 is equivalent to that of Example 1 of the present invention, and the description thereof is omitted herein.

[0046] The tube 310 is where the fluid material is charged, which is located at the lower side of the palm portion of the frontal side of the glove part 100. As for the location of the tube 310, it should preferably be installed in a slanted manner at the lower inside portion of the palm region of the

frontal side of the glove part 100. The location is set up in such a way to prevent gapping between the inside portion 120 of the palm of the glove part 100 and the golf club while gripping the golf club at the top of a back swing during a set-up (address). Meanwhile, as for the fluid material charged into the tube 310, it can be air, oil, etc.

[0047] The hose 320, extended from the tube 310, is connected to the inside of the main case 330. To the end of the tube, a bellows 320 is attached, which is capable of contraction and expansion according to the pressure of the fluid material charged into the hose 320. The bellows 321, capable of contraction and expansion according to the pressure of the fluid material, can be a rubber sack or cylinder, etc.

[0048] The main case 330 is installed onto the back of the hand of the glove part 100, i.e., the upper side of the cover, which is attached or detached by way of a Velcro tape. A bellows 321, a power source 331, a contact point 333, a spring 332, and a contact plate 334 are installed into the main case 330, and an on-off switch 335, and a means of displaying 336 are installed onto its surface.

[0049] The contact plate 334 is installed within the main case 330 and constructed in such a way that it becomes grounded or shorted to the contact point 333, attached to the inner wall of said main case, according to the contraction and expansion of said bellows 321. On one side of the contact plate 334, there is a bellows 321, and to the other side thereto there is a spring 332. The contact plate 334 by way of elasticity of a spring 332 is at all times pushed to one side and comes in contact with the contact point 333 on the inner wall, which then leads to current flow.

[0050] The on-off switch 335 is equivalent to that of Example 1 of the present invention, and the detailed description thereof is omitted herein.

[0051] The means of displaying 336 is constructed in such a manner that it displays a signal when a golfer grips the golf club at a certain level of pressure or below, or when a gap occurs between the inside portion 120 of the palm region of the frontal side of the glove part. The means of displaying 336 is installed onto the surface of the main case 330 and is connected to the power source 331.

[0052] Here, as for the means of displaying 336, a lamp emitting light or an alarm sounding an alarm, etc. can be installed thereto. Meanwhile, in Example 2, as in Example 1, a lamp 336a was installed therein.

[0053] The operation of Example 2 of the present invention is described as follows: A golfer while wearing the golf gloves of the present invention would grip the golf club with appropriate pressure. With the lower inside portion of the palm including a little finger, it is held more tightly. Meanwhile, the tube 310, which is inserted into the inside portion 120 of the palm region of the frontal side of the glove part, receives pressure, which causes flowing of the fluid material through the hose 320. Consequently, the inside of the bellows 321 is charged up, causing expansion of the bellows 321. Then, it pushes the contact plate 334, which leads to shorting from the contact point 333. The end result is that the lamp 336a, which is a means of displaying 336a, is turned off.

[0054] On the other hand, if the pressure within the tube 310 is at an appropriate level or below, or if there is a gap

between the inside portion **120** of the palm region of the frontal side of the golf glove and the golf club, the fluid material in the bellows **321** is infused into the tube **310** through the hose **320**. At that point in time, the bellows **321** undergoes contraction, and the contact plate **334**, pushed away therefrom by way of elasticity of the spring **334**, comes in contact with the contact point **333**. The end result is that the lamp **336a**, which is a means of displaying **336**, is turned on.

[0055] Consequently, with the present invention, a golfer can see the flashing light on the lamp **336a**, becoming aware of the gap between the palm and the golf club, and thereby changing the grip accordingly.

[0056] FIGS. 8 to 10 show Example 3 of the glove of the present invention. FIG. 8 is a plain view of the frontal of a functional golf glove according to Example 3 of the present invention. FIG. 9 is a plain view of the back side of a functional golf glove, partially sectional, according to Example 3 of the present invention. FIG. 10 is a detailed drawing of a pressure recognition part and a low-pressure recognition part according to Example 3 of the present invention.

[0057] Example 3 of the present invention is a construction, which combines the constructions of Examples 1 and 2. It has a pressure recognition part **200** at the upper outside portion **110** of the palm region of the frontal side of the glove part **100**, and a lower-pressure recognition part **300** at the upper inside portion **120** of the palm region of the frontal side of the glove part **100**. Here, the constructions of the pressure recognition part **200** and the low-pressure recognition part **300** are not significantly different from those of Examples 1 and 2, but the main cases **230** thereof are integrated into one unit.

