



(19) **United States**

(12) **Patent Application Publication**
Kim

(10) **Pub. No.: US 2003/0157984 A1**

(43) **Pub. Date: Aug. 21, 2003**

(54) **METHOD FOR GAME USING LOW FREQUENCY AND THEREOF DEVICE**

(52) **U.S. Cl. 463/36**

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(57) **ABSTRACT**

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This invention is related to the game method of body sense using low frequency. there is setting up low frequency oscillator to apparatus game and there is possessed of inducing means of electrode and low frequency inducing duct etc, so as to produce sense information in signal process apparatus of above apparatus game according as process state of game. there is oscillating to low frequency in above low frequency oscillator according as above produced sense information. there is transmitting to each energy circulatory system through above inducing means according as above oscillated low frequency, so as to transmit visual sensation and auditory sensation to user according as above processing game state. there is transmitting to pertinent sensation to muscular tissue and nervous tissue of above user, so as to process to above game.

(21) **Appl. No.: 10/296,476**

(22) **PCT Filed: Aug. 6, 2001**

(86) **PCT No.: PCT/KR01/01335**

(30) **Foreign Application Priority Data**

Mar. 30, 2001 (KR) 2001/16949

Publication Classification

(51) **Int. Cl.⁷ A63F 9/24**

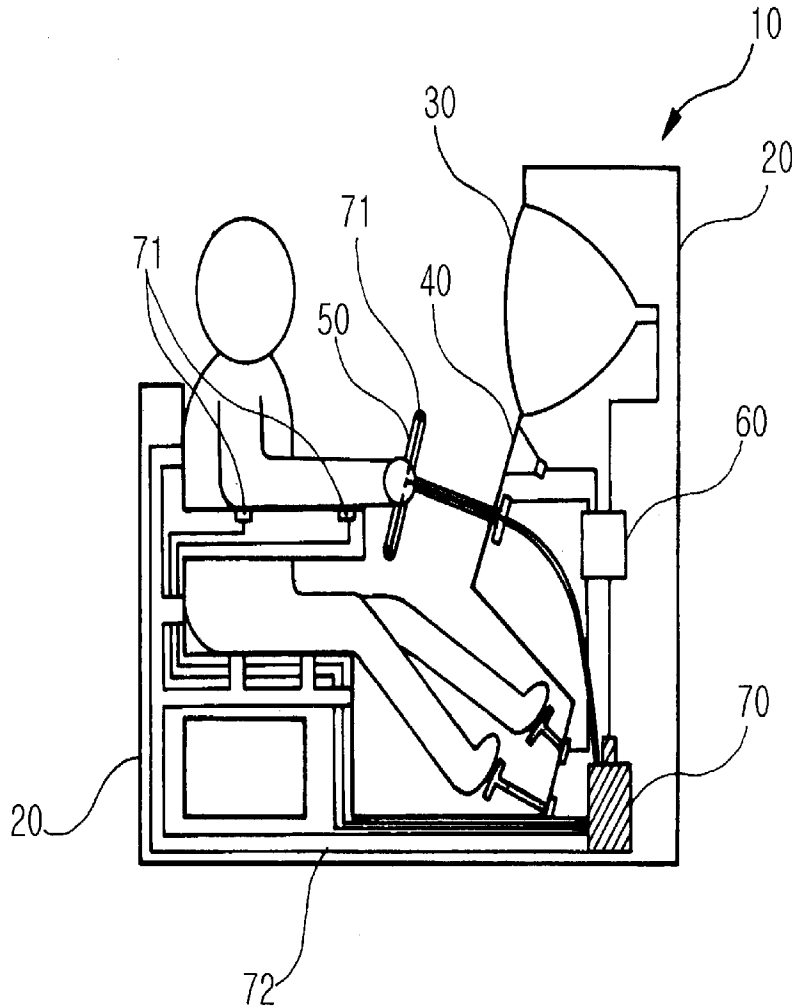


FIG. 1

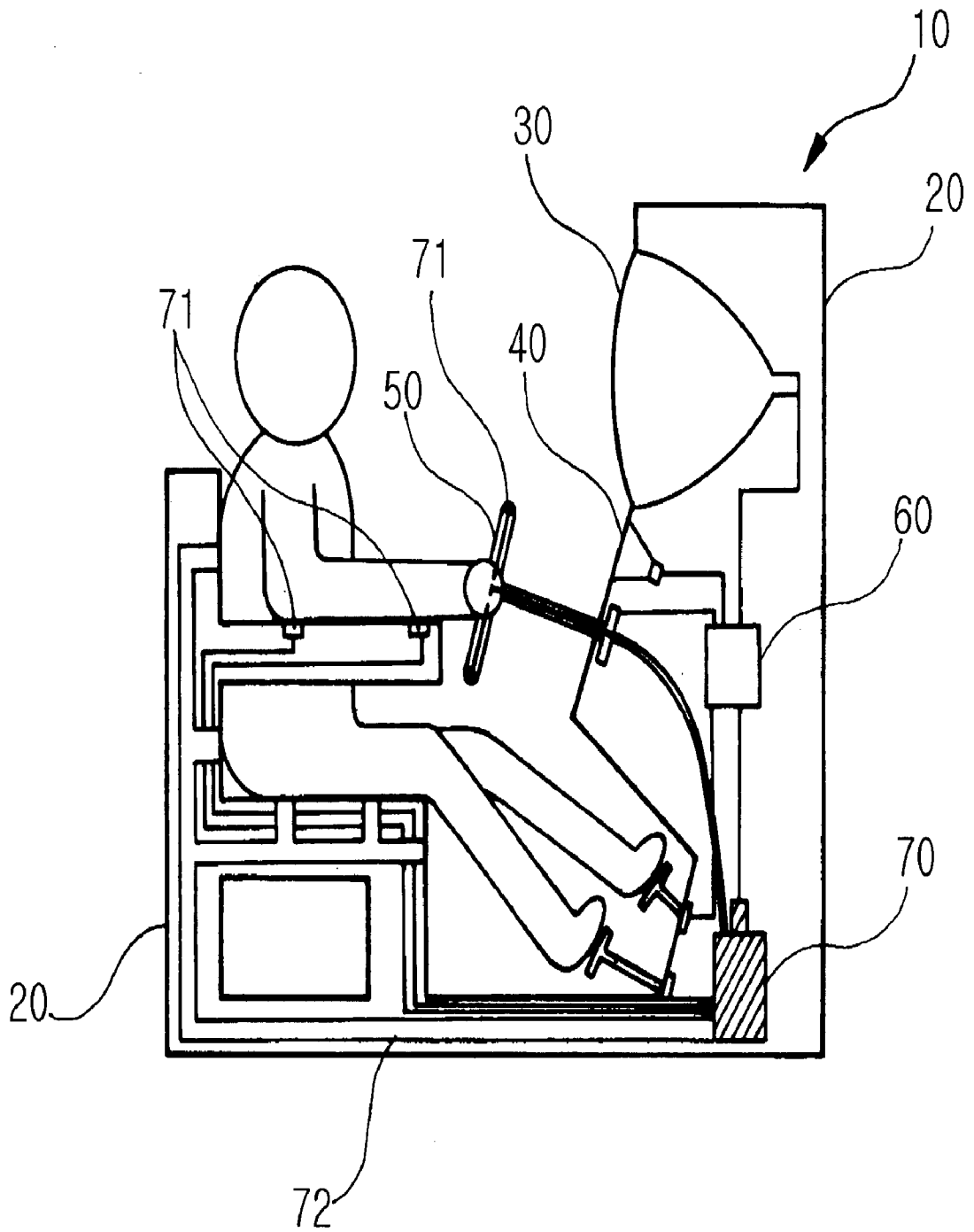


FIG. 2

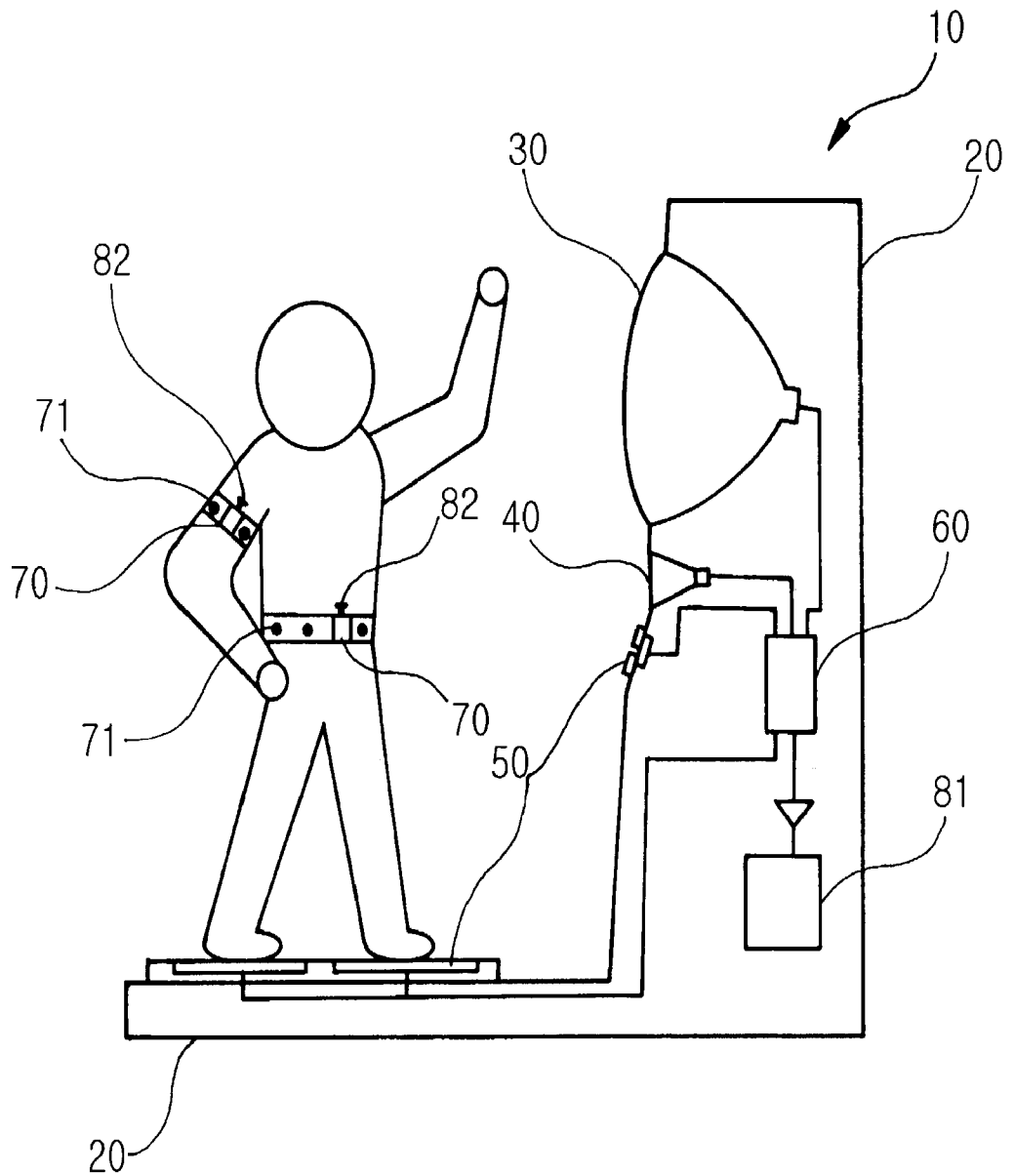


FIG. 3

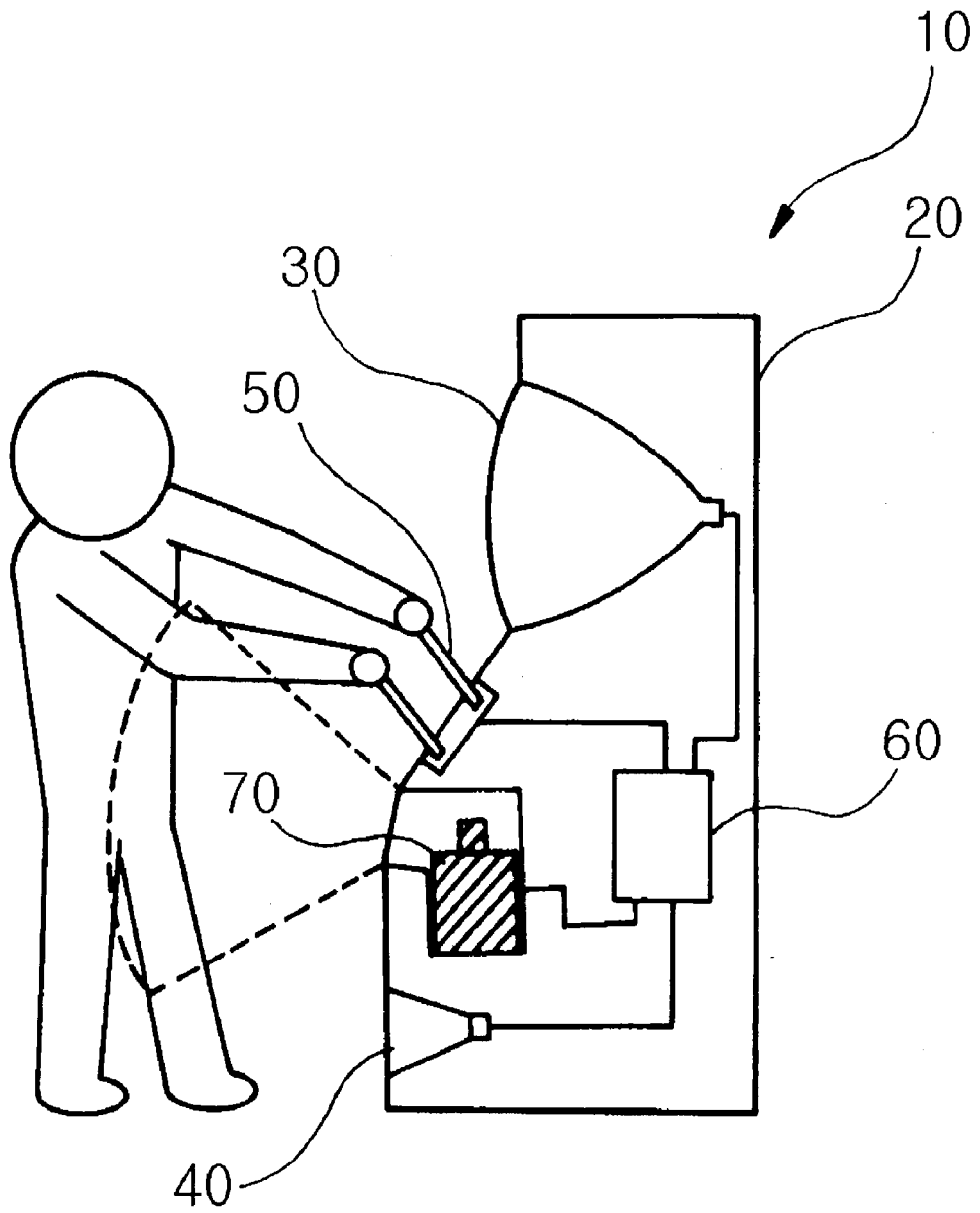


FIG. 4

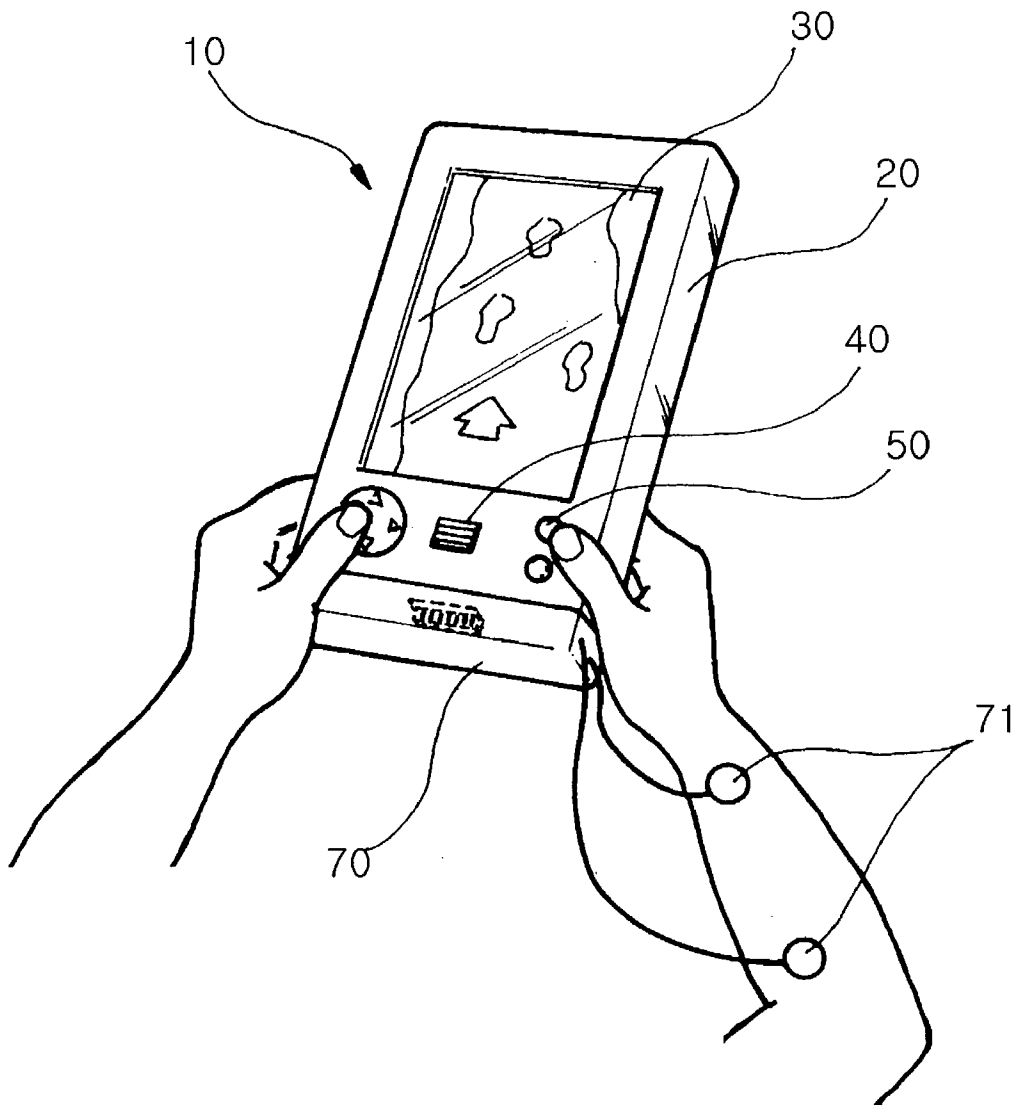


FIG. 5

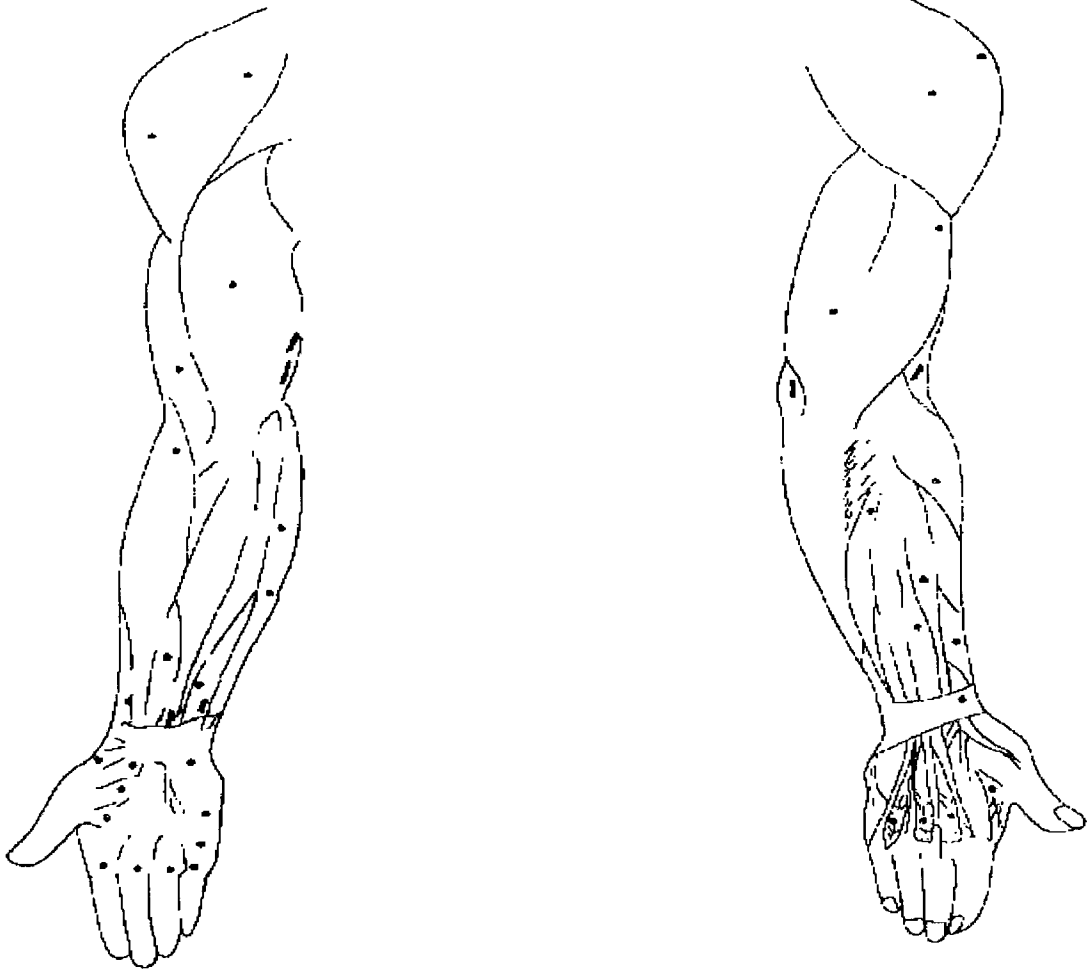


FIG. 6

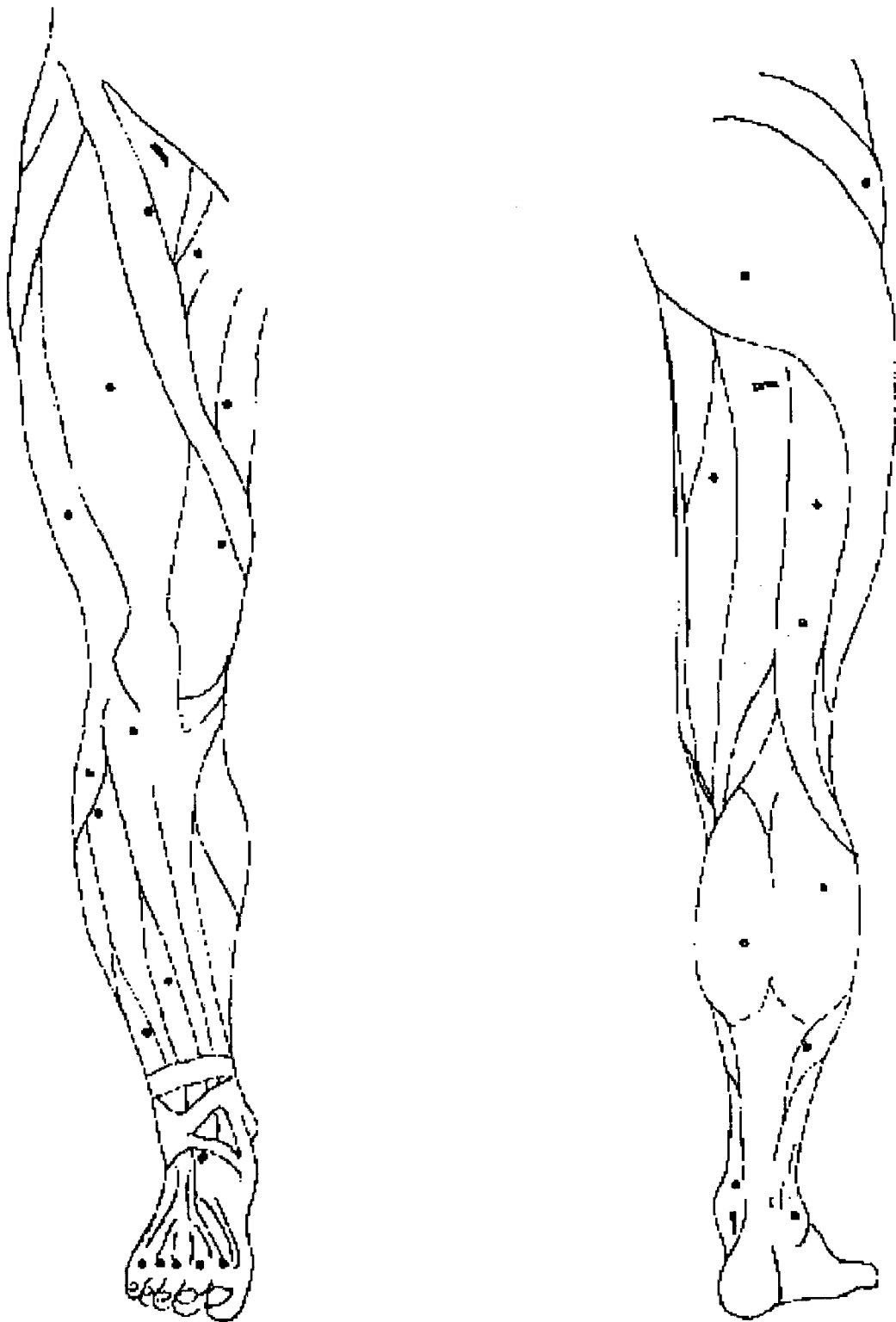
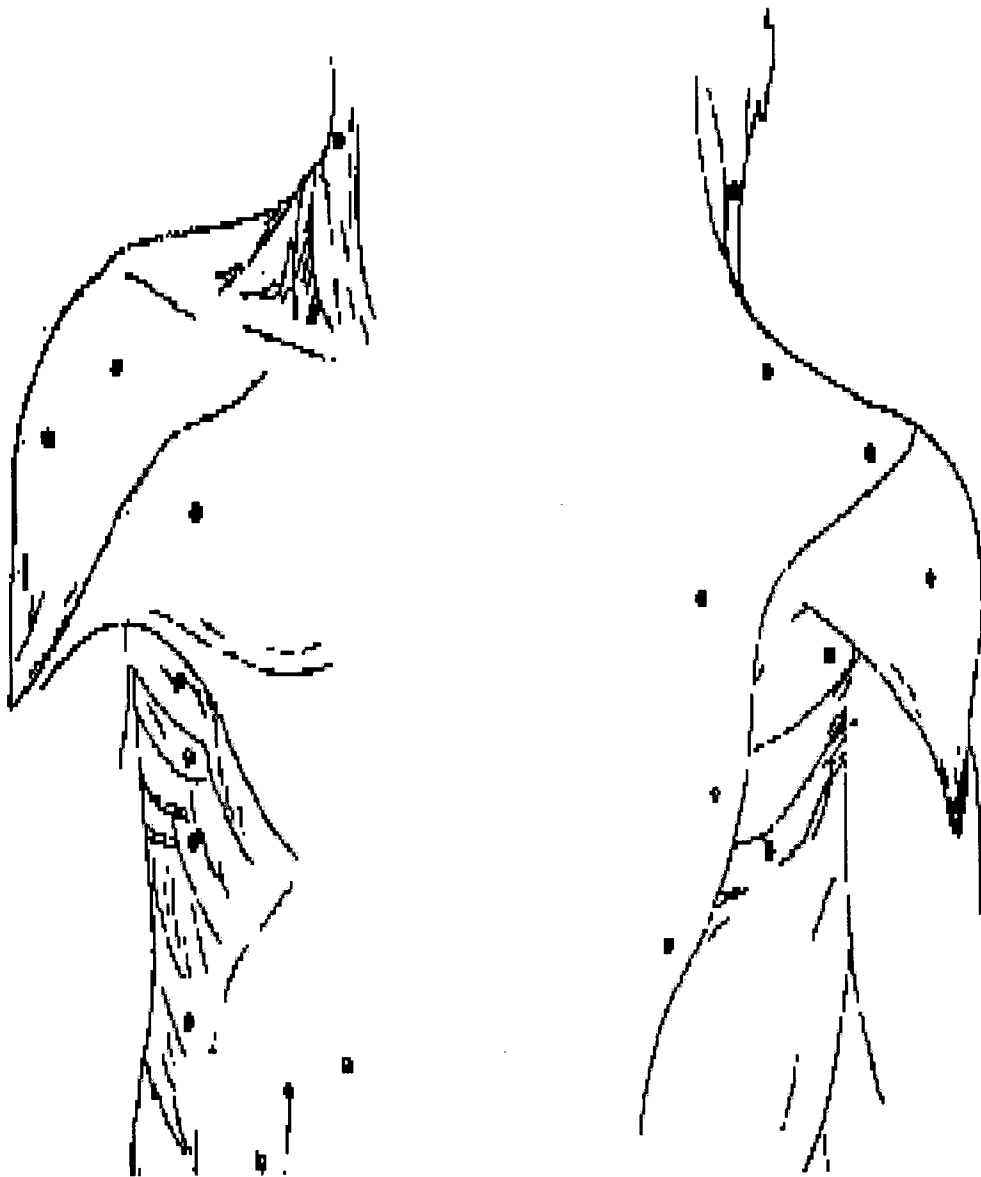


