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(54) **EXERCISE INFORMATION MEASUREMENT APPARATUS, EXERCISE MANAGEMENT METHOD, AND EXERCISE MANAGEMENT PROGRAM**

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ABSTRACT

An exercise information measurement apparatus, an exercise management method, and an exercise management program according to which exercise management for a user can be performed through comparison with another user. An exercise information measurement apparatus includes: an exercise pace information measurement unit that measures exercise pace information of a wearer; a communication unit for performing near-field wireless communication with another apparatus having an exercise pace information measurement unit; an other apparatus exercise pace information storage unit (information acquisition and storage units) acquiring other apparatus exercise pace information measured by the exercise pace information measurement unit of the other apparatus via the communication unit and stores it; and a management information output unit outputting management information for managing the exercise pace information based on the stored other apparatus exercise pace information and the exercise pace information measured by the exercise pace information measurement unit of the exercise information measurement apparatus.

YOUR PACE IS SLOW
PLEASE INCREASE
YOUR PACE!

FIG. 1

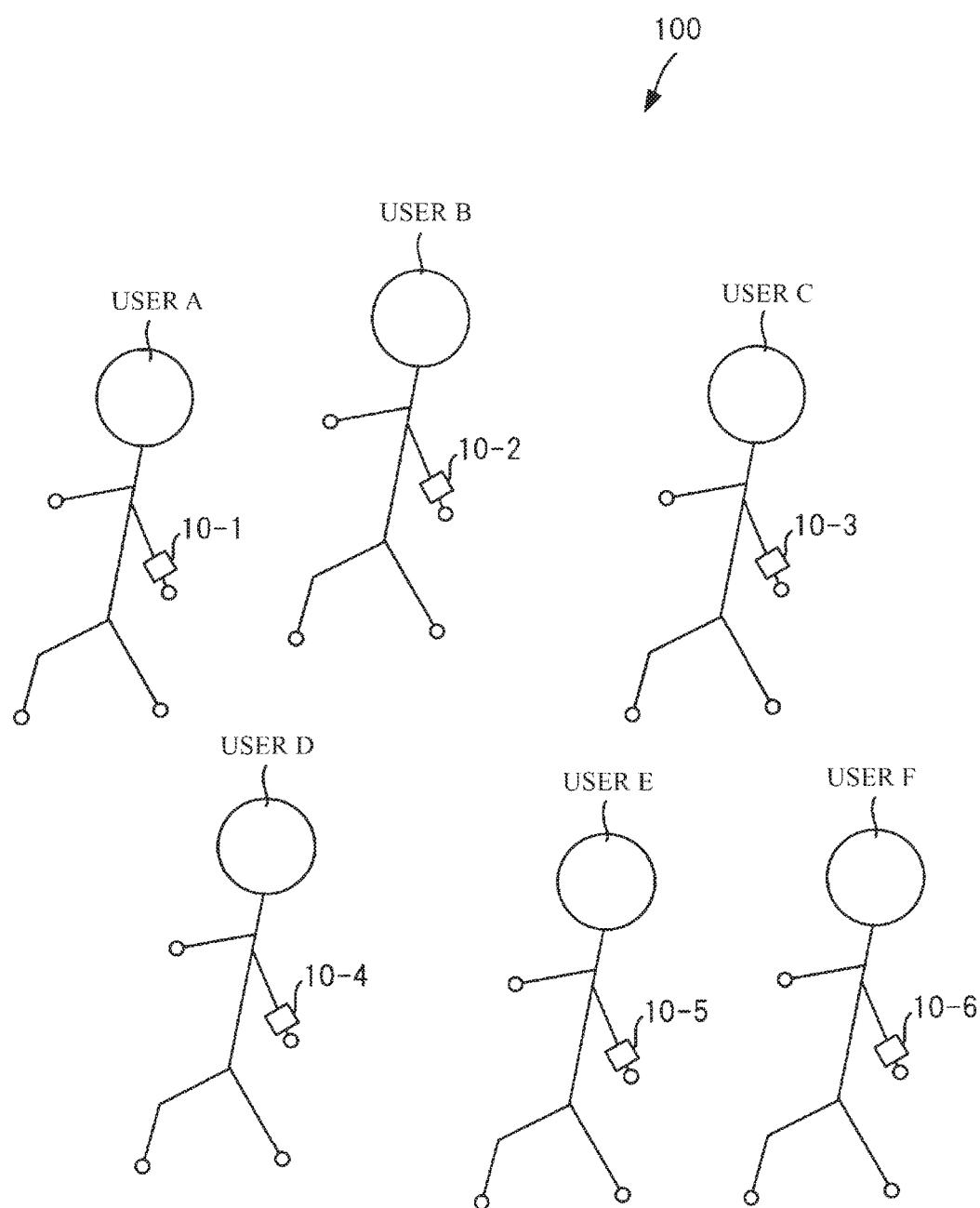


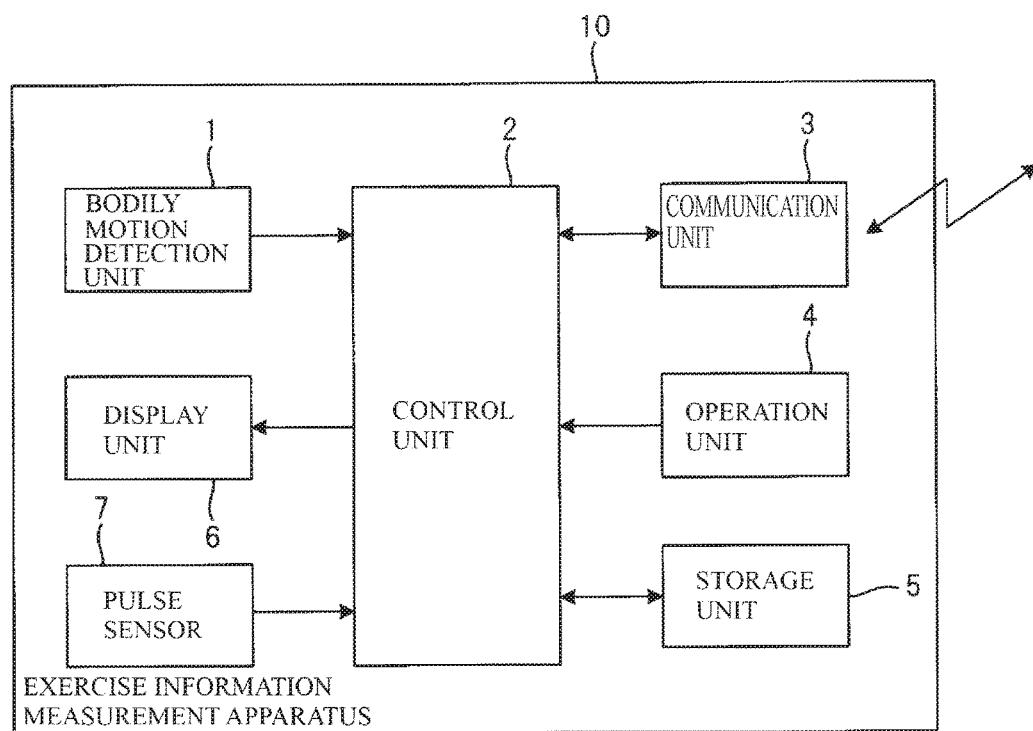
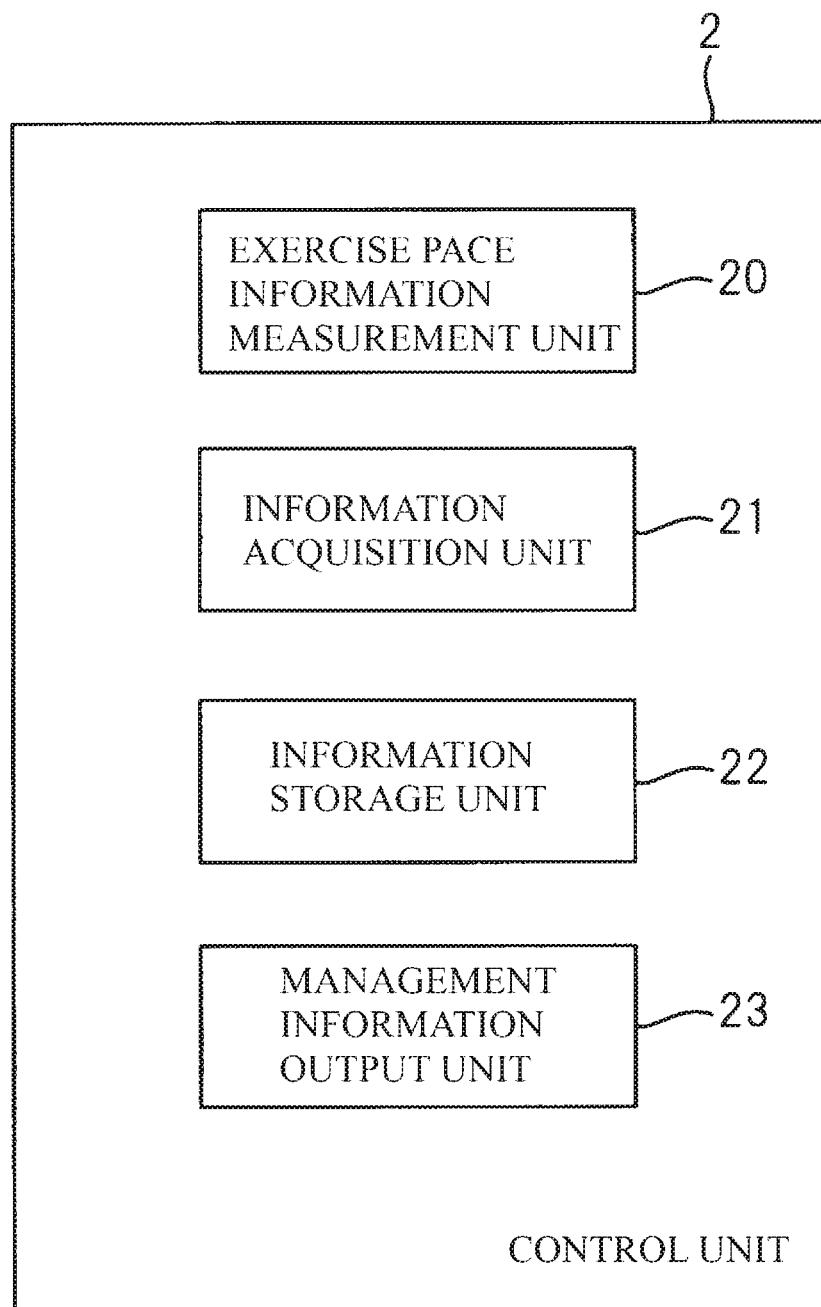
FIG. 2

