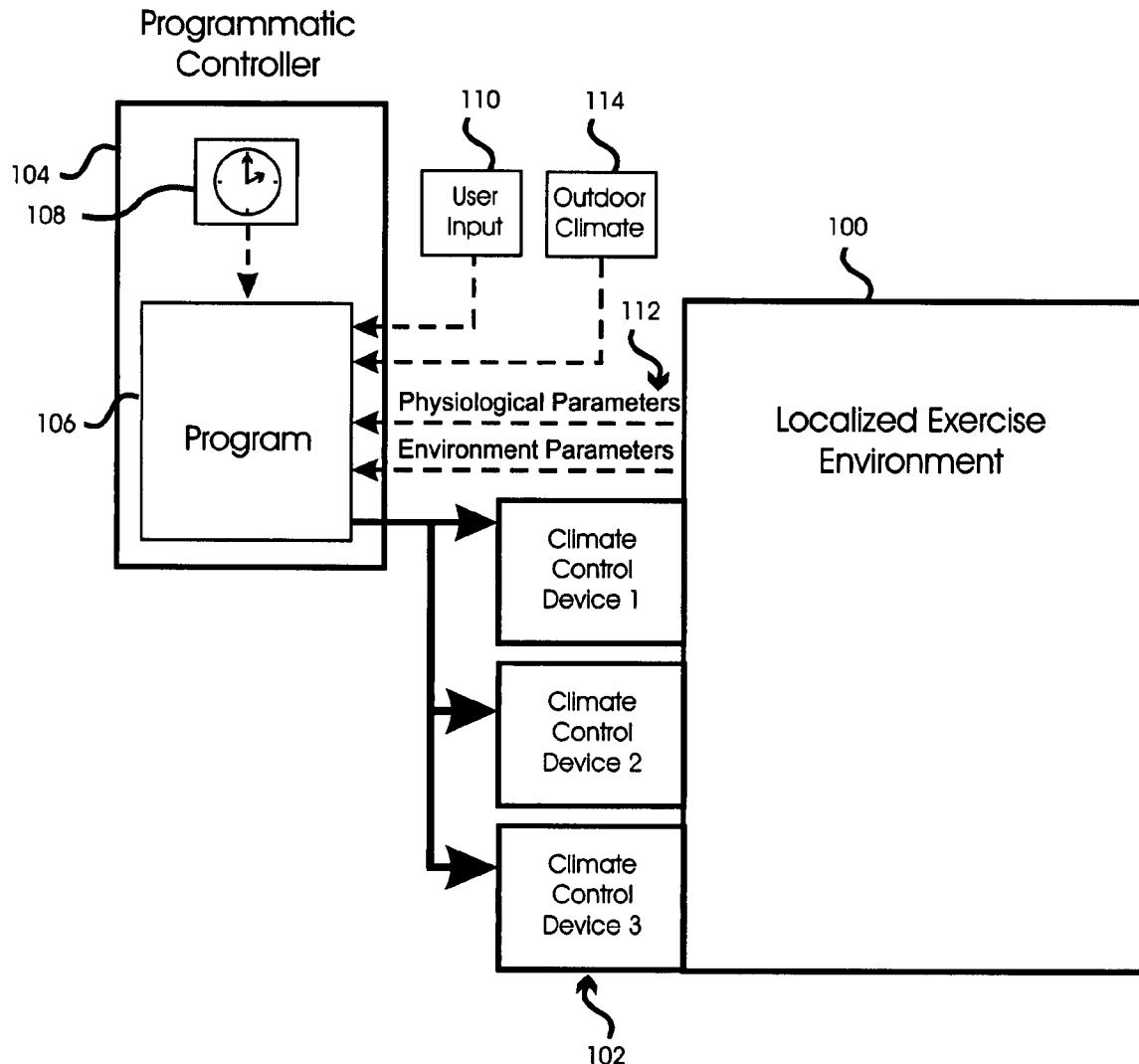


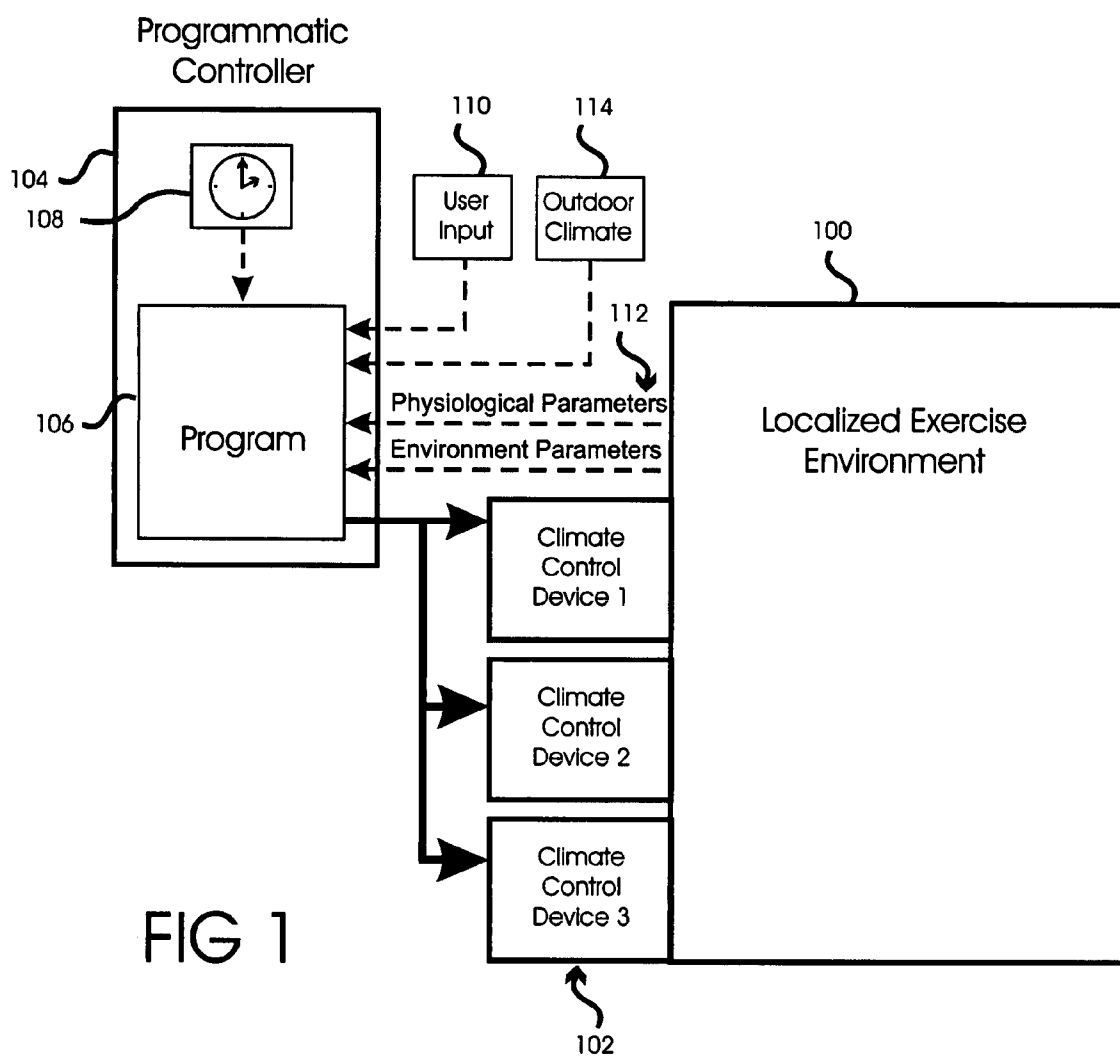


US 20090108082A1

(19) **United States**(12) **Patent Application Publication**
Goldmann et al.(10) **Pub. No.: US 2009/0108082 A1**(43) **Pub. Date: Apr. 30, 2009**(54) **PROGRAMMATIC CLIMATE CONTROL OF
AN EXERCISE ENVIRONMENT**(52) **U.S. Cl. 236/49.1**(57) **ABSTRACT**(76) Inventors: **Richard Goldmann**, Poughkeepsie,
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Milford, NH 03055 (US)(21) Appl. No.: **11/982,176**(22) Filed: **Oct. 31, 2007****Publication Classification**(51) **Int. Cl.**
F24F 11/00 (2006.01)

An apparatus is disclosed for programmatically controlling the climate of a localized exercise environment so as to accommodate the evolving needs of exercisers during a work-out. In preferred embodiments, the localized environment is an enclosed exercise room or the area surrounding one or more stationary exercise machines. Heat is applied by convective, conductive, and/or radiant means, and/or removed by convective, conductive, and/or evaporative means. In various preferred embodiments the humidity, direction, and speed of the air flow are controlled, and/or a cooling mist is applied. In preferred embodiments, the climate control program is executed according to the passage of time, according to the rate of work and the amount of work performed, according to acoustic features of music, and according to physiological parameters of the exerciser such as heart rate, breathing rate, and skin temperature. In some preferred embodiments the climate control devices are attached directly to stationary exercise devices.