FIG. 7



METHOD FOR GAME USING LOW FREQUENCY AND THEREOF DEVICE

TECHNICAL FIELD

[0001] The present invention relates to a method for game using low frequency and thereof device, and particularly a method for game using low frequency and thereof device in which a user feels an operation of a game as a real situation by applying a low frequency corresponding to an operation of a game to a user's acupoint and meridian.

BACKGROUND ART

[0002] Generally, in a game, a user controls a game character for achieving a certain purpose, viewing it through a display window such as a monitor installed in a game apparatus. The above character is controlled by a user using a control stick such as a joystick attached to a front portion of the game apparatus. The character is moved based on the operation of the control stick for thereby performing the game.

[0003] In addition, the above game apparatus includes a certain unit like a speaker for outputting a corresponding sound based on the operation of the game. As the user performs the game using the control stick, the user views the motion of the character through the display window and plays the game, hears a certain sound corresponding to the character and other characters and background objects through the speaker.

[0004] Here, the user is capable of recognizing the motion of the character controlled by the user and the sound to a corresponding motion through the game apparatus. However, there is not a certain unit for recognizing other feelings based on various operations of the character.

[0005] In addition, in the case of the game such as a fighting or a car race, it is impossible to fully transfer the operation states of the game to the user with respect to the motion of a corresponding character and the sounds due to a diversification of the game.

[0006] Therefore, various methods are developed for effectively transferring the operation state of the game to the user. Among the above methods, the control stick controlled by the user is vibrated based on the operation state of the game, and the seat on which the user sits are vibrated, so that the user recognizes the operation state of the game.

[0007] Here, in the vibration of the control stick or the seat, when the user performs a certain operation based on a signal processing system of the game, a corresponding character is moved or changed on the display window, and a corresponding sound is outputted. Therefore, the motor, link, etc. connected with the control stick are driven based on a corresponding signal for thereby vibrating the control stick or the seat.

[0008] In addition, in another method, the control signal generated based on the operation of the game is transferred to a vibration plate, etc. worn by the user, so that the user feels the operation state of the game through each portion of the body.

[0009] When the operation state of the game is transferred to the user through a vibration medium like the control stick, seat, etc., it is impossible to fully transfer the operation state

of the game to the user due to a simple vibration operation of the vibration medium, and it is inconvenient for wearing and installing the vibration medium due to its inherent structure and heavy weight.

DISCLOSURE OF INVENTION

[0010] Accordingly, it is an object of the present invention to provide the method for game using low frequency and thereof device which overcome the problems encountered in the conventional art.

[0011] It is another object of the present invention to provide a method for game using low frequency and thereof device which are capable of transferring various operation states of a game to a user based on a pulse interval and strength and weakness of a low frequency.

[0012] It is still another object of the present invention to provide a method for game using low frequency and thereof device which are capable of more accurately transferring an operation state of a game to a user by oscillating a low frequency including a sense information based on a game operation with respect to each portion of a user's body.

[0013] It is still another object of the present invention to provide the method for game using low frequency and thereof device which are capable of preventing a user of a game from being over-absorbed into a game using a low frequency through a direct or indirect medium and adapting various oscillation positions of the low frequency.

[0014] In order to achieve the above objects, in the feature of the present invention, a sense information generated in a signal processing apparatus is transferred to each meridian of a user's body through a low frequency oscillator installed in a game apparatus based on a game operation state.

[0015] As another feature of the present invention, a low frequency including a sense information based on a game operation state is applied to a nervous tissue and muscular tissue of a user's body in order for the low frequency to be applied to a sensory nerve system and a motor nerve system of a user's body.

[0016] As another feature of the present invention, a low frequency oscillator is provided for oscillating a low frequency to a user's meridian together with a sense information based on a game operation state.

[0017] As another feature of the present invention, in a game apparatus, there are provided a low frequency oscillator for oscillating a low frequency, and an electrode unit connected in such a manner that a low frequency oscillated by the low frequency oscillator is applied to a user's meridian.

[0018] As another feature of the present invention, in a game apparatus, there are provided a signal processing apparatus installed for transmitting a sense information based on a game operation state, and a low frequency oscillator which is worn by a user for receiving a sense information transmitted from the signal processing apparatus and oscillating a low frequency corresponding thereto.

[0019] As another feature of the present invention, a low frequency including a sense information is oscillated to a portion near a game apparatus based on a game operation state.

BRIEF DESCRIPTION OF THE DRAWINGS

[0020] FIGS. 1 through 4 are diagrams illustrating the construction of a body-felt game device using a low frequency according to the embodiment of the present invention; and

[0021] FIGS. 5 through 7 are diagrams illustrating the meridians of a human body according to the embodiment of the present invention.

[0022]

 <Descriptions of reference numerals with respect to major elements>

10: game apparatus	20: housing
30: display window	40: sound unit
50: control unit	60: signal processing apparatus
70: low frequency oscillator	71: electrode
72: low frequency induction tube	81: transmitter
82: receiver	

BEST MODE FOR CARRYING OUT THE INVENTION

[0023] The embodiments of the present invention will be explained with reference to the accompanying drawings.

[0024] FIGS. 1 through 4 are diagrams illustrating an embodiment of the present invention. As shown therein, there are included a game apparatus (10), a low frequency oscillator (70) installed in the game apparatus (10), and an induction unit.

[0025] As shown in FIG. 1, the game apparatus (10) includes a display window (30), a control unit (50), a sound unit (40), a housing (20) and a signal processing apparatus (60). The display window (30) is preferably installed in an upper portion of a casing of the game apparatus (10) in order for the user who uses the game apparatus (10) to easily play the game in a sit-down or stand-up posture.

[0026] At this time, the game apparatus (10) includes a box-shaped housing (20) which is installed in such as a game room etc, and a game unit and a corresponding program installed in a personal computer.

[0027] In addition, above the display window (30) is controlled by the user based on a display information of the signal processing apparatus (60) for thereby displaying various game screens of the game.

[0028] The control unit (50) is installed in a certain place such as in a front portion of the housing (20) and is connected to communicate an information with the signal processing apparatus (60), so that the operation of the game is controlled based on a user's control.

