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(54) Dumbbell structure capable of delivering exercise information and status

(57) The present invention discloses a dumbbell structure (10) capable of delivering exercise information and status, comprising one or more electronic devices (20) installed on the dumbbell for transmitting related parameter information exercise information and status to a computer (such as PC or NB) or a personal smart mobile device (such as PAD and PDA) with corresponding soft-

ware, and the computer or personal smart mobile device display data of the total amount of exercise (including frequency and calorie consumption), and the electronic device comprises a weight information transmitting sensor, a weight information receiving sensor, a G-sensor (23), a power supply unit (24), an information integration and computation unit (25) and an information output unit (26).

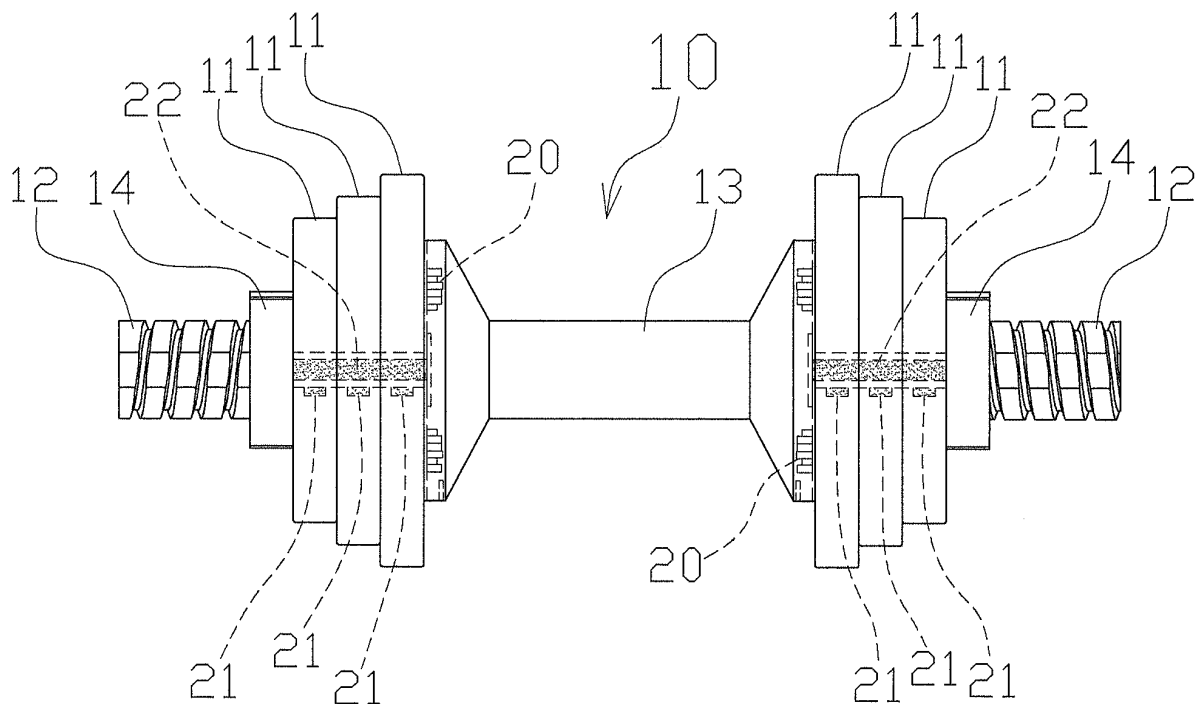


FIG.2

Description

BACKGROUND OF THE INVENTION

1. Fields of the Invention

[0001] The present invention relates to a dumbbell structure capable of delivering exercise information and status, and more particularly to the dumbbell structure capable of outputting and displaying related total physical activity information on a computer or a personal smart mobile device, so that users can know about the amount of exercise and calorie consumption to facilitate controlling the exercise effect and execution efficiency, so as to obtain excellent fitness training data for their exercise.