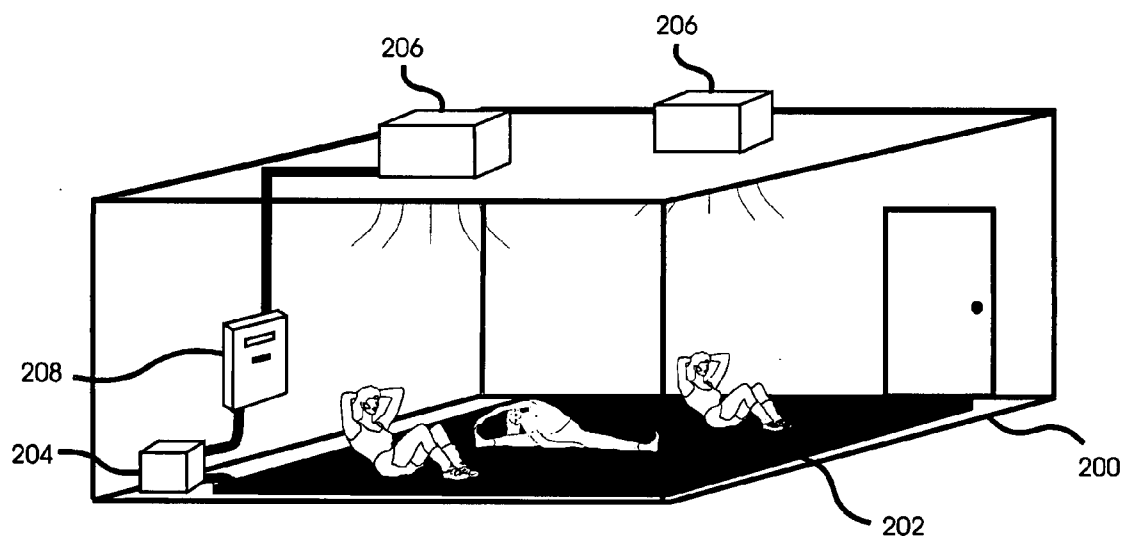


FIG 2A

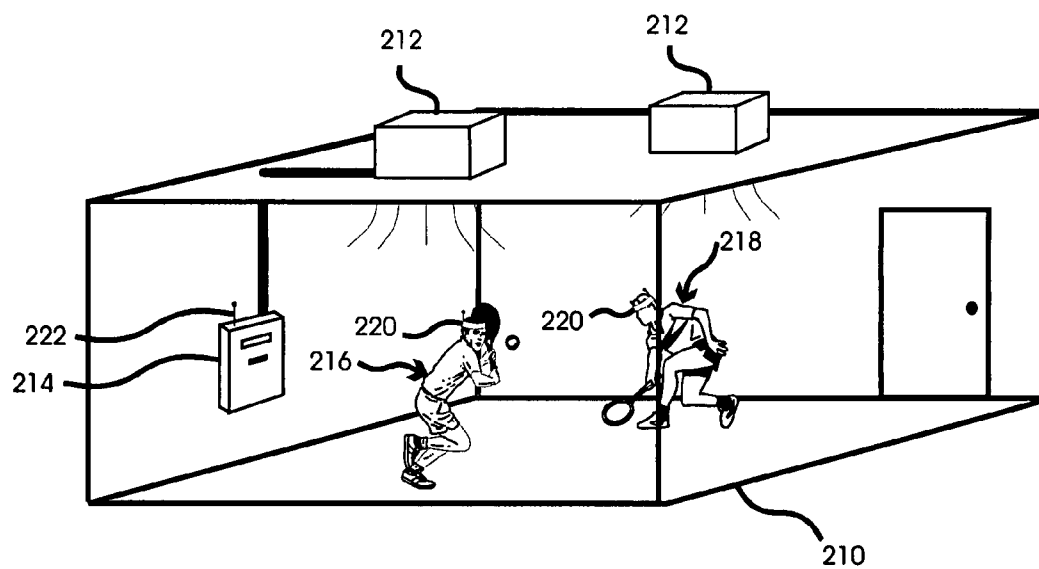