[0029] The control unit (50) is formed of a control stick such as a joystick which is used in such a manner that the user holds the joystick and moves in a certain direction for thereby controlling the game, a control panel which is used in such a manner that the user pressurizes using a foot for thereby controlling the game, and a control button for controlling the game by pressing the button by the user.

[0030] The sound unit (40) includes a sound output unit such as a speaker for outputting a sound of a certain

bandwidth of a certain frequency that the user hears based on a sound information generated by the signal processing apparatus (60).

[0031] The housing (20) is formed in a box shape for installing the display window (30), the control unit (50), the sound unit (40) and the signal processing apparatus (60) therein. The display window (30) is installed in a certain portion at which the user easily sees. The control unit (50) is installed in a certain portion at which the user easily handles. The sound unit (40) is installed in a certain portion at which the user easily hear. The signal processing unit is installed in the housing (20).

[0032] In addition, the housing (20) is formed of a seat on which the user sits, a rod-shaped support rod that the user holds and presses the control panel, and an apparatus worn to a part of the human body such as a user's head or arm.

[0033] The signal processing apparatus (60) stores the display information and sound information of the game and the sense and control information, and a semiconductor equipment including a plurality of algorithms for transmitting or receiving the display information, sound information, sense information and control information to each apparatus based on the operation information with respect to the control unit (50).

[0034] In addition, the signal processing apparatus (60) may include a transmitter (81) for carrying the sense information on a waveform and transmitting the same.

[0035] The low frequency oscillator (70) adjusts the interval of the waveform and the strength and weakness of the waveform based on the sense information from the signal processing apparatus (60) and oscillates the low frequency. A pair of electrodes (71) are attached to a part of the human body of the user, and a current flows to the electrodes (71) for thereby forming a pulse waveform therebetween. Therefore, the low frequency is outputted using a self-induction of a magnetic field generated between the power and both electrodes (71).

[0036] Here, the low frequency oscillator (70) is formed of a common frequency oscillator which is capable of generating a certain pulse waveform based on a supplied power. The low frequency generated by the frequency oscillator is outputted through an induction tube and conductive cable in a vibration waveform or current form which are transferred using a certain medium such as air and moisture.

[0037] The low frequency oscillator (70) is formed of a receiver (82) which receives a radio wave signal including a sense information from the transmitter (81) of the signal processing unit and separates the sense information.

[0038] Above the induction unit is a unit for inducing a low frequency generated by the low frequency oscillator (70) to a meridian formed in each portion of the user's body and generates an electrical stimulus through the pair of the electrodes (71). The oscillator which forms a pulse waveform using a intermittence of the electrical stimulus is constituted in such a manner that a pair of conductive cables are extended from a certain portion of the oscillator, and the extended conductive cables are connected with each meridian of the user's body. The low frequency oscillator (70) which uses the magnetic induction of the magnetic field generated at both electrical stimulus of the power includes a

low frequency induction tube (72) which is formed in such a manner that the low frequency generated in the low frequency oscillator (70) is applied to each meridian portion of the user's body.

[0039] In addition, the induction unit extended from the low frequency oscillator (70) is extended to each element of the housing (20) and the control unit (50), so that the low frequency generated by the low frequency oscillator (70) is transferred based on a contact with the user's body.

[0040] The above induction unit is extended to the seat on which the user sits and a portion of the housing (20) of the user for thereby transferring the low frequency.

[0041] Therefore, the game apparatus (10) includes a housing (20) which is installed in front of the user at a certain height at which the user conveniently plays the game in a sit-down or stand-up posture. The display window (30) is installed in a front upper portion of the housing (20). The control unit (50) is installed in the front portion of the housing (20) and in multiple portions contacting with each portion of the user's body. The sound unit (40) is installed in a front side portion of the housing (20) and a certain portion in which the user easily hears sounds. The low frequency oscillator (70) is installed in the interior or in a front portion of the housing (20).

[0042] The method for transferring a body-felt of a game based on an operation of the same using the body-felt game apparatus using a low frequency will be described through preferred embodiment according to the present invention.

[0043] When the power is supplied to the game apparatus (10), the power is supplied to the display window (30), the control unit (50), the sound unit (40), the housing (20), the signal processing apparatus (60) and the low frequency oscillator (70), so that the game is started.

[0044] At this time, the signal processing apparatus (60) judges whether the user uses the game apparatus (10) based on the operation states of the sensor and operation buttons installed in the housing (20) and the control unit (50), and the position with respect to the game apparatus (10) of a corresponding user is judged. The positions of each meridian of the user's body are recognized, so that the preparation for a start of the game is completed.

[0045] The user who wants to play the game in the game apparatus (10) becomes close to the front portion of the housing (20) of the game apparatus (10) and sits on the seat provided in the housing (20). The user's operation state of the game apparatus (10) is recognized based on the sensor and buttons installed in each element of the housing (20) and the recognizing apparatus of the induction unit.

[0046] In addition, the user who wants to play the game using the game apparatus (10) inputs coins into a coin receiving box provided in the game apparatus (10) or transfers a game start instruction by, pressing the control button of the game apparatus (10), so that the game apparatus (10) recognizes the user's game start instruction.

[0047] Therefore, the game apparatus (10) and the signal processing apparatus (60), which recognized the operation of the game apparatus (10) of the user, operate the low frequency oscillator (70) connected to each meridian of the user's body through an induction unit based on the user's game operation state.

[0048] The game apparatus (10) and the signal processing apparatus (60), which recognized the operation of the game apparatus (10) of the user, operate the low frequency oscillator (70) attached to the user's body based on a game operation state of the user.

[0049] At this time, the settings with respect to each meridian of the user's body are implemented in such a manner that the low frequency oscillator (70) and induction unit are installed in the housing (20) which contacts with the user's body, the seat and armrest included in the control unit (50), a knob of the handle and pedal, and the low frequency oscillator (70) is installed in a certain front portion of the housing (20), so that it is possible to apply the low frequency to the entire portions of the user's body.

[0050] As shown in FIGS. 5 through 7 and indicated as a circular dot therein, the meridian are formed of a plurality of acupoints in the human body. The induction unit is formed of extended lines connecting the position of each acupoint or each acupoint to the meridian.

[0051] In the embodiment of the present invention, the method of the simulation game in which a user controls a transportation unit such as a vehicle or airplane using the game apparatus will be described.

[0052] As shown in FIG. 1, the user sits on the seat provided in the simulation game apparatus (10) and presses the start button. The game apparatus (10) and the signal processing apparatus (60) which recognized the start of the game from the user recognize, using the signal processing apparatus (60), that whether the induction unit such as the electrode (71) or the low frequency induction tube (72) installed in the seat and armrest of the user and installed in the handle held by the user is contacted with each acupoint of the user's body. Unless each meridian of the user's body contact with the induction unit, a certain instruction that the height of the seat of the user and the distance between the game apparatus (10) and the user must be adjusted is outputted on the display window (30) and through the speaker of the game apparatus (10). In addition, it is requested that the user must use the armrest and handle in order for the induction unit and each meridian of the user's body to be contacted.

[0053] In addition, the user is requested whether the user feels a certain feeling in each body portion by oscillating a low frequency to the induction unit contacting with each meridian. As a result of the above request, the user is guided to change his posture, so that the meridian of the user is contacted with a plurality of induction units based on the operation of the control unit (50).

