



US 20070123390A1

(19) **United States**

(12) **Patent Application Publication**  
**MATHIS**

(10) **Pub. No.: US 2007/0123390 A1**

(43) **Pub. Date: May 31, 2007**

(54) **EXERCISE EQUIPMENT WITH INTERACTIVE GAMING COMPONENT**

(52) **U.S. Cl. .... 482/8; 482/9**

(76) **Inventor: CHRISTOPHER E. MATHIS, ELYRIA, OH (US)**

(57) **ABSTRACT**

Correspondence Address:  
**D.A. STAUFFER PATENT SERVICES LLC**  
**1006 MONTFORD ROAD**  
**CLEVELAND HTS., OH 44121-2016 (US)**

Method and apparatus for encouraging significant exercise by a user of an exercise machine, by utilizing an interactive game that can be networked. The game controller is integrated into the exercise machine along with one or more sensors that supply interactive game inputs to the controller and also with one or more actuators that provide interactive game feedback output by the controller. For example, the sensors sense one or more of: an exercise rate, force, frequency, and repetition count; a button click, trigger squeeze, and joystick movement; a force on a steering wheel, handlebar, and flight stick; a tilting force; a key press, touch screen touch, and switch activation; sound, heat, smell, and moisture. For example, the actuators output from the controller game-related feedback including one or more of: vibration, impact force, movement, heat, cold, moving air, sound, visual effects, changes of exercise resistance and rate, scent and moisture.