FIG. 3



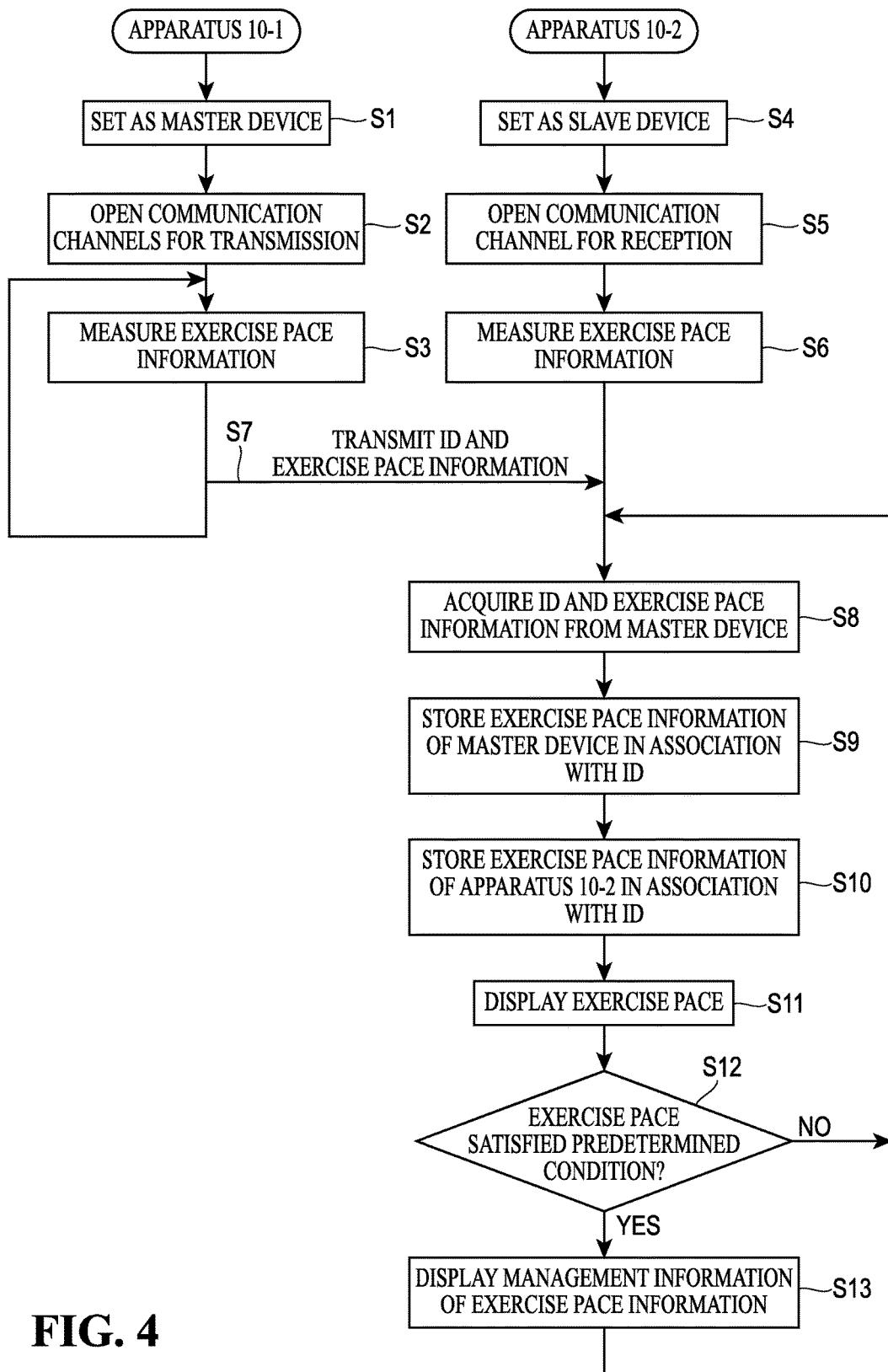


FIG. 4

FIG. 5

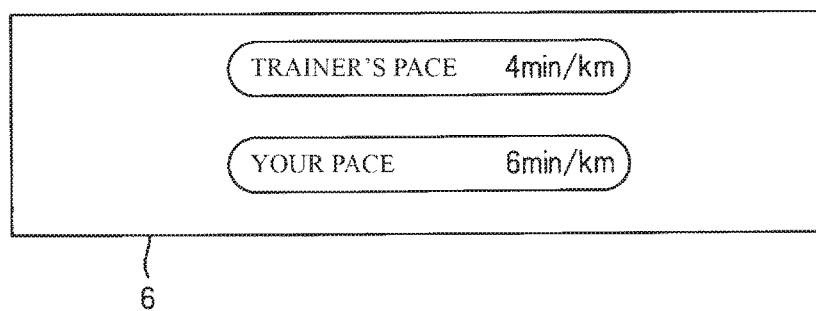


FIG. 6A

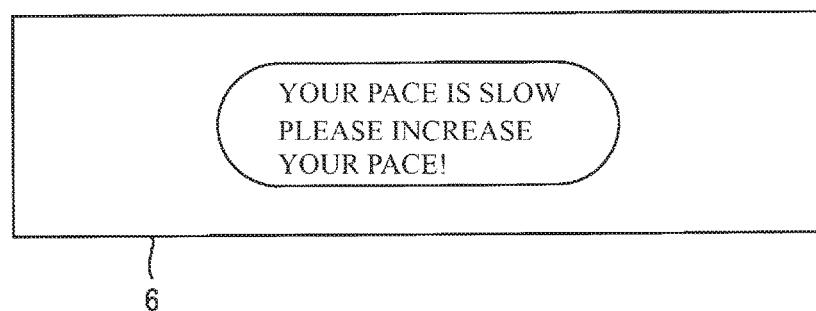


FIG. 6B

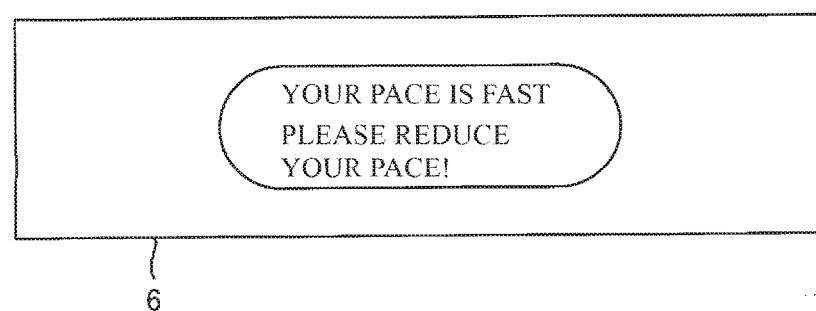
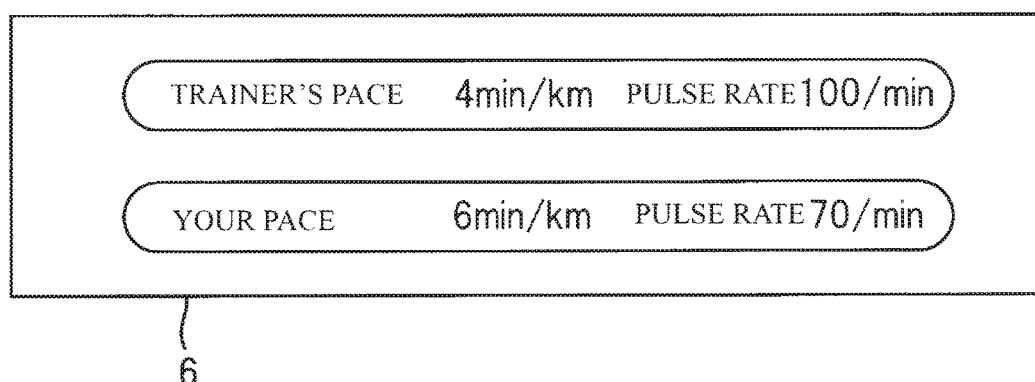


FIG. 7



EXERCISE INFORMATION MEASUREMENT APPARATUS, EXERCISE MANAGEMENT METHOD, AND EXERCISE MANAGEMENT PROGRAM

TECHNICAL FIELD

[0001] The present invention relates to an exercise information measurement apparatus, an exercise management method, and an exercise management program.

BACKGROUND ART

[0002] In recent years, exercise information measurement apparatuses that can measure exercise information such as an activity amount (step count, walking distance, expended calories, etc.) and exercise pace information indicating an exercise pace (walking speed, running speed, etc.) by using a motion detection sensor that detects motion of a body, such as an acceleration sensor or an angular velocity sensor, have been actively developed.

[0003] An exercise information measurement apparatus having a near-field wireless communication function is known as this type of exercise information measurement apparatus, and it is possible to provide various services by using this function.

[0004] For example, Patent Document 1 discloses a pedometer that directly exchanges activity intensities, which is information depending on walking pitch, with another pedometer and determines walking compatibility by comparing the activity intensities.

CITATION LIST

Patent Literature

[0005] Patent Document 1: JP 2011-090426A

SUMMARY OF INVENTION

Technical Problem

[0006] According to Patent Document 1, by using the exercise information of multiple users, it is possible to provide the users with a new service. In the future, it will be necessary to provide various applications using exercise information measured by the exercise information measurement apparatus in order to promote use of the exercise information measurement apparatus.

[0007] The present invention has been made in view of the foregoing circumstances and aims to provide an exercise information measurement apparatus, an exercise management method, and an exercise management program according to which it is possible to perform exercise management for a user through comparison with another user.

Solution to the Problem

[0008] An exercise information measurement apparatus of the present invention includes: an exercise pace information measurement unit configured to measure exercise pace information of a wearer; a communication unit for performing near-field wireless communication with another apparatus having a said exercise pace information measurement unit; an other apparatus exercise pace information storage unit configured to acquire other apparatus exercise pace information measured by the exercise pace information