[0054] Here, in each meridian of the user's body, it is guided that the electrode (71) installed in an outer circumferential surface of the handle contacts with a palm of user's hand which holds the handle, and in the low frequency induction tube (72) installed in each portion of the seat of the housing (20), it is guided that the positions in which the user sits and the armrest of the seat are contacted with a plurality of acupoints formed in the user's arm, shoulder and back. In a state that the user sits on the seat, it is guided that a plurality of acupoints formed in the user's leg are contacted with the entrance of the low frequency induction tube (72) installed in a lower front portion of the seat.

[0055] In addition, the acupoints of the user's body are preferably formed of a portion from an elbow to a wrist in

which a muscle tissue and neural tissue are concentrated, a portion of a palm and fingers, a portion from an ankle to a knee, a portion of a waist and back, a portion of a shoulder. In particular, the acupoints formed in the end portion of each meridian are preferably used.

[0056] In addition, the lower frequency induction tube (72) is positioned in such a manner that a low frequency is effectively applied to each meridian of the user's body. The electrode (71) is preferably positioned in such a manner that an acupoint formed in an end portion of each meridian of the user's body and an acupoint formed in the other end of the same contact each other.

[0057] In a state that each meridian of the user's body and the low frequency induction tube (72) and the electrode (71) are contacted each other, the simulation game such as a vehicle and airplane is performed by operating the handle and pedal installed in the front surface of the housing (20) by the user. The operations states of the game, such as a state that a vehicle runs at a high speed, a state that a vehicle collides with another vehicle or an object, a state that an airplane flies at a high height, and a state that an airplane falls, are implemented by adjusting a pulse interval and pulse strength of a low frequency and an intensity of current and a intermittence time based on a sense information and applying the low frequency.

[0058] Therefore, the low frequency oscillator (70) applies a certain pulse interval and a certain pulse strength which are proper to a game operation state to each meridian of the user based on the regulation of the signal processing apparatus (60), and the low frequency applied by the low frequency oscillator (70) is transferred to each meridian of the user through the low frequency induction tube (72). The pulse waveform is transferred to the meridian of the user through a pair of the electrodes (71) connected with the low frequency oscillator (70) for thereby transferring a sense information based on the game operation state.

[0059] Here, the sense information set by the signal processing apparatus (60) is transferred as a vibration of the handle through the electrode (71) of the handle held by the user when the vehicle collides with a certain object. The sense that the seat is forwardly moved, an impact sense and a weight sense which is sharply increased are transferred through the low frequency induction tube (72) of the seat on which the user sits. Therefore, the senses generated based on the collision of the vehicle are effectively transferred to the user.

[0060] In addition, in a state that the electrode (71) is contacted with a plurality of portions of each meridian of the user, the pulse waveform or current are transferred through each electrode (71), so that the sense transfers using the pain spot of the user's body are implemented.

[0061] Therefore, the user sees the movement effects of the screen of the display window (30) and the character and background sound based the game operation state and feels the senses based on the game operation state through the meridian of each portion of the body for thereby playing the game.

[0062] The body-felt game method using a low frequency and a device of the same according to another embodiment of the present invention will be described with reference to the accompanying drawings.

[0063] In the embodiment of the present invention, a dance game is performed in a state that the user wears the low frequency oscillator (70), and the sense information is transferred from the signal processing apparatus (60) to the low frequency oscillator (70).

[0064] A first user wears the low frequency oscillator (70) provided in a dance game apparatus (10).

[0065] As shown in FIG. 2, the low frequency oscillator (70) is formed in a box shape, so that the low frequency oscillator (70) is attached to a portion of a user's waist or an upper portion of a user's arm. At this time, a waistband and armband are also provided.

[0066] In addition, a plurality of electrodes (71) are provided in pairs in an inner portion of the waist band and arm band contacting with a user's body.

[0067] In a state that the user wears the low frequency oscillator (70), the dance game apparatus (10) is operated based on a selective operation by the user. A certain image corresponding to the dance game is displayed on the display window (30) provided in the housing (20) of the game apparatus (10). A wearing state of the low frequency oscillator (70) is displayed. A certain music corresponding to the dance game is outputted through the sound unit (40) of the housing (20). A certain light is outputted from each button of the control panel stepped by the user for thereby implementing the dance game.

[0068] As the dance game is performed, the user steps on each button of the control panel and performs the dance game based on the set operation of the dance game. The sense information is generated by the signal processing apparatus (60) provided in the game apparatus (10) and is carried on a radio signal and is transferred through the transmitter (81) provided in the signal processing apparatus (60).

[0069] The thusly transmitted radio signal is inputted into the receiver (82) of the low frequency oscillator (70) worn by the user in his waist or arm. A sense information is separated from the above radio signal inputted from the signal processing apparatus (60) based on the set information of the receiver (82) for thereby generating a certain frequency based on a corresponding information, so that the low frequency oscillator (70) is controlled.

[0070] Here, the current generated by the low frequency apparatus (70) based on the sense information generates a certain waveform which flows fast and continuously like the user feels flying in the air in the case that the user's dance game is properly performed and is transferred to each acupoint formed in a user's waist and arm through the electrode (71) attached to the waist band and arm band. In the case that the user plays the dance game wrong or the dance game is performed at a slower speed, the slower waveform is intermittently transferred to the user's body, so that the user receives a certain penalty and is advised to play the game faster. At this time, the user feels like his body is pressurized or falls down.

[0071] Therefore, as the user performs the dance game, the user observes the displayed information on the display window (30) of the game apparatus (10) and hears the sound outputted from the sound unit (40) of the game apparatus (10) for thereby effectively performing the game. In addi-

tion, the user feels a sense transferred to the acupoints formed in the user's waist and arm for thereby performing the dance game.

[0072] The body-felt game method using a low frequency and a device of the same according to still another embodiment of the present invention will be described.

[0073] In the embodiment of the present invention, in a state that the user stands in front of the game apparatus (10), the user plays a fighting game, feeling a waveform of a low frequency applied from the low frequency oscillator (70) installed in the front surface of the game apparatus (10).

[0074] As shown in FIG. 3, a first user stands in front of the fighting game apparatus (10) and presses the start button attached to the game apparatus (10). The signal processing apparatus (60) of the game apparatus (10) and the sensor connected with the signal processing apparatus (60) are operated, and a body size of the user is judged. The low frequency applying range of the low frequency oscillator (70) installed in the front portion of the game apparatus (10) is adjusted based on the body size of the user, so that the game is performed.

[0075] Here, when adjusting the low frequency applying range, the intensity of the low frequency oscillation of the low frequency oscillator (70) is adjusted. The applying direction and spreading angle of the low frequency oscillated by the low frequency oscillator (70) are adjusted based on the intensity of the power and the area and opened angle of a discharging port of the low frequency.

[0076] In addition, the information based on the body size of the user is compared with multiple information previously set in the signal processing apparatus (60), so that a proper range of the low frequency is adapted to the user. The low frequency is applied to each meridian of the user's body based on the body style of the user in such a manner that the low frequency oscillator (70) and the discharging port are controlled.