(21) **Appl. No.: 11/564,834**

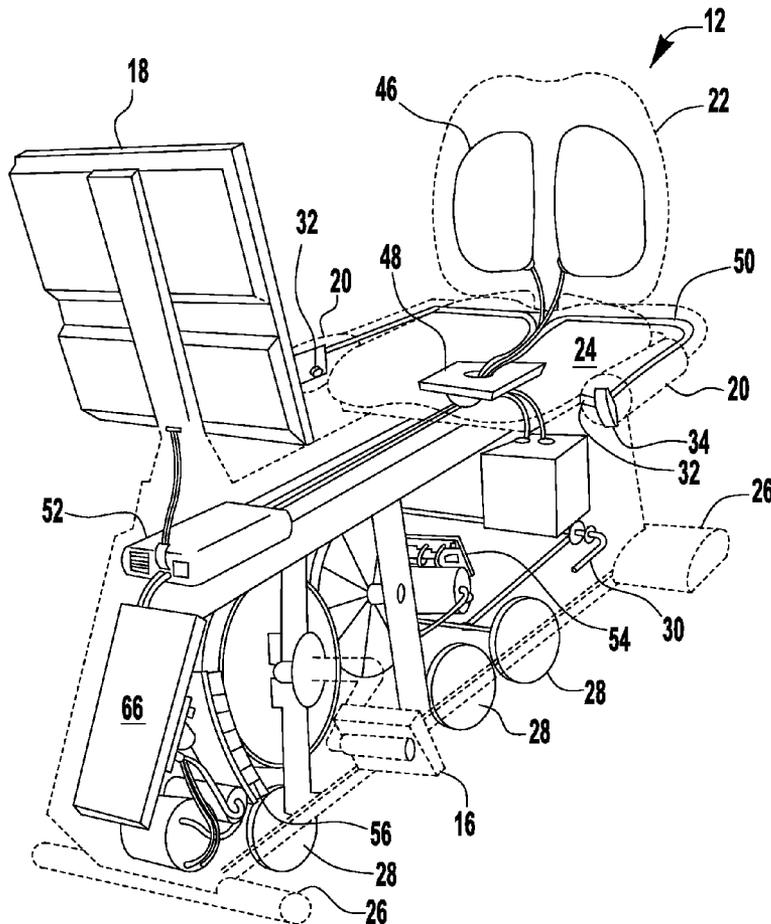
(22) **Filed: Nov. 29, 2006**

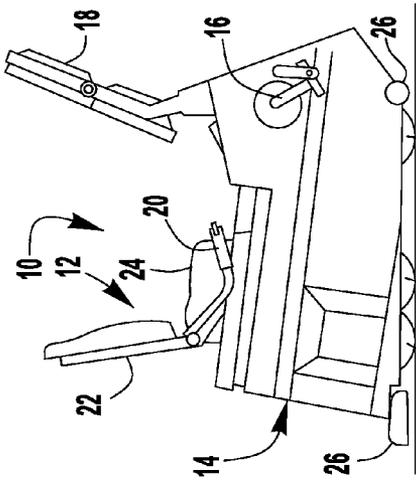
**Related U.S. Application Data**

(60) **Provisional application No. 60/740,477, filed on Nov. 29, 2005.**

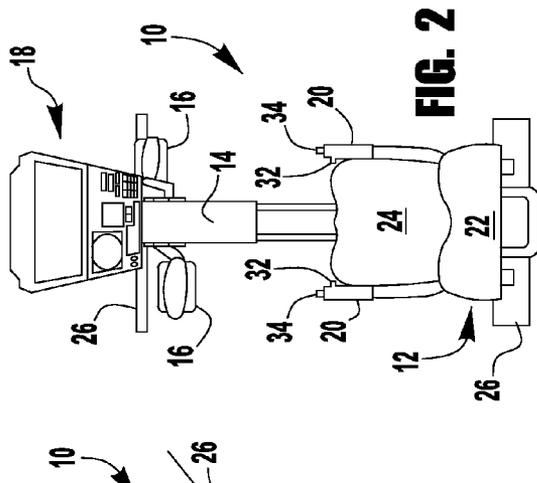
**Publication Classification**

(51) **Int. Cl.**  
**A63B 71/00 (2006.01)**

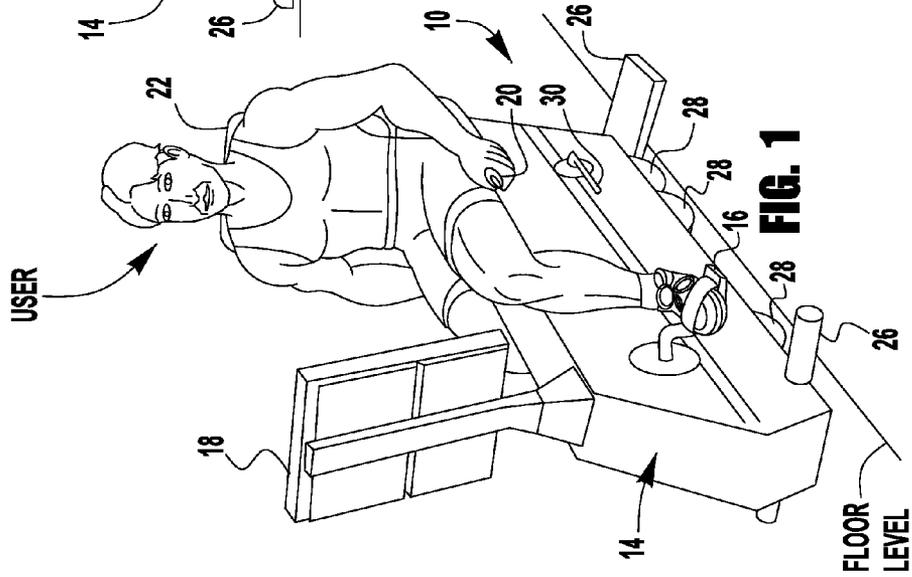




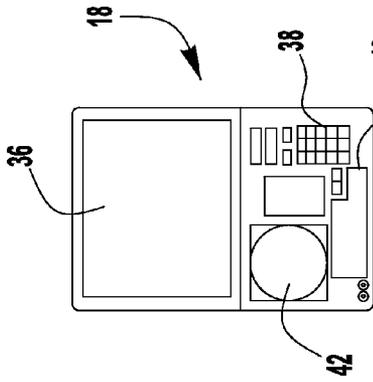
**FIG. 3**



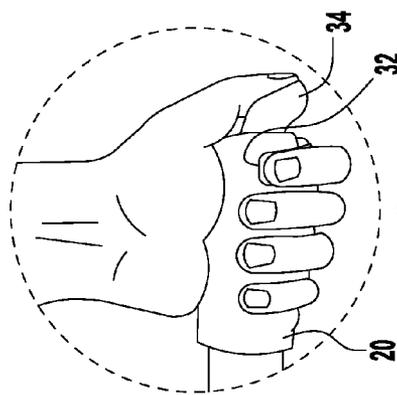
**FIG. 2**



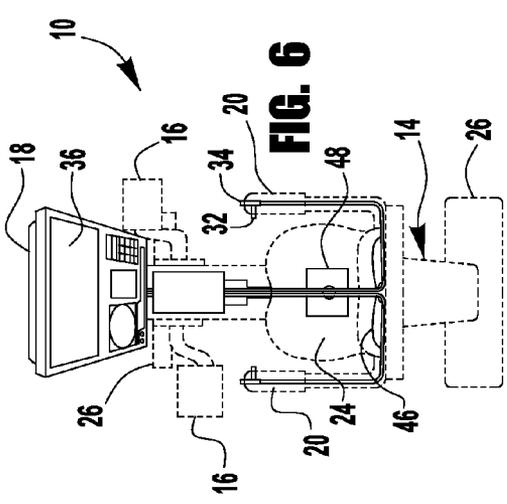