2. Description of the Related Art

[0002] As we know, dumbbells are the simplest and most convenient exercise accessory equipment with a simple structural design for weight training. The dumbbells not only have the mobility and convenience for an easy access, but also have the advantage of being used freely without too much limitation on its using environment and space. However, users can determine the time, the exercise frequency and the exercise amount on their own by estimating their muscular endurance during the use of the dumbbells, since the dumbbells comes with a simple design without any support of accessories. In other words, the users cannot control the expected exercise and training effect based on a self-evaluation fitness training method, and the dumbbells provide a pure weight training only, and users have no way to know about the exercise effect (such as the calorie consumption) of their exercise.

[0003] Of course, some manufacturers have integrated a counter, timer, or electronic audio/video device into a plurality of dumbbell products, in hope of letting users know about their exercise frequency and time, or operating these dumbbells together with a sound effect to improve the fun and the user's willingness of the exercise. However, such accessories are used to inform the users about the basic exercise parameters and improve the recreational effect only. For weight training, these dumbbells still cannot provide scientific and practical exercise data to users.

SUMMARY OF THE INVENTION

[0004] In view of the aforementioned drawbacks of the conventional dumbbells, the inventor of the present invention based on years of experience in the related industry to conduct extensive researches and experiments, and finally developed the present invention that primarily applies a widely used G-sensor together with related electronic equipments to sense the exercise information and status of the dumbbell precisely, and related software is provided for computing the total amount

of exercise quickly and accurately, so that the users can know about their exercise and calorie consumption any-time to have a better control of the exercise effect and achieve the best exercise benefit.

[0005] In addition, the present invention further comprises a micro electronic gyroscope for detecting the exercise status of the dumbbell and the spatial status of the dumbbell to let the users know about different using methods (such as stretching and lifting a user arm horizontally forward or stretching and lifting the arms on both lateral

sides of the user's body) to achieve different calorie consumptions, and the users can select the best using method to achieve the expected exercise effect.

[0006] According to the invention, a dumbbell structure capable of delivering exercise information and status, comprises one or more electronic devices installed on the dumbbell for transmitting related parameter information exercise information and status to a computer (such as PC or NB) or a personal smart mobile device (such as PAD and PDA) with corresponding software, and the computer or personal smart mobile device displays data of the total amount of exercise (including frequency and calorie consumption).

BRIEF DESCRIPTION OF THE DRAWINGS

[0007] The accomplishment of this and other objects of the invention will become apparent from the following description and its accompanying drawings of which:

FIG. 1 is a flow chart of operating and controlling the present invention;

FIG. 2 is a schematic view of a preferred embodiment of the present invention;

FIG. 3 is a schematic view of another preferred embodiment of the present invention;

FIG. 4 is a cross-sectional view of FIG. 3; and

FIG. 5 is a cross-sectional view of another preferred embodiment of FIG. 3.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0008] The technical measures and characteristics of the present invention will become apparent with the detailed description of preferred embodiments accompanied with related drawings as follows:

With reference to Figs. 1 and 2 for the flow chart of operating and controlling the present invention and the schematic view of a preferred embodiment of the present invention respectively, the invention comprises one or more sets of electronic devices 20 in-

stalled onto each dumbbell 10, such that the electronic device 20 can transmit related parameter information such as the exercise information and status to a computer or personal smart mobile device 30, and then the computer or personal smart mobile device 30 displays the data of the total amount of exercise (such as the exercise frequency and calorie consumption) by corresponding software. Wherein, the electronic device 20 comprises:

a weight information transmitting sensor 21 (which is an IC sensor), installed onto each weight 11, for showing the weight of a specific weight 11;

a weight information receiving sensor 22 (which is an IC reader), installed at a sheathing end 12 of the weight, for sensing and reading weight information of each weight 11 installed to the sheathing end 12, and transmitting the information to an information integration and computation unit 25;