FIG 2B

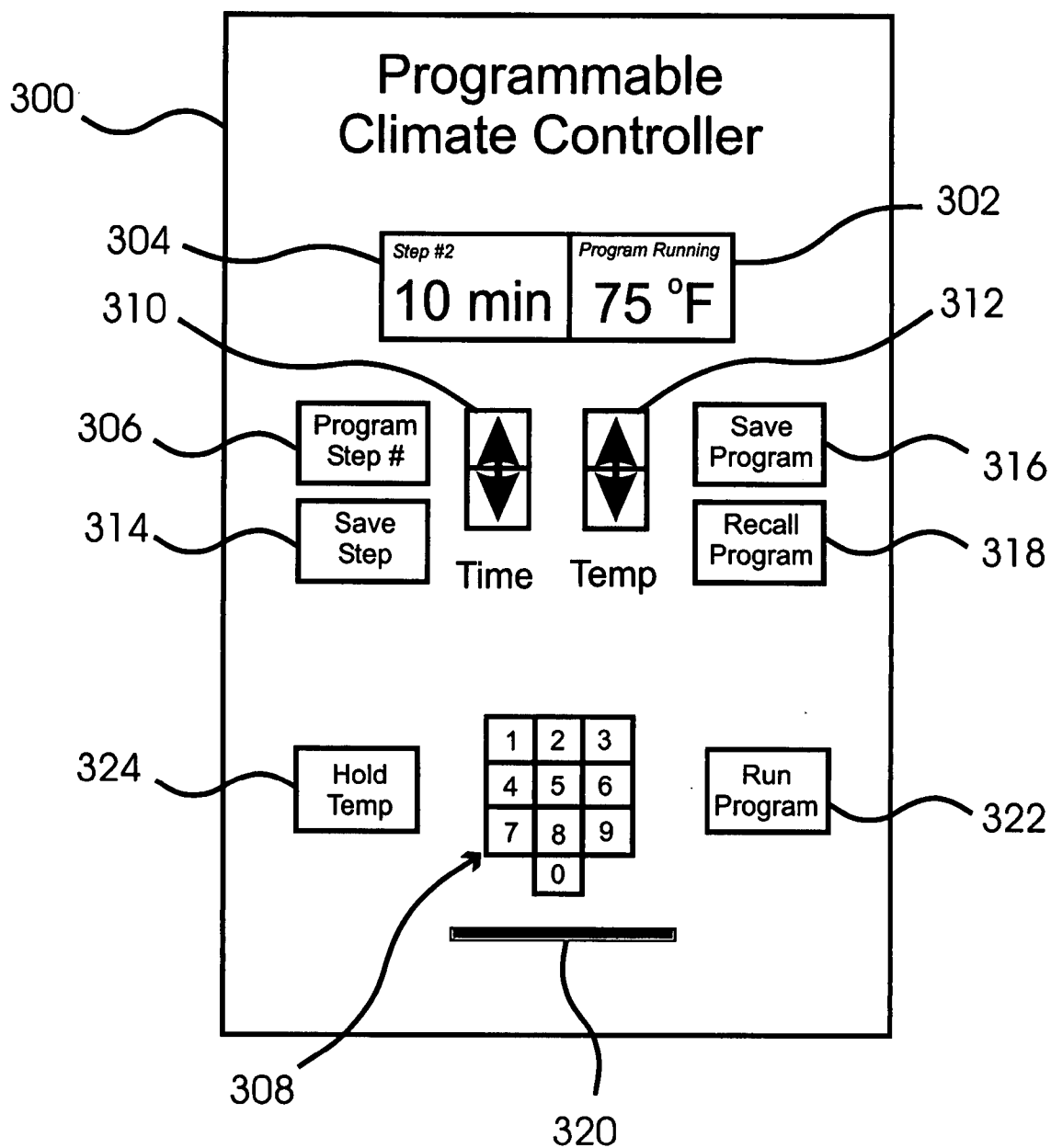


FIG 3A