measurement unit of the other apparatus via the communication unit from the other apparatus and store it; and a management information output unit configured to output management information for managing the exercise pace information based on the stored other apparatus exercise pace information and the exercise pace information measured by the exercise pace information measurement unit of the exercise information measurement apparatus.

[0009] An exercise management method of the present invention is an exercise management method using an exercise information measurement apparatus including an exercise pace information measurement unit configured to measure exercise pace information of a wearer and a communication unit for performing near-field wireless communication with another apparatus having a said exercise pace information measurement unit, the method including: an other apparatus exercise pace information storage step of acquiring other apparatus exercise pace information measured by the exercise pace information measurement unit of the other apparatus via the communication unit from the other apparatus and storing it; and a management information output step of outputting management information for managing the exercise pace information based on the stored other apparatus exercise pace information and the exercise pace information measured by the exercise pace information measurement unit of the exercise information measurement apparatus.

[0010] An exercise management program of the present invention is a program for causing a computer to execute the steps of the exercise management method.

Advantageous Effects of the Invention

[0011] According to the present invention, it is possible to provide an exercise information measurement apparatus, an exercise management method, and an exercise management program according to which it is possible to perform exercise management for a user through comparison with another user.

BRIEF DESCRIPTION OF DRAWINGS

[0012] FIG. 1 is a diagram showing a schematic configuration of a system 100 for illustrating an embodiment of the present invention.

[0013] FIG. 2 is a block diagram showing a configuration example of hardware of an exercise information measurement apparatus 10 shown in FIG. 1.

[0014] FIG. 3 is a diagram showing functional blocks realized by a control unit 2 due to a processor executing a program stored in a storage unit 5 of the exercise information measurement apparatus 10 shown in FIG. 2.

[0015] FIG. 4 is a flowchart for illustrating operations performed by the exercise information measurement apparatus 10 in the system 100.

[0016] FIG. 5 is a diagram showing an example of a screen displayed on a display unit 6 of the exercise information measurement apparatus 10 set as a slave device.

[0017] FIGS. 6A and 6B are diagrams showing an example of a screen displayed on the display unit 6 of the exercise information measurement apparatus 10 set as a slave device.

[0018] FIG. 7 is a diagram showing a modified example of a screen displayed on the display unit 6 of the exercise information measurement apparatus 10 set as a slave device.

DESCRIPTION OF EMBODIMENTS

[0019] Hereinafter, embodiments of the present invention will be described with reference to the drawings.