**FIG. 1**



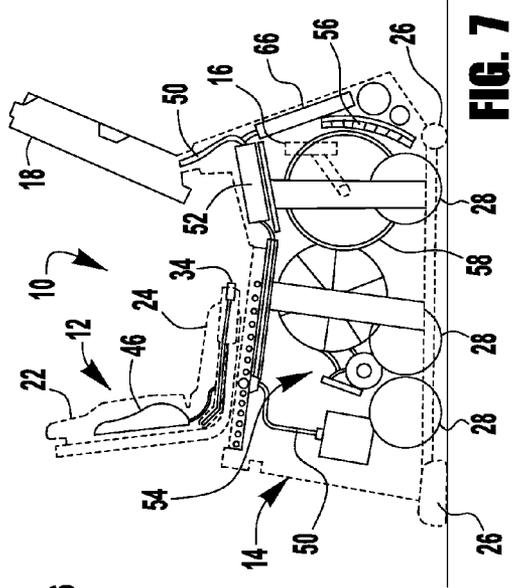
**FIG. 4A**



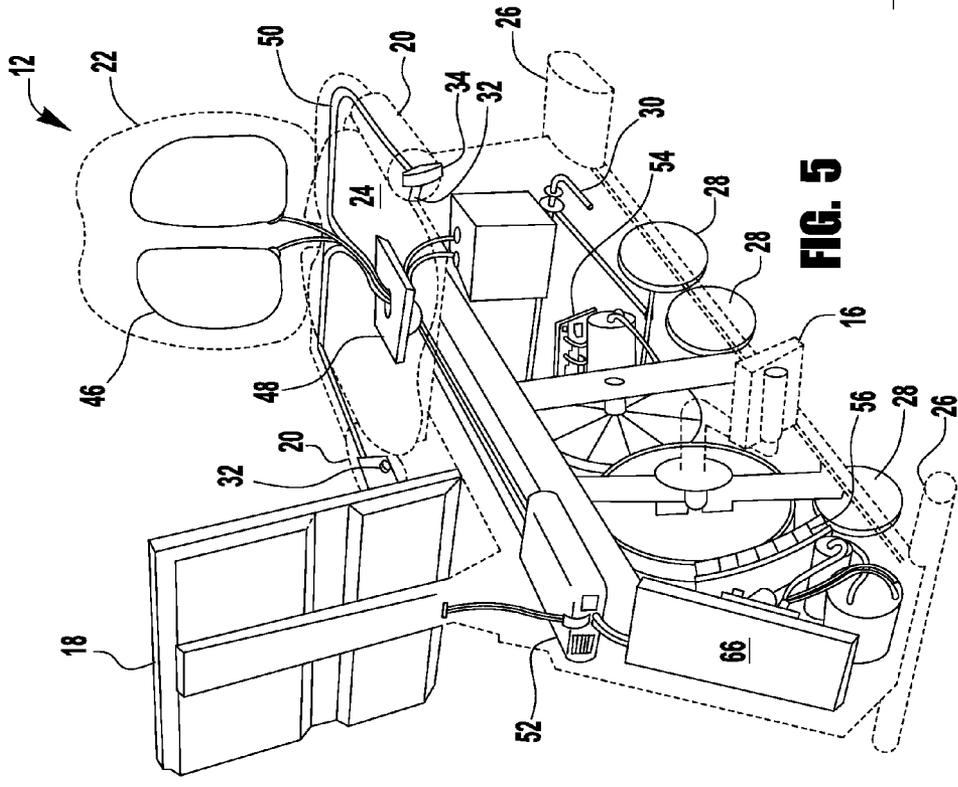
**FIG. 4B**



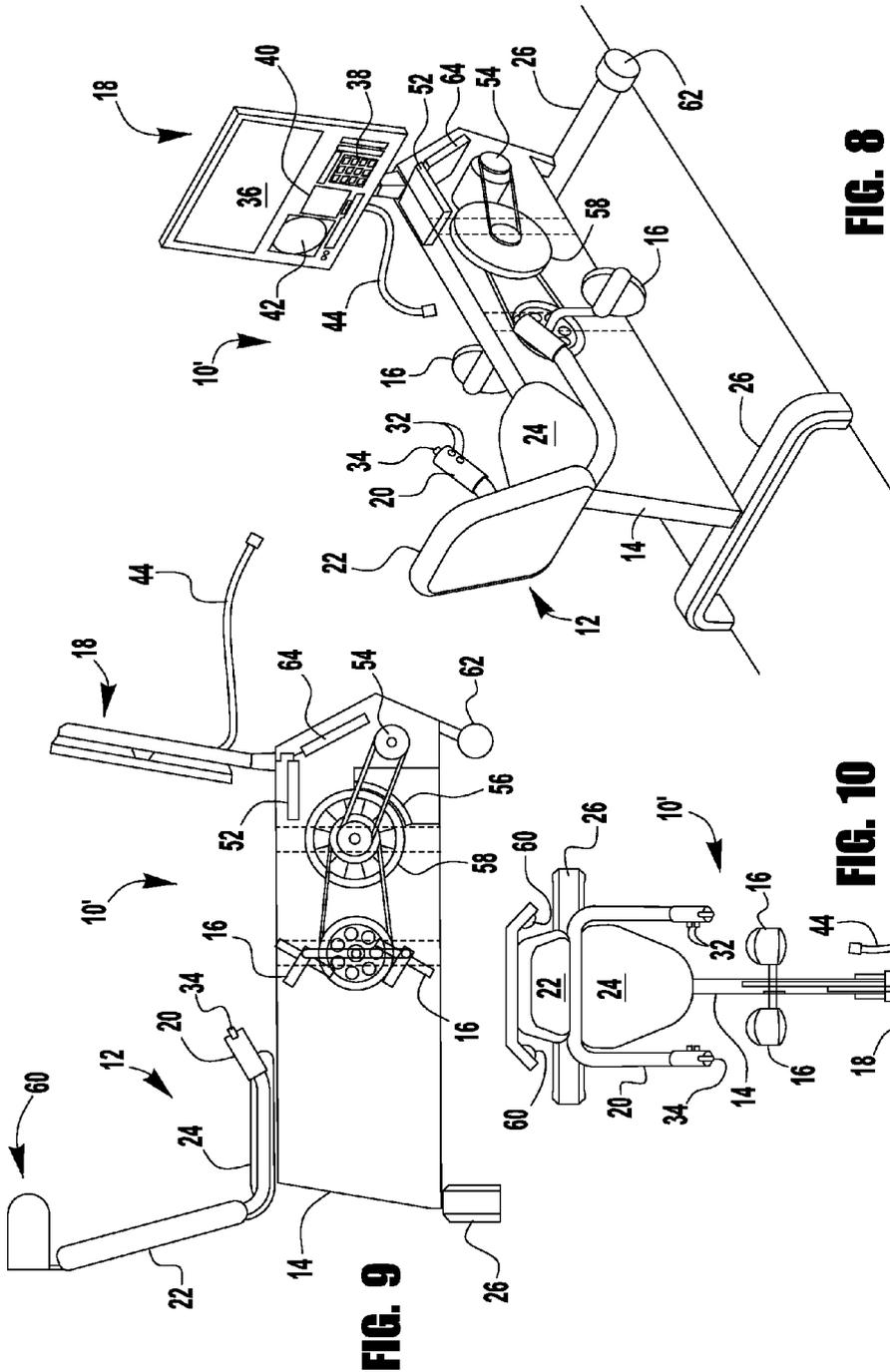
**FIG. 6**



**FIG. 7**



**FIG. 5**



**FIG. 8**

**FIG. 10**

**FIG. 9**

**EXERCISE EQUIPMENT WITH INTERACTIVE GAMING COMPONENT**

**CROSS-REFERENCE TO RELATED APPLICATIONS**

[0001] This application claims the benefit of U.S. Provisional Patent Application No. 60/740,477 filed Nov. 29, 2005 by C. E. Mathis, and which is entirely incorporated by reference herein.