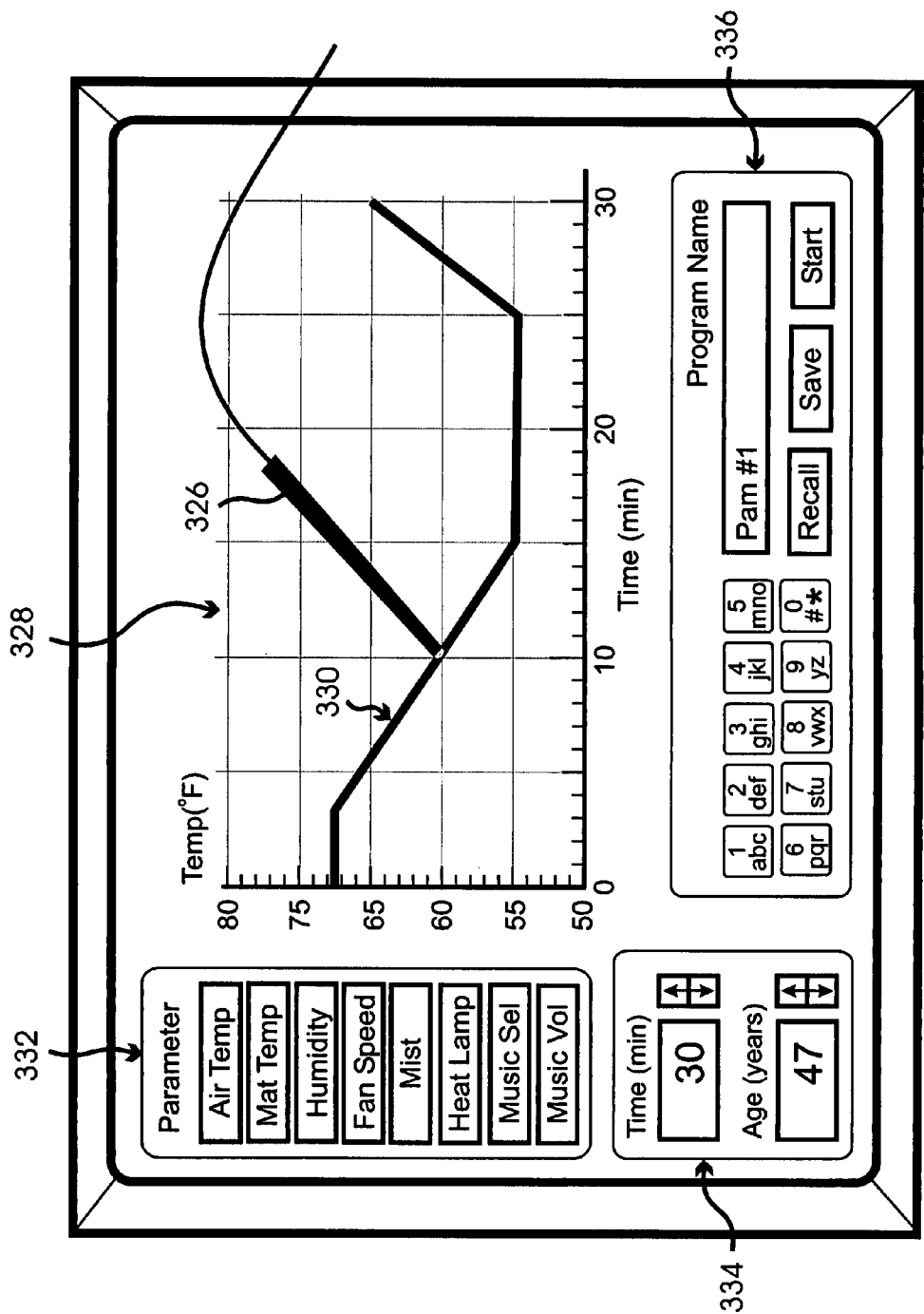


FIG 3B

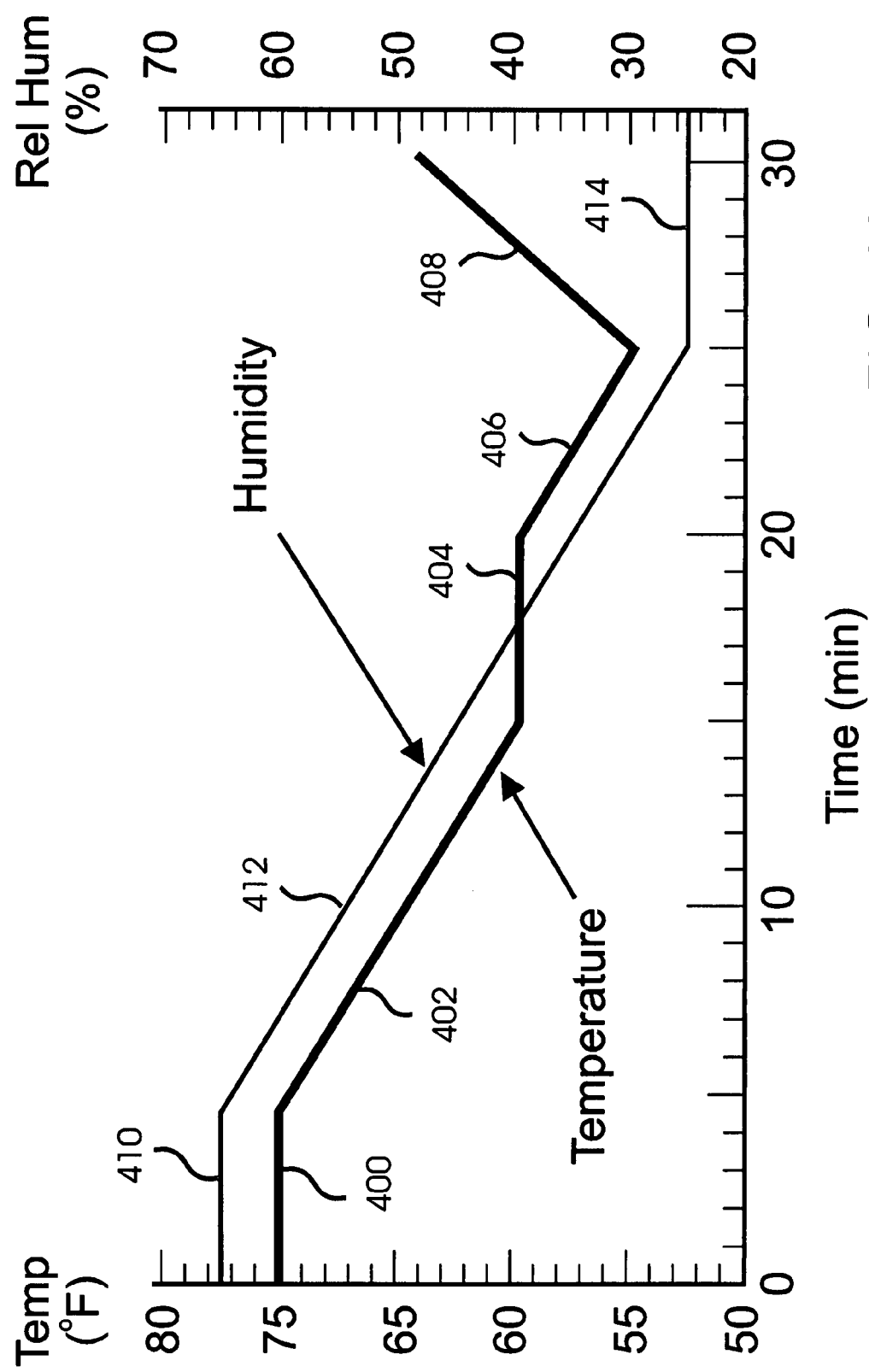


FIG 4A