[0020] FIG. 1 is a diagram showing a schematic configuration of a system 100 for illustrating an embodiment of the present invention. The system 100 includes multiple (in the example shown in FIG. 1, six) exercise information measurement apparatuses 10-1 to 10-6. The exercise information measurement apparatuses 10-1 to 10-6 are used while worn on the bodies of users, and examples thereof include pedometers, activity amount meters, and sports watches.

[0021] In the present embodiment, for example, a case is envisioned in which running is performed as a group composed of six users A to F on a running course in a park or the like.

[0022] In this case, the users A, B, . . . , and F who form the group wear the exercise information measurement apparatuses 10-1, 10-2, . . . , and 10-6 respectively. Also, one of the users A to F is set as a running trainer of the group, and the other members of the group manage their own exercise pace information based on the exercise pace information of the running trainer and their own exercise pace information.

[0023] Note that in order to facilitate understanding of the description, the user A is set as the running trainer of the group. The exercise information measurement apparatus 10-1 worn by the user A is set as the master device in advance through an operation performed by the user A. Also, the exercise information measurement apparatuses 10-2 to 10-6 respectively worn by the user B to user F are set as slave devices through operations performed by the users.

[0024] Accordingly, the users B to F, who are members, can manage their own exercise pace information based on the exercise pace information of the user A (the running trainer) and their own exercise pace information.

[0025] Hereinafter, if there is no need to distinguish between the individual exercise information measurement apparatuses 10-1 to 10-6, "exercise information measurement apparatus 10" will simply be used.

[0026] FIG. 2 is a block diagram showing a configuration example of an exercise information measurement apparatus 10.

[0027] The exercise information measurement apparatus 10 includes a bodily motion detection unit 1, a control unit 2 that performs overall control, a communication unit 3, an operation unit 4, a storage unit 5 including a storage medium such as a flash memory or a ROM (Read Only Memory), a display unit 6 for displaying various types of information, and a pulse sensor 7.

[0028] The bodily motion detection unit 1 detects information (acceleration, angular velocity, etc.) corresponding to bodily motion of a user on whom the exercise information measurement apparatus 10 is worn (includes a state of being inserted in a pocket of an article of clothing). The bodily motion detection unit 1 includes various sensors such as an acceleration sensor and an angular velocity sensor, and a signal processing unit that processes a signal output from the various sensors.

[0029] The pulse sensor 7 detects the pulse rate of the user on whom the exercise information measurement apparatus 10 is worn.

[0030] The control unit 2 mainly includes a processor that executes a program stored in the ROM of the storage unit 5.

[0031] The communication unit 3 is an interface for performing near-field wireless communication with another

exercise information measurement apparatus 10 (hereinafter also referred to as "other apparatus 10"). Near-field wireless communication refers to communication that conforms to a communication standard according to which devices can directly communicate without using a network such as the Internet. A communication interface conforming to ANT, a communication interface conforming to Bluetooth (registered trademark), or the like is used as this interface.

[0032] The operation unit 4 is a device for inputting various instructions to the control unit 2 and is constituted by buttons, a touch panel installed on the display unit 6, or the like.

[0033] The storage unit 5 stores the detection information detected by the bodily motion detection unit 1 and the pulse rate measured by the pulse sensor 7, stores information received via the communication unit 3, and stores information needed for operations performed by the exercise information measurement apparatus 10.

[0034] FIG. 3 is a diagram showing functional blocks realized by the control unit 2 due to a processor executing a program stored in the storage unit 5 of the exercise information measurement apparatus 10 shown in FIG. 2.

[0035] As shown in FIG. 3, the control unit 2 includes an exercise pace information measurement unit 20, an information acquisition unit 21, an information storage unit 22, and a management information output unit 23.

[0036] The exercise pace information measurement unit 20 measures the exercise pace information of the wearer of the exercise pace information measurement unit 20 based on the detection information detected by the bodily motion detection unit 1 or the pulse rate measured by the pulse sensor 7.

[0037] For example, the exercise pace information measurement unit 20 uses the step count in a predetermined period measured based on the detection information and the step width of the user, which was registered in the apparatus in advance, to calculate the walking speed or the running speed, which are movement distances per unit time, as the exercise pace information.

[0038] Alternatively, the exercise pace information measurement unit 20 uses the pulse rate measured by the pulse sensor 7 as the exercise pace information. If the user increases the movement speed, the pulse rate of the user increases in response to the movement speed. Thus, since it can be said that the pulse rate is correlated to the exercise pace, the pulse rate may be used as the exercise pace information.

[0039] Via the communication unit 3, the information acquisition unit 21 acquires the exercise pace information measured by the exercise pace information measurement unit 20 of the exercise information measurement apparatus 10 (other apparatus 10) set as the master device and identification information (ID) of the master device. The information acquisition unit 21 does not perform this processing if the exercise information measurement apparatus 10 in which it is included is set as the master device.

[0040] The information storage unit 22 sets the identification information (ID) and the exercise pace information of the other apparatus 10 set as the master device, which were obtained by the information acquisition unit 21, as target pace information and stores them in the storage unit 5. Also, the information storage unit 22 acquires the exercise pace information measured by the exercise pace information measurement unit 20 of the exercise information measure-

ment apparatus **10** in which it is included and stores it in the storage unit **5** in association with the ID of the exercise information measurement apparatus **10** in which it is included.

[0041] Accordingly, the exercise pace information (target pace information) associated with the ID of the other apparatus **10** set as the master device and the exercise pace information associated with the ID of the exercise information measurement apparatus **10** are stored in the storage unit **5** of the exercise information measurement apparatus **10** set as the slave device. The information acquisition unit **21** and the information storage unit **22** function as an other apparatus exercise pace information storage unit.

[0042] The management information output unit **23** functions in the case where the exercise information measurement apparatus **10** is set as a slave device. Based on the exercise pace information (target pace information) of the other apparatus **10** (master device) and the exercise pace information of the exercise information measurement apparatus **10**, which are stored in the storage unit **5**, the management information output unit **23** outputs management information for managing the exercise pace information of the wearer of the exercise information measurement apparatus **10**.