**TECHNICAL FIELD OF THE INVENTION**

[0002] The present invention relates to exercise devices and, more particularly to said devices coupled with interactive games.

**BACKGROUND OF THE INVENTION**

[0003] Physical fitness requires exercise that works the muscles of one's body. Many people prefer to take their exercise in a controlled environment such as indoors where inclement weather or unsuitable location don't interfere. Calisthenics, jazzercise, isometrics, weight lifting, and so on can be very effective forms of exercise, but for many people they tend to be uninteresting and/or too rigorous (e.g., high impact aerobics). In order to maintain interest and incentive for ongoing exercise, and in order to provide indoor equivalents of popular sports, a great variety of exercise machines/devices have been developed for use as fitness/exercise equipment. Examples include treadmills for walking/running, stationary bicycles, stair steppers, elliptical trainers, rowing machines, and many more.

[0004] Although the various exercise machines provide variety in forms of exercise activity, some desire more mental stimulation to encourage continued use, or to encourage more effective exercise. Some of this is provided by programmable machines, for example a treadmill that varies the speed and even the slope in order to simulate a cross-country run on varied terrain.

[0005] Exercise videos have long been available to lead the exerciser in interesting exercise routines, for example kick boxing. Recently the popularity of video games has been utilized to enhance exercise by requiring concentration for mental stimulation and introducing challenging requirements such as certain exercising actions in response to, or as control inputs for, an interactive video game.

[0006] The "Exerstation" by Powergrid Fitness of Laurel, Md. as seen at www.powergridfitness.com is an "isometric home gym fitness machine utilizing ISOCOR™ technology (located in the alloy steel tube that connects the controller to the base) which measures how hard the user is pushing and pulling on the controller," thereby using the whole body to play a video game. According to their advertisement: "Push the Exer-station controller in the direction you want your on-screen character to move. Two microprocessors translate the force into actual movement in the game. The harder you push, the faster you go. The Exer-station uses 4 strain gauges to measure forces applied in the X and Y axis. A new manufacturing technique was developed to integrate the sensor array inside the alloy steel tube that supports the controller. Two microprocessors are used to translate the pressure readings into a joystick data stream that is compatible with all major video game consoles. An LCD status

display shows total workout time, pounds lifted, and current effort level." Instructions are given for adapting the Exer-station outputs to make suitable video console joystick inputs for a variety of their action games such as car races and the like.

[0007] The Cateye Fitness Game Bike is sold online at www.videogamebikes.com by Health Edutainment Corporation of Agoura Hills, Calif. They describe it as follows: "It is a revolutionary plug and play Video Gamebike that fully controls every movement on the screen with your own body movements. Because the Game Bike is designed to serve as the Video Game Controller, when you pedal faster, the Bicycle, Car, Boat or Skier on screen goes faster. Steering the bike's handlebar moves the object in the direction that you are turning. These actions make the game even more realistic than using simply the game's controller. Over 70 Sony Play Station Video Racing Games can be used to with this bike. In addition, you can also purchase for a nominal fee, an adapter which also allows this Game Bike to interface with Game Cube, X Box or a Computer and all of the Video Racing Games that you already own. A wireless video game adapter is also available. If you purchase 2 bikes, then two people can race against each other on screen. The Game Bike has 8 different workload levels. Two sizes are available; one for kids (3'6" to 5' tall, with a maximum weight of 250 pounds) and one for teens/adults (5' to 6'5" tall with a maximum weight of 250 pounds)."

[0008] As with any form of entertainment, user expectations continue to rise as the user becomes familiar with the current state of the art. An object of the present invention is to push the envelope of game-type exercise equipment by adding inventive features that make the games more interactive and thus more engaging for the user, thereby encouraging significant exercise by making the experience more enjoyable.

[0009] Another object is to overcome limitations of the prior art game exercise machines wherein a game console and video display (e.g., television) are required external of the exercise machine. This is cumbersome outside a home environment, especially in a commercial fitness center where many exercise machines are concurrently in use and crowded into a limited area.

**BRIEF SUMMARY OF THE INVENTION**

[0010] According to the invention, an exercise-game machine, i.e., an exercise machine combined with an interactive game component, comprises: an exercise machine; a display built into the exercise machine; one or more sensors attached to the exercise machine; and a game controller that is electrically connected to the one or more sensors as inputs, and that is electrically connected to the display as an output.

[0011] Further according to the invention, the game controller is preferably built into the exercise machine.

[0012] Further according to the invention, preferably the one or more sensors are selected from the group consisting of: an exercise rate sensor, an exercise force sensor, an exercise frequency sensor, an exercise repetition counter, a push button, a trigger, a joystick, a steering wheel, a handlebar, a flight stick, a tilt sensor, a keypad, a touch screen, a switch, a sound detector, a temperature sensor, an odor sensor, and a moisture sensor; and also preferably the sensors are integrated into the exercise machine.

[0013] According to the invention, the exercise-game machine further comprises one or more actuators that are electrically connected to the game controller as outputs, and that are actuatingly attached to the exercise machine. Preferably the one or more actuators are selected from the group consisting of a vibrator, an impact force actuator, a movement actuator, a heating device, a cooling device, a fan, a speaker, a display screen, an exercise resistance adjuster, a motor, a moisture dispenser and a scent dispenser; and the actuators are integrated into the exercise machine.

[0014] According to the invention, the exercise-game machine further comprises: a built-in audio player with suitable speaker/headphone, amplifier, controls, and provisions for loading and unloading removable media, if any.

[0015] According to the invention, the exercise-game machine further comprises provisions for temporarily connecting external audio players to a sound system and/or power supply of the exercise-game machine.