[0058] Here, a power source **231**, a bellows **321**, a contact point **333**, a spring **332**, and a contact plate **334** are all installed within the main case **230**. An on-off switch **232** and two units of means of displaying (**233**, **336**) of lamps (**233a**, **336a**) respectively are installed onto its surface. Here, the power source **231** and the on-off switch **232** are connected simultaneously to the pressure recognition part **200** and to the low-pressure recognition part **300**. Of the two units of means of displaying, the lamp **233a**, which is one of the means of displaying, is connected to the pressure recognition part **200**, and the other means of displaying **336** (i.e., the lamp **336a**) is connected to the lower-pressure recognition part **300**. To distinguish between the two lamps (**233a**, **336a**), they have different colors. For example, one lamp **233a** could be red color while the other lamp **336a** could green color. Moreover, the bellows **321**, the contact point **333**, the spring **332**, and the contact plate **334** are connected to the low-pressure part **300**.

[0059] The operation of Example 3 of the present invention is not significantly different from those of Examples 1 and 2. In other words, a golfer would put on the functional gloves of the present invention and grip the golf club as usual (the on-off switch is turned on). If the grip at the outside portion **110** of the palm region of the frontal side of the glove part is at an appropriate pressure or higher, the lamp **233a** for the pressure recognition part **200** lights up. If the grip at the inside portion **120** of the palm region of the frontal side of the glove part is at an appropriate pressure or lower, the lamp **336a** for the low-pressure recognition part **300** displays light of different color.

[0060] According to the functional golf gloves of the present invention as described above, if a golfer unconsciously grips the golf club too tightly with the outside portion of the palm, a warning light is turned on. If there is a gap between the inside portion of the palm and the golf club, a warning light is turned on as well. As such, a golfer can practice his or her swing so that the warning light does not flash at all times. In this manner, a golfer can learn the basic techniques of swing and can accurately hit the golf ball farther, which in the end would result in enhancing of his or her performance.

What is claimed is:

1. A functional golf glove, having a frontal side and a back side, which comprises a glove part equipped with a cover at the portion of the back of the hand of the back side, and a pressure recognition part which recognizes a certain level of pressure or higher as applied to the upper portion of the palm region of the frontal side of said glove part, wherein said pressure recognition part is inserted between the inner and outer skins of the upper portion of the palm region of the frontal side of the glove part, which comprises an elastic pad having holes at a fixed interval; conductors passing through said holes, which are placed respectively at the upper and lower surfaces of said elastic pad; and a main case, installed into said cover at the back side of said glove part, inside of which has a power source connected to said conductors, and which is equipped with an on-off switch and a means of displaying, respectively connected to said power source.

2. The functional golf glove according to claim 1, wherein said conductors are electric wires.

3. The functional golf glove according to claim 1, wherein said conductors are electrode plates.

4. The functional golf glove according to claim 1, wherein said means of displaying comprises a lamp emitting light.

5. A functional golf glove, having a frontal side and a back side, which comprises a glove part equipped with a cover at the portion of the back of the hand of the back side, and a low-pressure recognition part, which recognizes a certain level of pressure or lower at the lower portion of the palm region of the frontal side of said glove part, wherein said low-pressure recognition part is inserted between the inner and outer skins of the lower portion of the palm region of the frontal side of the glove part, inside of which comprises a tube filled with fluid material, and a hose connected to said tube, the end of which is attached to a bellows capable of contraction and expansion; and comprising a main case, placed into the cover of the back side of said glove part, which is equipped with an on-off switch and a means of displaying, respectively connected to a power source, wherein a contact plate is grounded or shorted from a contact point by way of elasticity of a spring according to the contraction and expansion of said bellows inserted therein, in which said contact point is attached to the inner wall thereof and connected to the power source.

6. The functional golf glove according to claim 5, wherein said means of displaying comprises a lamp emitting light.

7. A functional golf glove, having a frontal side and a back side, which comprises a glove part equipped with a cover at the portion of the back of the hand of the back side; a pressure recognition part, which recognizes a certain level of pressure or higher as applied to the upper portion of the palm region of the frontal side of said glove part; and a low-pressure recognition part, which recognizes a certain level of pressure or lower at the lower portion of the palm region of

the frontal side of said glove part, wherein said pressure recognition part is inserted between the inner and outer skins of the upper portion of the palm region of the frontal side of the glove part, which comprises an elastic pad having holes at a fixed interval, and conductors passing through said holes, which are placed respectively at the upper and lower surfaces of said elastic pad; and a main case, installed into said cover at the back side of said glove part, inside of which comprises a power source connected to said conductors, and which is equipped with an on-off switch and a means of displaying, respectively connected to said power source; wherein said lower-pressure recognition part is inserted between the inner and outer skins of the lower portion of the palm region of the frontal side of the glove part, inside of

which comprises a tube filled with fluid material, and a hose connected to said tube, the end of which is attached to a bellows capable of contraction and expansion; and comprising a main case, placed into the cover of the back side of said glove part, which is equipped with an on-off switch and a means of displaying, respectively connected to a power source, wherein a contact plate is grounded or shorted from a contact point by way of elasticity of the spring according to the contraction and expansion of said bellows, in which said contact point is installed in place with a spring and attached to the inner wall of said main case.

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