[0043] Operations of the system **100** constituted as described above will be described.

[0044] FIG. 4 is a flowchart for illustrating operations performed by the exercise information measurement apparatus **10** in the system **100**. FIG. 4 shows operations performed by the exercise information measurement apparatus **10-1**, which is the master device, and one slave device (hereinafter assumed to be the exercise information measurement apparatus **10-2**), and the operations shown in FIG. 4 are performed between the exercise information measurement apparatus **10-1** and the slave devices.

[0045] First, the users A to F who perform running in a group put on the exercise information measurement apparatuses **10-1** to **10-6** respectively. When the user A (the running trainer) operates the operation unit **4** of the exercise information measurement apparatus **10-1** worn by the user A to perform a master device setting instruction, the control unit **2** of the exercise information measurement apparatus **10-1** sets the exercise information measurement apparatus **10-1** as the master device (step S1).

[0046] Upon performing the master device setting, the control unit **2** of the exercise information measurement apparatus **10-1** opens all transmission communication channels of the communication unit **3** (step S2) and transitions to a state of being able to communicate with another exercise information measurement apparatus **10**.

[0047] After step S2, the exercise information measurement apparatus **10-1** set as the master device measures the exercise pace information using the exercise pace information measurement unit **20** (step S3). When the exercise information measurement apparatus **10-1** is in the communicable range of the communication unit **3** of the exercise information measurement apparatus **10-2**, the exercise pace information measured by the exercise pace information measurement unit **20** and the ID of the exercise information measurement apparatus **10-1** are periodically transmitted to the exercise information measurement apparatus **10-2**.

[0048] On the other hand, when the user B operates the operation unit **4** of the exercise information measurement apparatus **10-2** to perform the slave device setting instruc-

tion, the control unit **2** of the exercise information measurement apparatus **10-2** sets the exercise information measurement apparatus **10-2** as a slave device (step S4).

[0049] Upon performing the slave device setting, the control unit **2** of the exercise information measurement apparatus **10-2** that is a slave device opens the reception communication channel of the communication unit **3** (step S5) and enters a state of standing by to receive information from the master device.

[0050] After step S5, the exercise information measurement apparatus **10-2** set as the slave device measures the exercise pace information using the exercise pace information measurement unit **20** (step S6).

[0051] Then, when the exercise information measurement apparatus **10-1** is in the communicable range of the communication unit **3** of the exercise information measurement apparatus **10-2**, the exercise pace information measured by the exercise pace information measurement unit **20** of the exercise information measurement apparatus **10-1** and the ID of the exercise information measurement apparatus **10-1** are transmitted to the exercise information measurement apparatus **10-2** and are received by the exercise information measurement apparatus **10-2** (step S7).

[0052] The exercise pace information and the ID of the master device received by the communication unit **3** are acquired by the information acquisition unit **21** of the exercise information measurement apparatus **10-2** (step S8). Then, the information storage unit **22** of the exercise information measurement apparatus **10-2** stores the acquired exercise pace information of the master device in the storage unit **5** in association with the acquired ID of the master device (step S9).

[0053] Also, the information storage unit **22** of the exercise information measurement apparatus **10-2** stores the exercise pace information measured by the exercise pace information measurement unit **20** of the exercise information measurement apparatus **10-2** in the storage unit **5** in association with the ID of the exercise information measurement apparatus **10-2** (step S10).

[0054] The control unit **2** of the exercise information measurement apparatus **10-2** reads out the exercise pace information associated with the ID of the master device stored in the storage unit **5** and the exercise pace information associated with the ID of the exercise information measurement apparatus **10-2** and outputs information for displaying those pieces of exercise pace information to the display unit **6** as management information. The display unit **6** displays the exercise pace of the master device and the exercise pace of the exercise information measurement apparatus **10-2** based on that information (step S11).

[0055] FIG. 5 is a diagram showing an example of a screen displayed on the display unit **6** of the exercise information measurement apparatus **10-2** set as a slave device.

[0056] As shown in FIG. 5, the exercise pace of the master device read out from the storage unit **5** is displayed as "Trainer's pace: 4 min/km" on the display unit **6**. Also, the exercise pace of the exercise information measurement apparatus **10-2** read out from the storage unit **5** is displayed as "Your pace: 6 min/km" on the display unit **6**.

[0057] The wearer of the exercise information measurement apparatus **10-2** can easily compare the exercise pace of the running trainer and his or her own exercise pace by

looking at the screen shown in FIG. 5, and thus can keep track of whether to increase or decrease his or her own exercise pace.

[0058] Next, the control unit 2 of the exercise information measurement apparatus 10-2 determines whether or not the exercise pace information of the exercise information measurement apparatus 10-2 satisfies a pre-set condition (step S12). This condition is a case in which the difference between the exercise pace information (walking speed or running speed) of the exercise information measurement apparatus 10-2 and the exercise pace information of the master device is greater than or equal to a threshold value. [0059] When it is determined in step S12 that the predetermined condition is satisfied, the control unit 2 of the exercise information measurement apparatus 10-2 outputs information instructing prompting of the user of the exercise information measurement apparatus 10-2 to change the exercise pace as the management information to the display unit 6 (step S13).

[0060] In step S13, for example, if the exercise pace information of the exercise information measurement apparatus 10-2 is faster than the exercise pace of the master device, the control unit 2 of the exercise information measurement apparatus 10-2 reads out the management information giving an instruction to prompt reducing the exercise pace from the storage unit 5. Also, if the exercise pace of the exercise information measurement apparatus 10-2 is lower than the exercise pace of the master device, the control unit 2 of the exercise information measurement apparatus 10-2 reads out the management information giving an instruction to prompt increasing the exercise pace from the storage unit 5.