[0016] According to the invention, the exercise-game machine further comprises a communication connection between the game controller and a network that includes another game controller.

[0017] According to the invention, the exercise-game machine further comprises retractable wheels that can be lowered to rollingly support the exercise-game machine, and that can be raised to transfer support to stationary feet.

[0018] According to the invention, the exercise-game machine further comprises rollers on one of the front and rear support legs that rollingly support one end of the exercise-game machine while the other of the front and rear support legs provides stationary support such that the stationary support leg must be raised to allow rolling movement of the exercise-game machine.

[0019] According to the invention, an exercise-game machine comprises: an exercise machine; an interactive game controller that is built into the exercise machine; and one or more actuators that are actuatingly attached to the exercise machine and electrically connected to the interactive game controller as outputs.

[0020] According to the invention, the exercise-game machine further comprises: one or more sensors that are sensingly attached to the exercise machine and electrically connected to the interactive game controller as inputs; wherein the one or more sensors are selected from the group consisting of: an exercise rate sensor, an exercise force sensor, an exercise frequency sensor, an exercise repetition counter, a push button, a trigger, a joystick, a steering wheel, a handlebar, a flight stick, a tilt sensor, a keypad, a touch screen, a switch, a sound detector, a temperature sensor, an odor sensor, and a moisture sensor; and the sensors are integrated into the exercise machine.

[0021] Further according to the invention, the one or more actuators are selected from the group consisting of: a vibrator, an impact force actuator, a movement actuator, a heating device, a cooling device, a fan, a speaker, a display screen, an exercise resistance adjuster, a motor, a moisture dispenser and a scent dispenser; and the actuators are integrated into the exercise machine.

[0022] According to the invention, the exercise-game machine further comprises a built-in audio player with

suitable speaker/headphone, amplifier, controls, and provisions for loading and unloading removable media, if any.

[0023] According to the invention, the exercise-game machine further comprises provisions for temporarily connecting external audio players to a sound system and/or power supply of the exercise-game machine.

[0024] According to the invention, the exercise-game machine further comprises a communication connection between the game controller and a network that includes another game controller.

[0025] According to the invention, a method for encouraging use of an exercise machine by utilizing an interactive game is disclosed, the method comprising the steps of: integrating an interactive game controller into the exercise machine; sensingly attaching one or more sensors to the exercise machine and electrically connecting the one or more sensors to the interactive game controller as interactive game inputs; and actuatingly attaching one or more actuators to the exercise machine and electrically connecting the one or more actuators to the interactive game controller as interactive game feedback outputs.

[0026] According to the invention, the method further comprises the step of using the one or more sensors to sense and input to the controller one or more of: an exercise rate, an exercise force, an exercise frequency, an exercise repetition count, a button click, a trigger squeeze, a joystick movement, force on a steering wheel, force on a handlebar, force on a flight stick, a tilting force, a key press, a touch screen touch, a switch activation, sound, heat, smell, and moisture.

[0027] According to the invention, the method further comprises the step of using the one or more actuators to output from the controller game-related feedback including one or more of vibration, impact force, movement, heat, cold, moving air, sound, visual effects, changes of exercise resistance, changes of exercise rate, scent and moisture.

[0028] According to the invention, the method further comprises the step of communicatively connecting the game controller with a network that includes another game controller.

[0029] Other objects, features and advantages of the invention will become apparent in light of the following description thereof.

#### BRIEF DESCRIPTION OF THE DRAWINGS

[0030] Reference will be made in detail to preferred embodiments of the invention, examples of which are illustrated in the accompanying drawing figures. The figures are intended to be illustrative, not limiting. Although the invention is generally described in the context of these preferred embodiments, it should be understood that it is not intended to limit the spirit and scope of the invention to these particular embodiments.

[0031] Certain elements in selected ones of the drawings may be illustrated not-to-scale, for illustrative clarity. The cross-sectional views, if any, presented herein may be in the form of "slices", or "near-sighted" cross-sectional views, omitting certain background lines which would otherwise be visible in a true cross-sectional view, for illustrative clarity.

[0032] Elements of the figures can be numbered such that similar (including identical) elements may be referred to with similar numbers in a single drawing. For example, each of a plurality of elements collectively referred to as **199** may be referred to individually as **199a**, **199b**, **199c**, etc. Or, related but modified elements may have the same number but are distinguished by primes. For example, **109**, **109'**, and **109''** are three different elements which are similar or related in some way, but have significant modifications. Such relationships, if any, between similar elements in the same or different figures will become apparent throughout the specification, including, if applicable, in the claims and abstract.

[0033] The structure, operation, and advantages of the present preferred embodiment of the invention will become further apparent upon consideration of the following description taken in conjunction with the accompanying drawings, wherein:

[0034] FIG. 1 is a perspective view of a user on a first embodiment of an exercise-game machine with transport wheels raised off the floor, according to the invention;

[0035] FIG. 2 is a top view of the exercise-game machine of FIG. 1 according to the invention;

[0036] FIG. 3 is a side view of the exercise-game machine of FIG. 1 but with the transport wheels lowered to rollingly support the machine according to the invention;

[0037] FIG. 4A is a display face view of a display and I/O panel portion of the exercise-game machine of FIG. 1 according to the invention;

[0038] FIG. 4B is a detail view of a handgrip of the exercise-game machine of FIG. 1 according to the invention;

[0039] FIG. 5 is a perspective view of the exercise-game machine of FIG. 1 with selected external surfaces made transparent for a view of internal components according to the invention;

[0040] FIG. 6 is a top view of the exercise-game machine of FIG. 5 according to the invention;

[0041] FIG. 7 is a side view of the exercise-game machine of FIG. 5 according to the invention;

[0042] FIG. 8 is a perspective view of a second embodiment of an exercise-game machine with selected external surfaces made transparent for a view of internal components according to the invention;

[0043] FIG. 9 is a side view of the exercise-game machine of FIG. 8 but with speakers attached to the top of the seatback, and with a variant arrangement of drive components according to the invention; and

[0044] FIG. 10 is a top view of the exercise-game machine of FIG. 9 according to the invention.