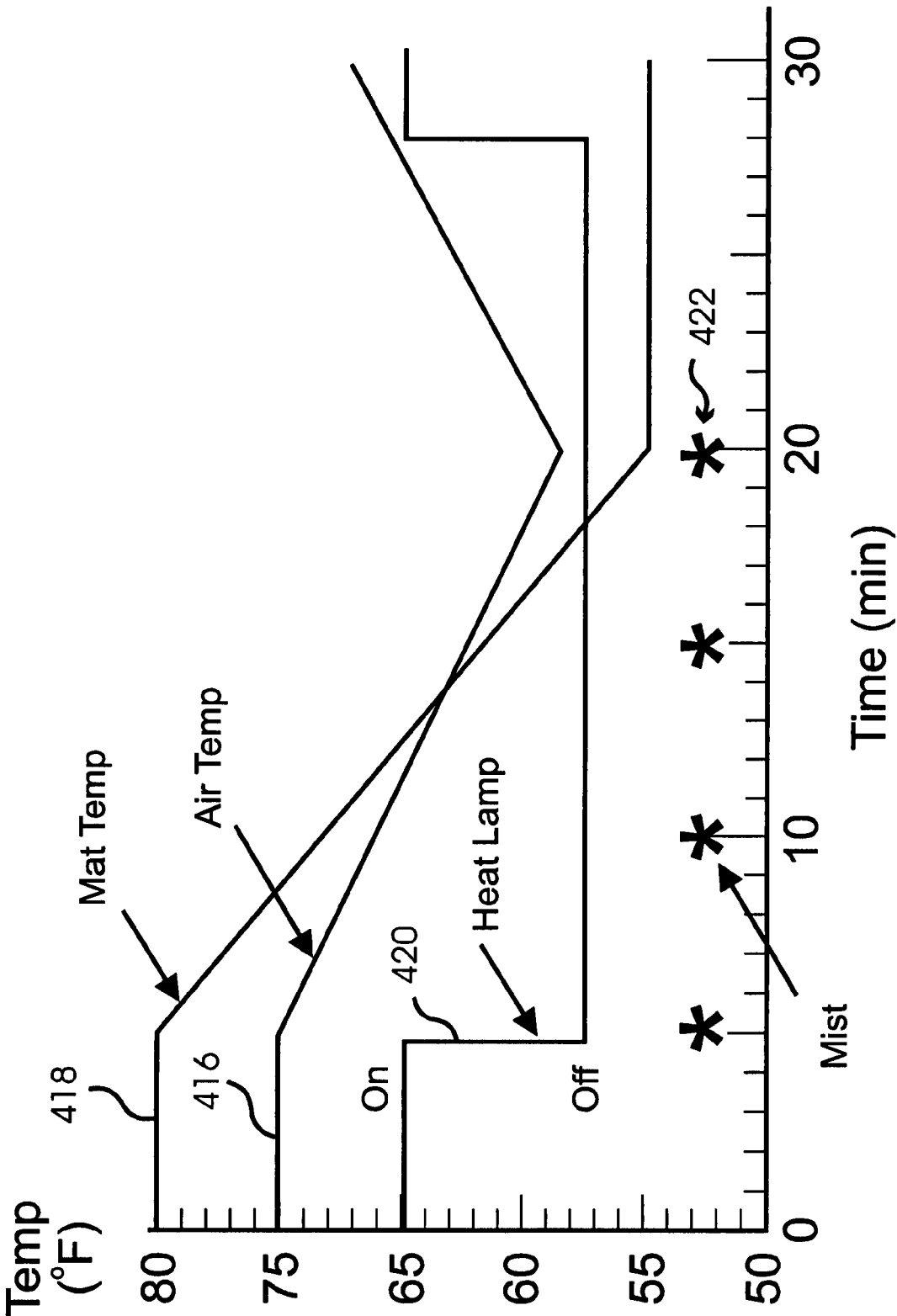


FIG 4B

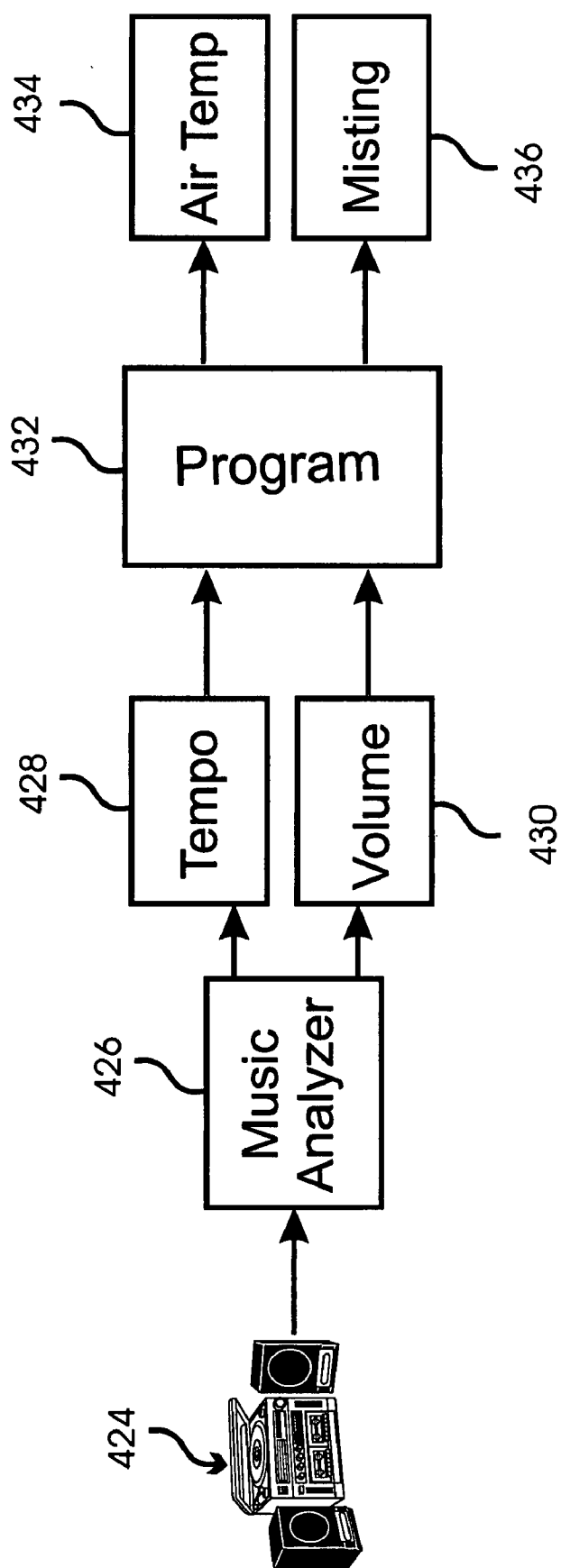