[0061] Then, the control unit 2 of the exercise information measurement apparatus 10-2 displays a message based on the read-out management information on the display unit 6. For example, a screen shown in FIG. 6(A) or 6(B) is displayed on the display unit 6.

[0062] As described above, according to the system 100, it is possible to check the exercise pace of the wearer (running trainer) of the exercise information measurement apparatus 10-1 set as the master device on the display unit 6 of the exercise information measurement apparatus 10-2 set as a slave device. Also, if the difference between the exercise pace of the exercise information measurement apparatus 10-1 set as the master device and the exercise pace of the exercise information measurement apparatus 10-2 is greater than or equal to the threshold value, a message giving an instruction to increase the exercise pace or a message giving an instruction to reduce the exercise pace is displayed on the display unit 6, whereby the exercise pace information can be easily managed.

[0063] Also, with the system 100, due to the master device and slave devices being set in advance, the exercise information measurement apparatus 10-2 set as the slave device acquires the exercise pace information of the exercise information measurement apparatus 10-1 that is the master device and manages the exercise pace information of the exercise information measurement apparatus 10-2 by comparing the exercise pace information of the master device and the exercise pace information of the exercise information measurement apparatus 10-2.

[0064] There is no limitation to this, and it is also possible for the exercise information measurement apparatuses 10 to acquire the exercise pace information of the other apparatus

10 in the communicable range and manage their own exercise pace information based on the acquired exercise pace information, without setting a master device and a slave device in particular.

[0065] If the exercise information measurement apparatus 10 receives the exercise pace information from multiple other apparatuses 10, it is preferable that the control unit 2 of the exercise information measurement apparatus 10 selects a piece of exercise pace information from among the multiple pieces of exercise pace information that is faster than the exercise pace information measured by the exercise information measurement apparatus 10 in which it is included, sets it as the target pace information, and manages the exercise pace information of the exercise information measurement apparatus 10 in which it is included based on the set exercise pace information. By doing so, it is possible to perform exercise in conformity with another user with a faster pace, and it is possible to perform effective exercise.

[0066] Alternatively, the control unit 2 of the exercise information measurement apparatus 10 may select a piece of exercise pace information from among multiple acquired pieces of exercise pace information that is close to a pre-set target pace, set it as the target pace information, and manage the exercise pace information of the exercise information measurement apparatus 10 based on the set exercise pace information.

[0067] Alternatively, the exercise information measurement apparatus 10 may display the multiple acquired pieces of the exercise pace information on the display unit 6, set a piece of exercise pace information selected by the wearer of the exercise information measurement apparatus 10 from among the displayed pieces of exercise pace information as the target pace information, and manage the exercise pace information of the exercise information measurement apparatus 10 based on the set exercise pace information.

[0068] Also, although the exercise information measurement apparatus 10 displays a message giving an instruction to increase the exercise pace or a message giving an instruction to reduce the exercise pace on the display unit 6, there is no limitation to this. For example, the exercise information measurement apparatus 10 may give an instruction to increase or reduce the exercise pace to the wearer using audio or vibration.

[0069] With the system 100, one of the exercise information measurement apparatuses that can perform near-field wireless communication is set as the master device, the exercise information measurement apparatuses that are not the master device are set as slave devices, and the members, who are wearers of the slave devices, can adjust their own exercise paces to match the exercise pace of the wearer of the master device (the running trainer).

[0070] That is, the wearer of the slave device can manage the exercise pace information in real time while running with the wearer of the master device. Since every exercise information measurement apparatus can be a master device or a slave device, the method of use thereof is not limited, which increases the number of situations in which the exercise information measurement apparatus is used, and it is thereby possible to promote use of the exercise information measurement apparatus.

[0071] Note that the exercise pace information may include both information on the movement speed, such as the walking speed or the running speed, and information on the pulse rate. In this case, as illustrated in FIG. 7, the control

unit 2 of the slave device can display both the movement speed and the pulse rate on the display unit 6.

[0072] As shown in FIG. 7, the movement speed and the pulse rate of the master device, which were read out from the storage unit 5, are displayed on the display unit 6 as "Trainer's pace: 4 min/km, pulse: 100/min" and the movement speed and pulse rate of the exercise information measurement apparatus 10, which were read out from the storage unit 5, are displayed on the display unit 6 as "Your pace: 6 min/km, pulse: 70/min".

[0073] The wearer of the exercise information measurement apparatus 10-2 can easily compare the movement speed and pulse rate of the running trainer and the wearer's own movement speed and pulse rate by looking at the screen shown in FIG. 7, and the wearer can keep track of the pace at which he or she is exercising and the intensity of the exercising. Thus, flexible exercise pace information management that also takes the pulse rate into consideration is possible.

[0074] A program for causing a computer to execute the steps of the flowchart shown in FIG. 4, or a program for causing a computer to function as the functional blocks shown in FIG. 3 may be provided by being stored in a computer-readable non-transitory storage medium.

[0075] Examples of this kind of "computer-readable storage medium" include an optical medium such as a CD-ROM (Compact Disc-ROM) and a magnetic storage medium such as a memory card. Also, this kind of program can be provided through downloading via a network.

[0076] The embodiment disclosed herein is meant to be in all ways exemplary and not limiting. The scope of the present invention is indicated not by the above description but by the claims and is intended to encompass all equivalent meanings of the claims and all modifications within the scope.

[0077] As described above, the following items are disclosed in the present specification.

[0078] The disclosed exercise information measurement apparatus includes: an exercise pace information measurement unit configured to measure exercise pace information of a wearer; a communication unit for performing near-field wireless communication with another apparatus having a said exercise pace information measurement unit; an other apparatus exercise pace information storage unit configured to acquire other apparatus exercise pace information measured by the exercise pace information measurement unit of the other apparatus via the communication unit from the other apparatus and store it; and a management information output unit configured to output management information for managing the exercise pace information based on the stored other apparatus exercise pace information and the exercise pace information measured by the exercise pace information measurement unit of the exercise information measurement apparatus.