#### DETAILED DESCRIPTION OF THE INVENTION

[0045] The overall concept of this invention is to integrate (build in) an interactive gaming component with exercise and/or fitness equipment (machines). At the very least, this provides an entertaining diversion, and if well implemented adds incentive to exercising by making it more fun.

[0046] The interactive gaming component can be as simple as a standard video game with a display and hand controls built into the machine. This would function as an entertaining diversion unrelated to the exercise activity. In its best form, however, the invention correlates the game to the exercise and therefore uses input from the machine such as exercise rate (e.g., pedaling speed) to control a game activity, and outputs game-related feedback to the user such as exercise resistance changes (e.g., pedal resistance) and even sensory virtual reality effects such as vibration, tilt, impact, fan generated "wind", sound effects, seat temperature, etc. Thus, for example, the user is on an exercise bicycle (e.g., **10**, **10'**) which controls a virtual bicycle in a race shown real-time on a monitor screen **36**, the user providing both pedaling speed and steering for the virtual bike through the pedals **16** and handgrips **20** of the actual exercise bike/machine **10**, **10'**.

[0047] Through network communication connections (e.g., wired **44**, wireless **66**), the user can even compete in real time with other exercise machine users in the same fitness center or in remote locations via internet connectivity. Furthermore, the competing users can be on different types of game-exercise machines **10**, **10'** since the game and game controller **52** are preferably adaptable to work with the different machine types. Even further, it is possible to compete between a user on a game-exercise machine **10**, **10'** and another user that is playing the same or related game on a non-exercise machine, for example on a commercial game console connected to a television display and a handheld joystick.

[0048] The game activity does not have to be directly related to the type of exercise machine. For example, a virtual fighter could swing a sword, run, jump etc. with the nature of the activity being selected by a set of push buttons **32** on the machine handgrip(s) **20**, while the speed, frequency, and/or force of the sword blows; the running speed; the jumping distance/height, and the like being controlled by the user's exercising speed; and the virtual direction can be controlled by a thumb-operated joystick **34** on the handgrip **20** or even by directed force applied to the handgrip **20** itself. In another example, a leg-lift weight training machine (not illustrated) uses the frequency, timing, height, and/or duration of the lift to control virtual activities in a fighting game. Given this teaching, game designers and fitness experts should be able to develop a wide variety of integrated game-exercise machine combinations according to this invention.

[0049] The illustrated embodiment is a recumbent bicycle exercise machine **10**, **10'**, shown in two of many possible forms, a first variety **10** being illustrated in FIGS. 1-7 and a second variety **10'** being illustrated in FIGS. 8-10. Given the teachings herein, it should be apparent that the inventive concept can be applied to a wide range of fitness/exercise machines; for example, but not limited to: stationary bike, treadmill, stair stepper, rowing machine, elliptical, Nordic ski simulator, specific muscle training machines, etc. For each machine, the interactive gaming component can be adapted to a corresponding sport or activity, and/or the various game inputs and outputs can be suitably adapted to a desired game.

[0050] In general, the interactive gaming component being integrated with an exercise machine comprises:

[0051] Computer/game controller

[0052] Inputs from the user (e.g., sensors on the equipment including user-manipulated controls)

[0053] Game outputs (feedback) to the user (e.g., visual, audible, sensory)

[0054] Accessories (e.g., music player, multi-user interaction)

[0055] Referring now to FIGS. 1-7, a first embodiment of the inventive exercise-game machine 10 is an enhanced recumbent bicycle exercise machine. As in a standard recumbent bicycle exercise machine, the exercise-game machine 10 has a frame 14 mounted on floor stand feet 26 that extend laterally to prevent tipping over. A seat 12 having at least a seat bottom 24 and preferably a seatback 22 is mounted on the top rear of the frame 14, preferably with some standard form of fore-aft and/or height adjustment capability. Bicycle pedals 16 are appropriately mounted on the frame 14 and attached to a flywheel 58 with an associated braking/resistance mechanism 56 that is adjustable for increasing and decreasing the amount of pedaling resistance. Finally, hand grips 20 are provided for the user, mounted on the seat 12 as shown or mounted elsewhere (e.g., as a handlebar 20).

[0056] Inventive additions to the recumbent bicycle fitness machine 10, 10' comprise interactive game components including a display 18 mounted on the front of the frame 14 at a position suitable for easy viewing by the user; one or more pushbuttons 32 positioned in the handgrips 20 for easy actuation by the user's fingertip(s), a joystick 34 positioned for thumb actuation (optionally replaced on one or both handgrips 20 by a trigger button 34); input/output (I/O) devices 46, 48 in the seat back 22 and seat bottom 24, respectively; a controller 52 (including the functions of a game console); a pedal speed sensor/motor 54; electronically controlled brake/resistance control 56; and a wireless LAN interface 66. The display 18 has, for example, a color monitor screen 36 that may also be a touchscreen; a keypad and/or keyboard and/or push buttons 38; miscellaneous I/O 40 (e.g., switches, buttons, indicator lights, speaker, mike, fan, scent emitter, etc.); and optionally a CD or DVD player 42 for music, video, and/or game storage and playing. Cartridges, removable memory devices, and removable playback units (MP3, CD player, etc.) may also be connected via the player 42. More details are provided herein below.