a G-sensor 23, for sensing of an exercising distance, a frequency and time of the dumbbell 10, and transmitting all of the information to the information integration and computation unit 25;

a power supply unit 24, for supplying an electric power required by the electronic device 20;

an information integration and computation unit 25, for converting the weight information obtained from the weight information receiving sensor 22 and related exercise parameters such as the exercising distance and time sensed by the G-sensor 23 into an "exercise power" by using built-in software, and the exercise power is converted into a calorie value, and this is just a basic physical formula, and thus will not be described here); and

an information output unit 26, for transmitting a computing value obtained from the information integration and computation unit 25 to a computer or personal smart mobile device 30 through a cable or wireless transmission, and displays related exercise data from the computer or personal smart mobile device 30.

[0009] With the aforementioned device, a user can learn about actual data including the amount of exercise, the calorie consumption, and the exercise frequency and time from computer or personal smart mobile device 30 while using the dumbbell 10, so as to have a better control on the exercise effect.

[0010] In addition, an electronic gyroscope 27 is further installed in the electronic device for detecting the spatial

status of the dumbbell 10 anytime, so that the user can know the calorie consumption of the exercise at different using methods to select the best or most suitable using method.

[0011] In FIG. 2, a preferred embodiment of the dumbbell 10 capable of increasing or decreasing the number of the weights 11 is used for illustrating the present invention, wherein a dedicated weight information transmitting sensor 21 is installed at an appropriate position of each weight 11, and two electronic devices 20 are installed at both ends of a handling portion 13 of the dumbbell 10 respectively, such that the corresponding weight information receiving sensor 22 is sheathed on the sheathing end 12 of the dumbbell 10. After the weights 11 are selected and mounted, the weights are screwed and secured by a positioning element 14, and then the weight information receiving sensor 22 of the two electronic devices 20 will sense the weight of each of the weights 11 and accumulate their weights, and then information are transmitted and returned to the information integration and computation unit 25, so that the information integration and computation unit 25 can obtain the total weight of this dumbbell 10 in order to compute the default exercise data for future exercises.

[0012] Similarly, another preferred embodiment of a fixed-weight dumbbell 10 as shown in FIGS. 3 to 5 is provided for illustrating the present invention, the electronic device 20 is wrapped by a rigid material and has a granular form of the threaded portion 28, and each dumbbell 10 has corresponding screw holes 15 formed on both ends of the dumbbell 10, and the dedicated weight information transmitting sensor 21 is installed deep into the screw hole 15, so as to achieve the same expected effect as the foregoing preferred embodiment.

[0013] In FIGS. 4 and 5, each dumbbell 10 includes a designated weight information transmitting sensor 21, such that when the electronic device 20 is installed at a specific dumbbell 10 of a different weight, the user can know the weight information of the specific dumbbell 10.

[0014] Many changes and modifications in the above-described embodiments of the invention can, of course, be carried out without departing from the scope thereof. Accordingly, to promote the progress in science and the useful arts, the invention is disclosed and is intended to be limited only by the scope of the appended claims.

Claims

1. A dumbbell (10) structure capable of delivering exercise information and status, comprising one or more sets of electronic devices (20) installed on each dumbbell, wherein the electronic devices transmit parameter information including related exercise information and status to a computer or a personal smart mobile device with corresponding software, and the computer or personal smart mobile device

displays data of a total amount of exercise.

2. The dumbbell structure capable of delivering exercise information and status as recited in claim 1, wherein the electronic device comprises:

a weight information sensor (21), installed on a weight (11), for showing the weight of a specific weight;
a weight information sensor (22), installed at a position proximate to a sheathing end of the weight, for sensing and reading weight information of each weight mounted onto the sheathing end, and transmitting the information to an information integration and computation unit (25);
a G-sensor (23), for sensing an exercising distance, a use frequency and time of the dumbbell, and transmitting all of said information to the information integration and computation unit;
a power supply unit (24), for supplying an electric power required by the electronic device;
an information integration and computation unit, for converting weight information received from the weight information sensor and related exercise parameters including the exercising distance and time sensed by the G-sensor into an exercise power by built-in software;
an information output unit (26), for transmitting a computing value obtained from the information integration and computation unit to the computer unit (25) or a personal smart mobile device (30) through a cable or wireless transmission.