[0079] The disclosed exercise information measurement apparatus further includes a display unit, wherein the management information output unit outputs information for displaying the other apparatus exercise pace information as the management information to the display unit.

[0080] With the disclosed exercise information measurement apparatus, if the exercise pace information measured by the exercise pace information measurement unit is different from the other apparatus exercise pace information, the management information output unit outputs informa-

tion giving an instruction to prompt changing of an exercise pace to the wearer of the exercise information measurement apparatus as the management information.

[0081] With the disclosed exercise information measurement apparatus, the other apparatus exercise pace information storage unit stores other apparatus exercise pace information in which an exercise pace based on the other apparatus exercise pace information is faster than an exercise pace based on the exercise pace information measured by the exercise pace information measurement unit of the exercise information measurement apparatus.

[0082] The disclosed exercise management method is an exercise management method using an exercise information measurement apparatus including an exercise pace information measurement unit configured to measure exercise pace information of a wearer and a communication unit for performing near-field wireless communication with another apparatus having a said exercise pace information measurement unit, the method including: an other apparatus exercise pace information storage step of acquiring other apparatus exercise pace information measured by the exercise pace information measurement unit of the other apparatus via the communication unit from the other apparatus and storing it; and a management information output step of outputting management information for managing the exercise pace information based on the stored other apparatus exercise pace information and the exercise pace information measured by the exercise pace information measurement unit of the exercise information measurement apparatus.

[0083] The disclosed exercise management program is an exercise management program for causing a computer to execute the steps of the exercise management method.

INDUSTRIAL APPLICABILITY

[0084] According to the present invention, it is possible to provide an exercise information measurement apparatus, an exercise management method, and an exercise management program according to which it is possible to perform exercise management for a user through comparison with another user.

[0085] While the present invention has been described with reference to specific embodiments, the present invention is not limited to these embodiments, and many modifications can be made without departing from the technical idea of the disclosed invention.

[0086] The present application claims the benefit of Japanese Patent Application 2015-6723 filed on Mar. 27, 2015, which is hereby incorporated herein in its entirety.

REFERENCE SIGNS LIST

- [0087] 100 System
- [0088] 1 Bodily motion detection unit
- [0089] 2 Control unit
- [0090] 3 Communication unit
- [0091] 4 Operation unit
- [0092] 5 Storage unit
- [0093] 6 Display unit
- [0094] 7 Pulse sensor
- [0095] 10, 10-1 to 10-6 Exercise information measurement apparatus
- [0096] 20 Exercise pace information measurement unit
- [0097] 21 Information acquisition unit

[0098] 22 Information storage unit

[0099] 23 Management information output unit

1-6. (canceled)

7. An exercise information measurement apparatus comprising:

an exercise pace information measurement unit configured to measure exercise pace information of a wearer; a communication unit for performing near-field wireless communication with another apparatus having a said exercise pace information measurement unit; an other apparatus exercise pace information storage unit configured to acquire other apparatus exercise pace information measured by the exercise pace information measurement unit of the other apparatus via the communication unit from the other apparatus and store it; a management information output unit configured to output management information for managing an exercise pace of the wearer of the exercise information measurement apparatus based on the stored other apparatus exercise pace information and the exercise pace information measured by the exercise pace information measurement unit of the exercise information measurement apparatus; and

a display unit configured to display the management information,

wherein when the exercise pace information of the exercise information measurement apparatus is faster than the other apparatus exercise pace information, the management information output unit outputs, as the management information, information giving an instruction prompting the wearer of the exercise information measurement apparatus to reduce the exercise pace so that the exercise pace information of the exercise information measurement apparatus and the other apparatus exercise pace information are the same, and when the exercise pace information of the exercise information measurement apparatus is slower than the other apparatus exercise pace information, the management information output unit outputs, as the management information, information giving an instruction prompting the wearer of the exercise information measurement apparatus to increase the exercise pace so that the exercise pace information of the exercise information measurement apparatus and the other apparatus exercise pace information are the same.

8. The exercise information measurement apparatus according to claim 7, wherein there are a plurality of said other apparatuses, and the management information output unit sets, as the other apparatus exercise pace information, a piece of exercise pace information selected from a plurality of pieces of exercise pace information measured by exercise pace information measurement units of the other appara-

tuses, and outputs the management information based on the other apparatus exercise pace information and the exercise pace information of the exercise information measurement apparatus.

9. An exercise management method using an exercise information measurement apparatus including an exercise pace information measurement unit configured to measure exercise pace information of a wearer and a communication unit for performing near-field wireless communication with another apparatus having a said exercise pace information measurement unit, the method comprising:

an other apparatus exercise pace information storage step of acquiring other apparatus exercise pace information measured by the exercise pace information measurement unit of the other apparatus via the communication unit from the other apparatus and storing it;

a management information output step of outputting management information for managing an exercise pace of the wearer of the exercise information measurement apparatus based on the stored other apparatus exercise pace information and the exercise pace information measured by the exercise pace information measurement unit of the exercise information measurement apparatus; and

a display step of displaying the management information on a display unit,

wherein in the display step, when the exercise pace information measured by the exercise pace information measurement unit of the exercise information measurement apparatus is faster than the other apparatus exercise pace information, an instruction prompting the wearer of the exercise information measurement apparatus to reduce the exercise pace so that the exercise pace information measured by the exercise pace information measurement unit of the exercise information measurement apparatus and the other apparatus exercise pace information are the same is displayed, and when the exercise pace information measured by the exercise pace information measurement unit of the exercise information measurement apparatus is slower than the other apparatus exercise pace information, an instruction prompting the wearer of the exercise information measurement apparatus to increase the exercise pace so that the exercise pace information measured by the exercise pace information measurement unit of the exercise information measurement apparatus and the other apparatus exercise pace information are the same is displayed.

10. An exercise management program for causing a computer to execute the steps of claim 9.

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