[0057] An added convenience feature for exercise machines like the illustrated recumbent bicycle 10 is a set of retractable wheels 28 (e.g., two or three on each side of the frame 14) that are controlled by a manual lever 30. When the machine 10 is to be used, the lever 30 is turned to retract/raise the wheels 28 such that the machine 10 is supported on stationary front and back feet 26 as shown in FIGS. 1 and 7. In order to easily roll the machine 10 to a different location, the lever 30 is turned to lower/extend downward the wheels 28 such that the machine 10 is lifted off of the front and back feet 26 and is rollingly supported by the free-rolling retractable wheels 28, as shown in FIG. 3. A variant of this convenience feature is shown in FIGS. 8-10 which illustrate a second embodiment of a recumbent bicycle type of exer-

cise-game machine 10' according to the invention. The second machine 10' utilizes rollers 62 on the front one of the legs 26, such that to move the machine 10', a person would lift the back end of the frame 14 (e.g., by the back one of the legs 26) and push or pull the machine 10' as it rolls on the rollers 62.

[0058] FIGS. 8-10 also show some other forms of the interactive game component. A plug cable 44 is a power cord and/or a wired LAN cable (e.g., Ethernet), and/or a plug cable for connecting external devices (an audio player, for example) to the exercise-game machine 10, 10'. FIGS. 9-10 show speakers 60 mounted above the seat back 22 for stereo sound audible game output/feedback, and/or for entertainment music output (e.g., from a music CD player 42). FIGS. 8 and 10 show a multiple button 32 implementation in the handgrips 20 (e.g., buttons for the first and second fingers of each hand). FIGS. 8-9 show arrangements and forms of the pedal speed sensor/motor 54, flywheel 58, brake/resistance control 56, and pedals 16 that are different from those shown in FIGS. 1-7.

[0059] With reference to the recumbent bicycle exercise-game machine embodiments 10, 10' illustrated in the drawings, the interactive game components added to the exercise machine have the following exemplary details:

[0060] Computer/game controller/console 52: This could be anything from a standard video game box with game cartridges, to a customized computer with LAN 44, WI/FI 66, and/or internet connections 44, 66. The controller 52 is preferably located in or attached to an individual exercise-game machine 10, 10', but could also be remotely located, such as a central control computer 52 networked to multiple machines 10, 10' in a fitness center, each exercise-game machine 10, 10' having an I/O box for directing the input signals and output signals to/from sensors, actuators and the like.

[0061] User inputs (to the controller 52) include, for example: the pedal speed sensor 54; push buttons 32 and/or triggers 34 and/or thumb-operated joysticks 34 built into the handgrip(s) 20; force sensors 46, 48 to detect direction and/or magnitude of force applied to the handgrips/handlebar/steering wheel 20 and/or seat bottom 24 and seat back 22 (effectively making any of them into a joystick, a steering bar/wheel, a bike tilt detector, a flight stick, an isometric force detector, and so on); a microphone 40 or 60 for detecting voice commands and other sounds; a temperature sensor (e.g., 48), an odor sensor (e.g., 60), a moisture sensor (e.g., 48), etc. Auxiliary inputs include, for example, the keypad/keyboard 38, a touch screen 36, buttons, switches, and the like 40 that are associated with general game controls and likely located in or nearby the video display screen/monitor 36. In non-bicycle embodiments of the present invention, the "pedal speed sensor 54" is a comparable detector (measurer, sensor) of exercise effort and/or action achievement (e.g., force, rate, speed, frequency, repetition count, tilt angle, etc.). For example, the sensor 54 could measure: isometric force level, Nordic ski midpoint horizontal speed or cycle frequency, rowing cycle frequency, and the like.

[0062] In general, inputs from the exercise machine 10, 10' are supplied by "sensors" that are sensingly attached to suitable parts of the machine 10, 10' and which are electrically connected (by wires 50, or wireless transmission, for

example) to input ports of the controller 52. The sensors detect and/or measure events, effects and actions occurring outside the controller 52 and thus include things like a rotational speed sensor, microphone, pushbutton and so on. Preferably the sensors are built-in, i.e., integrated with the exercise machine 10, 10' rather than temporarily attached.

[0063] Feedback outputs (from the controller 52) include, for example: visual images/video on a display screen 36; exercise resistance control 56 (e.g., magnetic resistance or physical brake force applied to a pedaled wheel 58); effects on speed (e.g., motor 54); vibration, tilt/movement, impact/bump actuators 46, 48; “wind” generated by a fan (e.g., 40), optionally heated or cooled; seat temperature heating or cooling (e.g., 46, 48); lamp heating (e.g., 40); sounds from a speaker 60 (which can be headphones); moisture dispensers (e.g., 40), scent dispensers (e.g., 40), etc. In a deluxe embodiment, a closed-box “simulator” can provide a virtual reality total immersion environment that requires one or more physical activities (exercise) yielding user inputs to the experience.

[0064] In general, outputs from the controller 52 are supplied by output ports that are electrically connected (by wires 50, or wireless transmission, for example) to “actuators” that are actuatingly attached to suitable parts of the exercise machine 10, 10'. The actuators exert physical effects on the machine 10, 10' and the user, and thus include things such as a display 36, a motor 54, a fan 40, a speaker 60 and the like. Preferably the actuators are built-in, i.e., integrated with the exercise machine 10, 10' rather than temporarily attached.

[0065] Accessories include, for example, audio (e.g., music) players, speaker(s), and/or headphones—built-in and/or provisions for plugging-in external devices, possibly supplied by the user. For example, a built-in CD player 42 is illustrated. Audio players 42 include, for example, CD, cassette and MP3 players, radios, etc. Appropriate player controls are provided, and for players 42 with removable media (e.g., CD) then provisions are made for the user to load/unload the media. For example, provisions are made for temporarily connecting external audio players to the power and/or sound system of the exercise-game machine 10, 10'. Provisions include a pigtail plug-cord 44 for temporarily plugging into the headphone jack of a user's portable audio player such that the player's audio output is played through headphones, or amplified and broadcast by premium speakers 60 built into the fitness machine 10, 10'. A suitable shelf or pocket 42 would also be provided for holding the portable player, and power could also be provided, for example with a 12 volt DC “cigarette lighter” jack and/or a 120 volt AC receptacle.