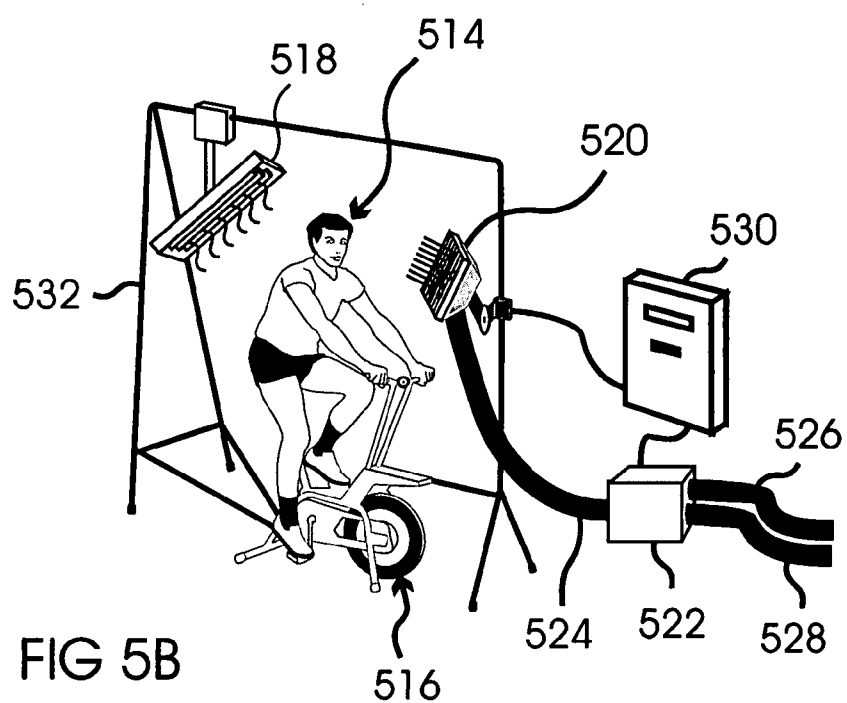
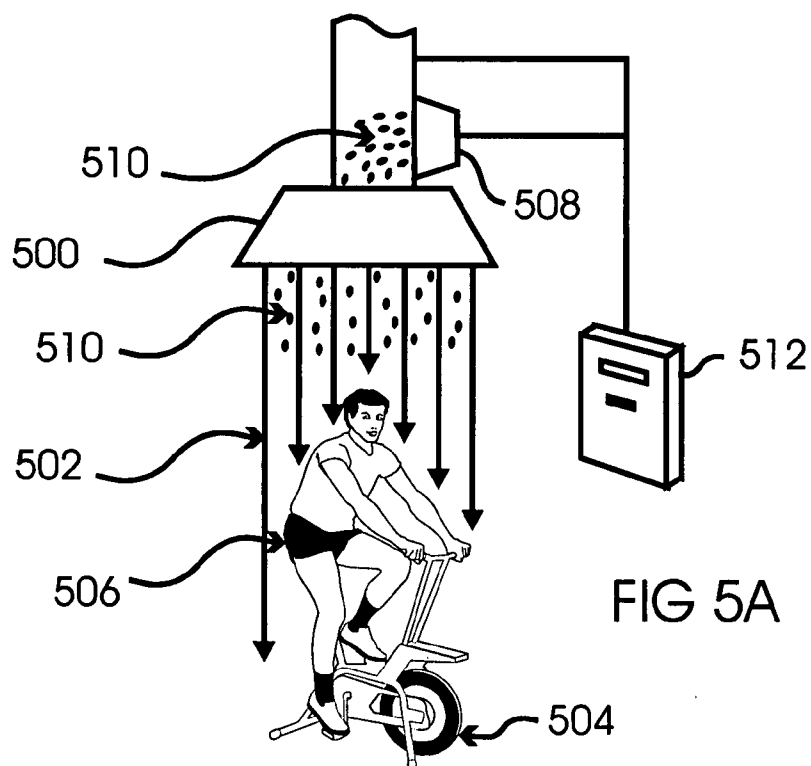