[0077] Therefore, as the user performs the fighting game, in the case that the character controlled by the user receives an impact or collides with another character or a background object, the sense information is generated by the signal processing apparatus (60). Therefore, a faster or slower pulse waveform or stronger or weaker pulse waveform are transferred to each meridian of the user standing in front of the game apparatus (10) through the low frequency oscillator (70) installed in the front portion of the game apparatus (10) based on the sense information.

[0078] At this time, the pulse waveform generated by the low frequency oscillator (70) is transferred based on a medium such as the air between the game apparatus (10) and the user. The pulse waveform same as that of the low frequency oscillator (70) may be sequentially applied to each meridian of the user in a radiation shape for thereby effectively applying the pulse waveform to the user.

[0079] The body-felt game method using a low frequency and a device of the same according to still another embodiment of the present invention will be described.

[0080] In the above embodiment of the present invention, the low frequency oscillator (70) according to the present invention is installed in the game which is performed in a PDA (Personal Digital Assistants) which is recently widely used.

[0081] As shown in FIG. 4, above the PDA game apparatus (10) includes a box-shaped housing (20), a display window (30) formed in almost portions of the front surface of the same, a sound unit (40) installed in a lower portion of the display window (30), and a control unit (50) installed at both sides of a lower portion of the display window (30). A signal processing apparatus (60) is further provided therein.

[0082] A connection terminal may be provided in a lower portion or an upper portion of the PDA game apparatus (10) for implementing an information communication with an additional peripheral such as a MODEM or a memory card and for connecting with a cellular phone or a personal computer.

[0083] In the above embodiment of the present invention, the low frequency oscillator (70) according to the present invention is connected with a connection terminal of the PDA game apparatus (10).

[0084] Here, the low frequency oscillator (70) connected to the connection terminal is preferably formed in the same rectangular box shape as the upper and lower shapes of the PDA game apparatus (10) to contact with the upper and lower side portions of the PDA game apparatus (10). The low frequency oscillator (70) includes a terminal to be connected with the connection terminal and a pair of electrodes (71) which contact with the meridian of the user's body at one side.

[0085] In addition, a power unit such as a battery is installed in the interior of the low frequency oscillator (70) for thereby implementing an oscillation of the low frequency regardless of the power of the PDA game apparatus (10).

[0086] Therefore, when performing a game in which the character in the PDA game apparatus (10) is moved for removing an object in front of the character, the movements of the character and objects may be displayed through the display window (30) by the signal processing apparatus (60) based on the game construction. The sound effects are implemented by the sound unit (40) based on the movements of the character and objects. The current which has a different strength and weakness and intermittence degree based on the operation state of the game is flown from the low frequency oscillator (70), which receives the sense information generated by the signal processing apparatus (60) through the connection terminal, to the electrode (71). Therefore, the sense of the game operation state is transferred to the meridian of the user contacting with the electrodes (71).

[0087] In the above embodiment of the present invention, when the character collides with an object or the character removes a certain object in the game, the current which fast intermit the current having a certain level is flown through the electrode in order for the user to feel the vibration in the low frequency oscillator, so that the user recognizes the operation state of the character.

[0088] In addition, the low frequency oscillator (70) is connected with a UBS (Universal Serial Bus) provided in the personal computer, so that the sense of the game, which is performed through the personal computer, is oscillated to the low frequency by the low frequency oscillator (70), so that the above sense of game is transferred to the meridian of the user through the electrode (71) connected to the low frequency oscillator (70).

[0089] As the present invention may be embodied in several forms without departing from the spirit or essential characteristics thereof, it should also be understood that the above-described embodiments are not limited by any of the details of the foregoing description, unless otherwise specified, but rather should be construed broadly within its spirit and scope as defined in the appended claims, and therefore all changes and modifications that fall within the meets and bounds of the claims, or equivalences of such meets and bounds are therefore intended to be embraced by the appended claims.

INDUSTRIAL APPLICABILITY

[0090] As described above, in the present invention, the sense of the game operation state is transferred to the user through the low frequency oscillator for thereby implementing an actual-like game.

[0091] In addition, in the present invention, it is possible to enhance a game effect by transferring the sense information based on the operation state of the game using the meridian through which the sense is effectively transferred among the body of the user.

[0092] In the present invention, the sense of the game operation state is effectively transferred to the user using a compact size low frequency oscillator and induction unit, so that it is possible to easily install the game apparatus and housing of the low frequency oscillator and induction unit. The low frequency oscillator and inducing unit may be easily worn by the user.

What is claimed is:

1. In a method of performing a game in which a visual information and an audio information generated by a signal processing apparatus based on a construction of a game and an operation of a user who performs a game, the body-felt game method using a low frequency, comprising:

the step in which a low frequency oscillator provided in a game apparatus oscillates a low frequency to each meridian of a user's body based on a sense information generated by the signal processing unit; and

the step in which a low frequency oscillated by the low frequency oscillator is applied to each meridian of the user as a pulse waveform.

2. The method of claim 1, further comprising the step in which an oscillation range of a low frequency oscillated by the low frequency oscillator is coincided with each position of the meridian of the user.

3. The method of claim 1, further comprising:

the step in which a sense information is transferred using a radio wave based on a game operations state through a transmitter in the signal processing apparatus, and the radio wave from the signal processing apparatus is received into a receiver of the low frequency oscillator worn by the user; and

the step in which a sense information is separated from the radio wave received through the receiver.

4. The method of claim 1, further comprising:

the step in which an inducing means connected with the low frequency oscillator installed in the game apparatus is positioned in each meridian of the user; and

the step in which the low frequency oscillated by the low frequency oscillator is oscillated through the inducing means.

5. The method of claim 1, further comprising:

the step in which a low frequency is applied to each meridian of the user who is positioned in front of the game apparatus in the low frequency oscillator installed in the game apparatus.

6. In the game apparatus which includes a display window, a sound means, a control means, a signal processing apparatus and a housing, a body-felt game apparatus using a low frequency, comprising:

the low frequency oscillator which is connected with a signal processing apparatus and is installed in a housing of the game apparatus and oscillates a low frequency based on a sense information transferred from the signal processing apparatus; and

the electrode which is connected with the low frequency oscillator and is attached to each meridian of a user's body and transfers an electrical stimulus based on a low frequency oscillated by the low frequency oscillator.

7. The apparatus of claim 6, further comprising:

the low frequency oscillator which is connected with a signal processing apparatus and is installed in a housing of the game apparatus and oscillates a low frequency based on a sense information transferred from the signal processing apparatus; and

the low frequency induction tube which is connected with the low frequency oscillator and is installed in each portion of the housing of the game apparatus and transfers a pulse waveform based on a low frequency oscillated by the low frequency oscillator in a contacting state with each meridian of the user.

8. The apparatus of claim 6, further comprising:

the transmitter which is installed in the signal processing apparatus in order for a sense information generated by the signal processing apparatus to be carried on a radio wave and be transferred; and

the receiver which receives a radio wave from the low frequency oscillator worn by the user and separates a sense information from the radio wave.

9. The apparatus of claim 8, further comprising:

the electrode which is connected with a low frequency oscillator worn by the user and is contacted with each meridian of a user's body and transfers an electrical stimulus to the meridian based on a low frequency oscillated by the low frequency oscillator.

10. The apparatus of claim 6, further comprising:

the low frequency oscillator which is installed in a front surface of the game apparatus and outputs a low frequency to each meridian of a user in front of the game apparatus.

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