[0066] Although the invention has been illustrated and described in detail in the drawings and foregoing description, the same is to be considered as illustrative and not restrictive in character—it being understood that only preferred embodiments have been shown and described, and that all changes and modifications that come within the spirit of the invention are desired to be protected. Undoubtedly, many other “variations” on the “themes” set forth hereinabove will occur to one having ordinary skill in the art to which the present invention most nearly pertains, and such variations are intended to be within the scope of the invention, as disclosed herein.

What is claimed is:

1. An exercise-game machine being an exercise machine combined with an interactive game component, the exercise-game machine comprising:

an exercise machine;

a display built into the exercise machine;

one or more sensors attached to the exercise machine; and

a game controller that is electrically connected to the one or more sensors as inputs, and that is electrically connected to the display as an output.

2. The exercise-game machine of claim 1, wherein:

the game controller is built into the exercise machine.

3. The exercise-game machine of claim 1, wherein:

the one or more sensors are selected from the group consisting of: an exercise rate sensor, an exercise force sensor, an exercise frequency sensor, an exercise repetition counter, a push button, a trigger, a joystick, a steering wheel, a handlebar, a flight stick, a tilt sensor, a keypad, a touch screen, a switch, a sound detector, a temperature sensor, an odor sensor, and a moisture sensor; and

the sensors are integrated into the exercise machine.

4. The exercise-game machine of claim 1, further comprising:

one or more actuators that are electrically connected to the game controller as outputs, and that are actuatingly attached to the exercise machine.

5. The exercise-game machine of claim 4, wherein:

the one or more actuators are selected from the group consisting of a vibrator, an impact force actuator, a movement actuator, a heating device, a cooling device, a fan, a speaker, a display screen, an exercise resistance adjuster, a motor, a moisture dispenser and a scent dispenser; and

the actuators are integrated into the exercise machine.

6. The exercise-game machine of claim 1, further comprising:

a built-in audio player with suitable speaker/headphone, amplifier, controls, and provisions for loading and unloading removable media, if any.

7. The exercise-game machine of claim 1, further comprising:

provisions for temporarily connecting external audio players to a sound system and/or power supply of the exercise-game machine.

8. The exercise-game machine of claim 1, further comprising:

a communication connection between the game controller and a network that includes another game controller.

9. The exercise-game machine of claim 1, further comprising:

retractable wheels that can be lowered to rollingly support the exercise-game machine, and that can be raised to transfer support to stationary feet.

10. The exercise-game machine of claim 1, further comprising:

rollers on one of the front and rear support legs that rollingly support one end of the exercise-game machine while the other of the front and rear support legs provides stationary support such that the stationary support leg must be raised to allow rolling movement of the exercise-game machine.

11. An exercise-game machine comprising:

an exercise machine;

an interactive game controller that is built into the exercise machine; and

one or more actuators that are actuatingly attached to the exercise machine and electrically connected to the interactive game controller as outputs.

12. The exercise-game machine of claim 11, further comprising:

one or more sensors that are sensingly attached to the exercise machine and electrically connected to the interactive game controller as inputs; wherein

the one or more sensors are selected from the group consisting of: an exercise rate sensor, an exercise force sensor, an exercise frequency sensor, an exercise repetition counter, a push button, a trigger, a joystick, a steering wheel, a handlebar, a flight stick, a tilt sensor, a keypad, a touch screen, a switch, a sound detector, a temperature sensor, an odor sensor, and a moisture sensor; and

the sensors are integrated into the exercise machine.

13. The exercise-game machine of claim 11, wherein:

the one or more actuators are selected from the group consisting of: a vibrator, an impact force actuator, a movement actuator, a heating device, a cooling device, a fan, a speaker, a display screen, an exercise resistance adjuster, a motor, a moisture dispenser and a scent dispenser; and

the actuators are integrated into the exercise machine.

14. The exercise-game machine of claim 11, further comprising:

a built-in audio player with suitable speaker/headphone, amplifier, controls, and provisions for loading and unloading removable media, if any.

15. The exercise-game machine of claim 11, further comprising:

provisions for temporarily connecting external audio players to a sound system and/or power supply of the exercise-game machine.

16. The exercise-game machine of claim 11, further comprising:

a communication connection between the game controller and a network that includes another game controller.

17. A method for encouraging use of an exercise machine by utilizing an interactive game, the method comprising the steps of:

integrating an interactive game controller into the exercise machine;

sensingly attaching one or more sensors to the exercise machine and electrically connecting the one or more sensors to the interactive game controller as interactive game inputs; and

actuatingly attaching one or more actuators to the exercise machine and electrically connecting the one or more actuators to the interactive game controller as interactive game feedback outputs.

18. The method of claim 17, further comprising the step of:

using the one or more sensors to sense and input to the controller one or more of: an exercise rate, an exercise force, an exercise frequency, an exercise repetition count, a button click, a trigger squeeze, a joystick movement, force on a steering wheel, force on a handlebar, force on a flight stick, a tilting force, a key press, a touch screen touch, a switch activation, sound, heat, smell, and moisture.

19. The method of claim 17, further comprising the step of:

using the one or more actuators to output from the controller game-related feedback including one or more of vibration, impact force, movement, heat, cold, moving air, sound, visual effects, changes of exercise resistance, changes of exercise rate, scent and moisture.

20. The method of claim 17, further comprising the step of:

communicatingly connecting the game controller with a network that includes another game controller.

\* \* \* \* \*