3. The dumbbell structure capable of delivering exercise information and status as recited in claim 1 or 2, further comprising an electronic gyroscope (27) installed in the electronic device.

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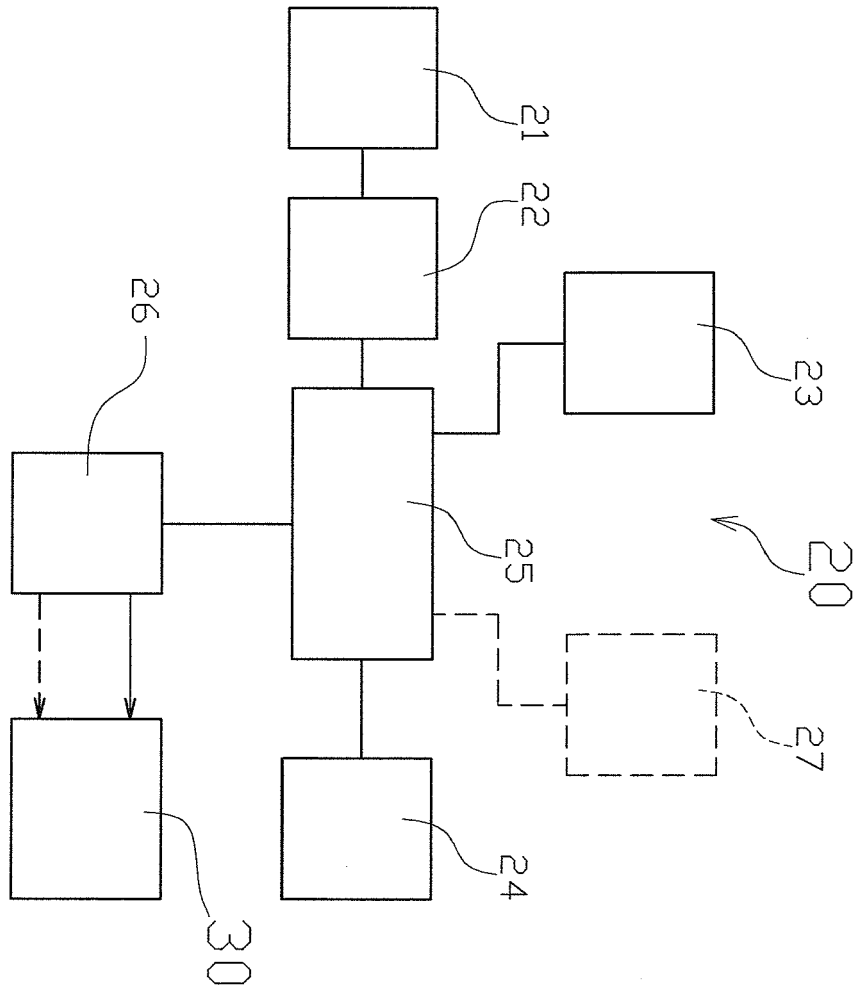
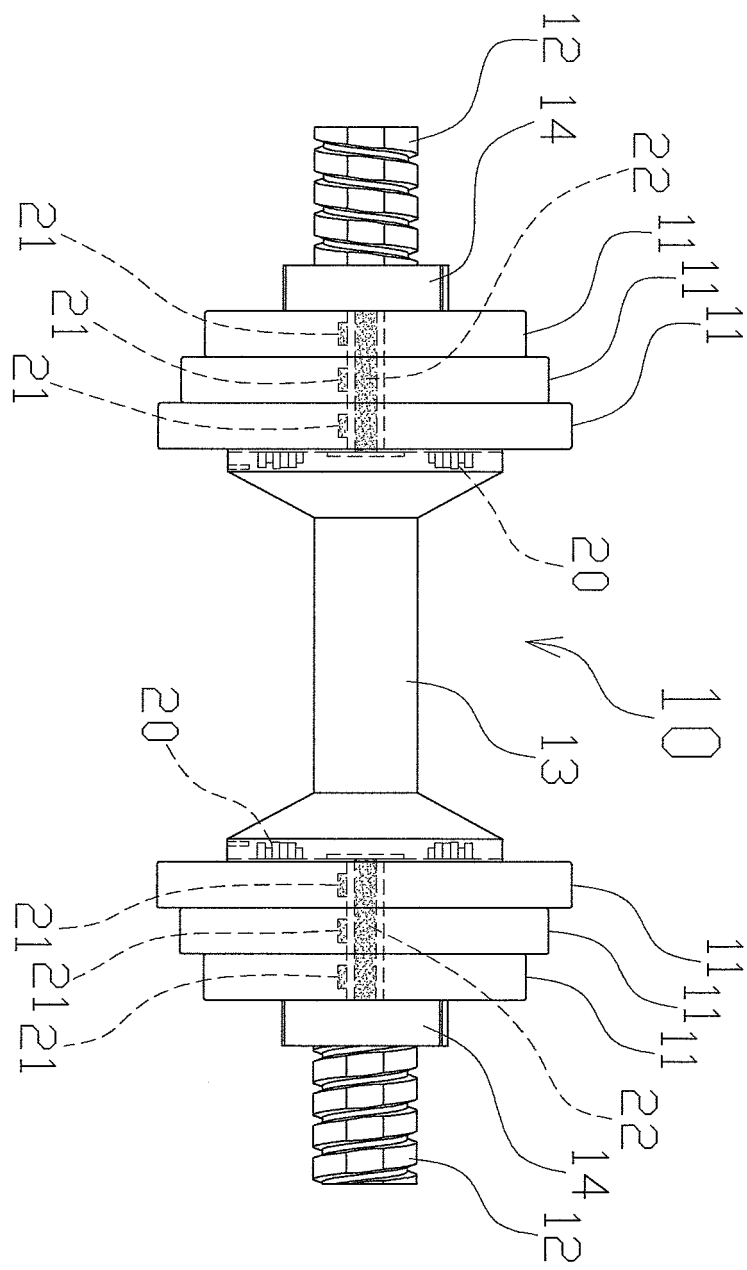
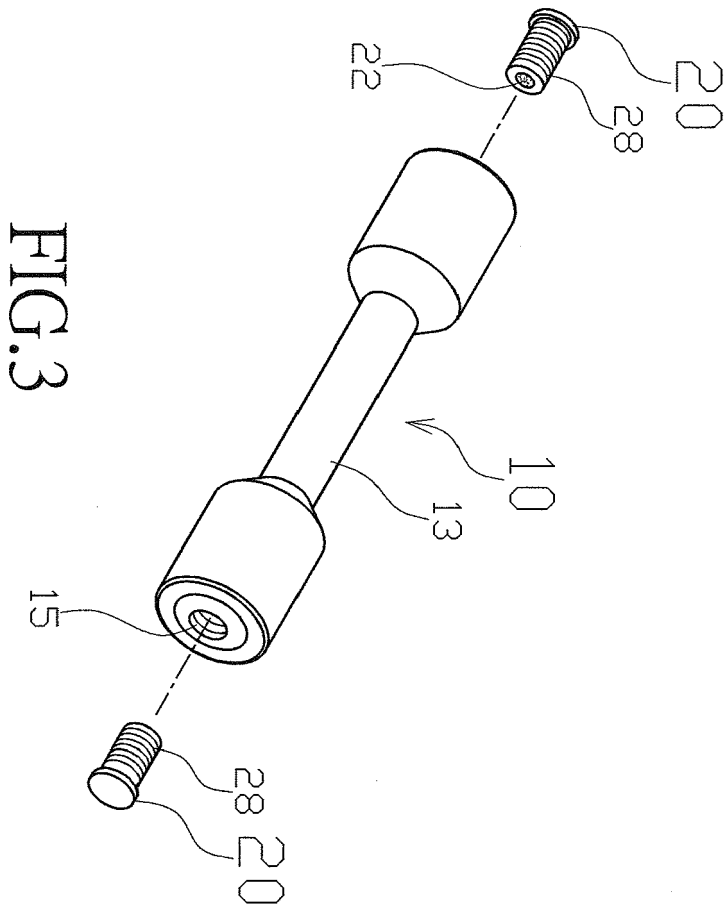


FIG. 1





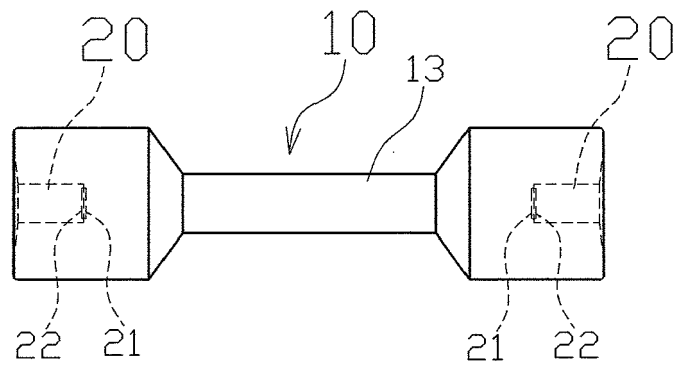


FIG. 4

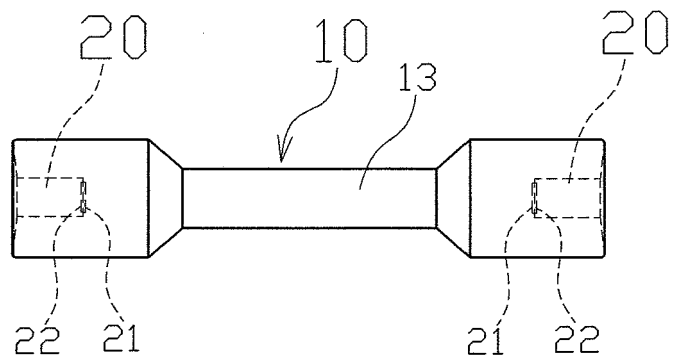


FIG. 5



EUROPEAN SEARCH REPORT

Application Number
EP 11 18 6693

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	US 2010/317488 A1 (CARTAYA JOSE [US]) 16 December 2010 (2010-12-16)	1,3	INV. A63B21/072 A63B71/06
A	* paragraph [0025] - paragraph [0027]; figures *	2	

X	US 2003/100406 A1 (MILLINGTON PETER [US] ET AL) 29 May 2003 (2003-05-29)	1	
A	* paragraph [0025] - paragraph [0027] * * paragraph [0040] - paragraph [0041] * * paragraph [0050] - paragraph [0052]; figures *	2	

X	US 6 014 078 A (ROJAS MICHAEL D [US] ET AL) 11 January 2000 (2000-01-11)	1	TECHNICAL FIELDS SEARCHED (IPC) A63B
A	* column 6; figures *	2	

X	US 2003/211916 A1 (CAPUANO PATRICK J [US]) 13 November 2003 (2003-11-13)	1	
A	* paragraph [0025] * * paragraph [0052] *	2	

X	US 2008/204225 A1 (KITCHEN DAVID [US]) 28 August 2008 (2008-08-28)	1	
A	* paragraph [0057] - paragraph [0060] * * paragraph [0072] - paragraph [0075]; figures *	2	

The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
Munich		8 December 2011	Lundblad, Hampus
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 11 18 6693

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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08-12-2011

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