FIG 4C



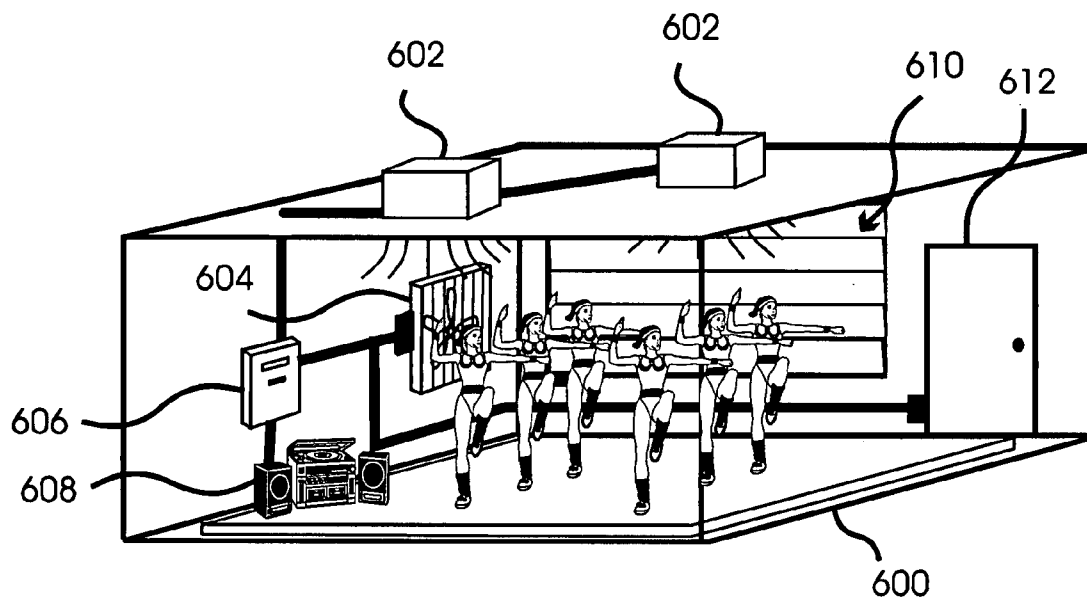


FIG 6A

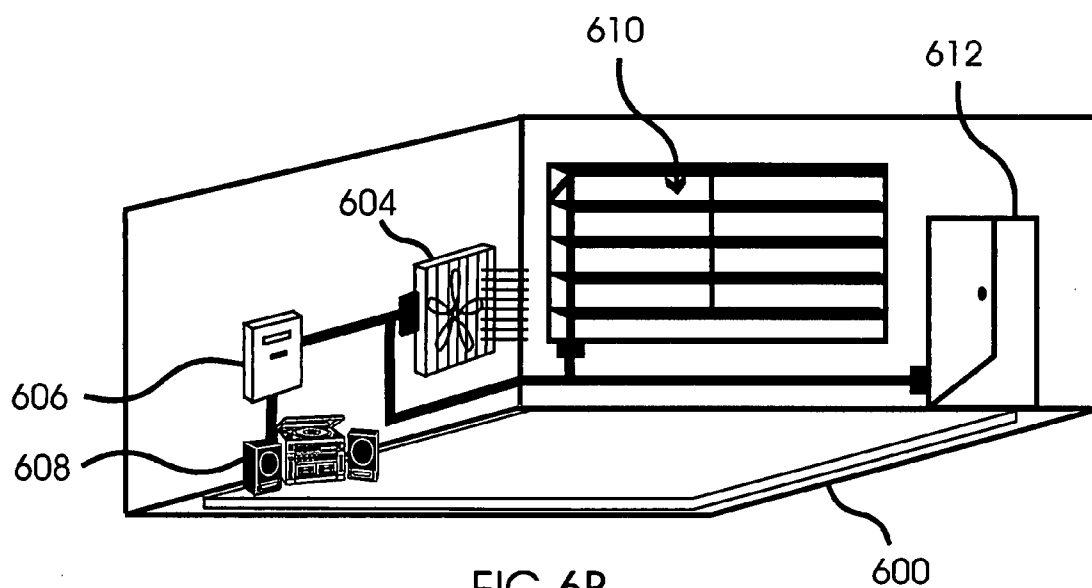


FIG 6B

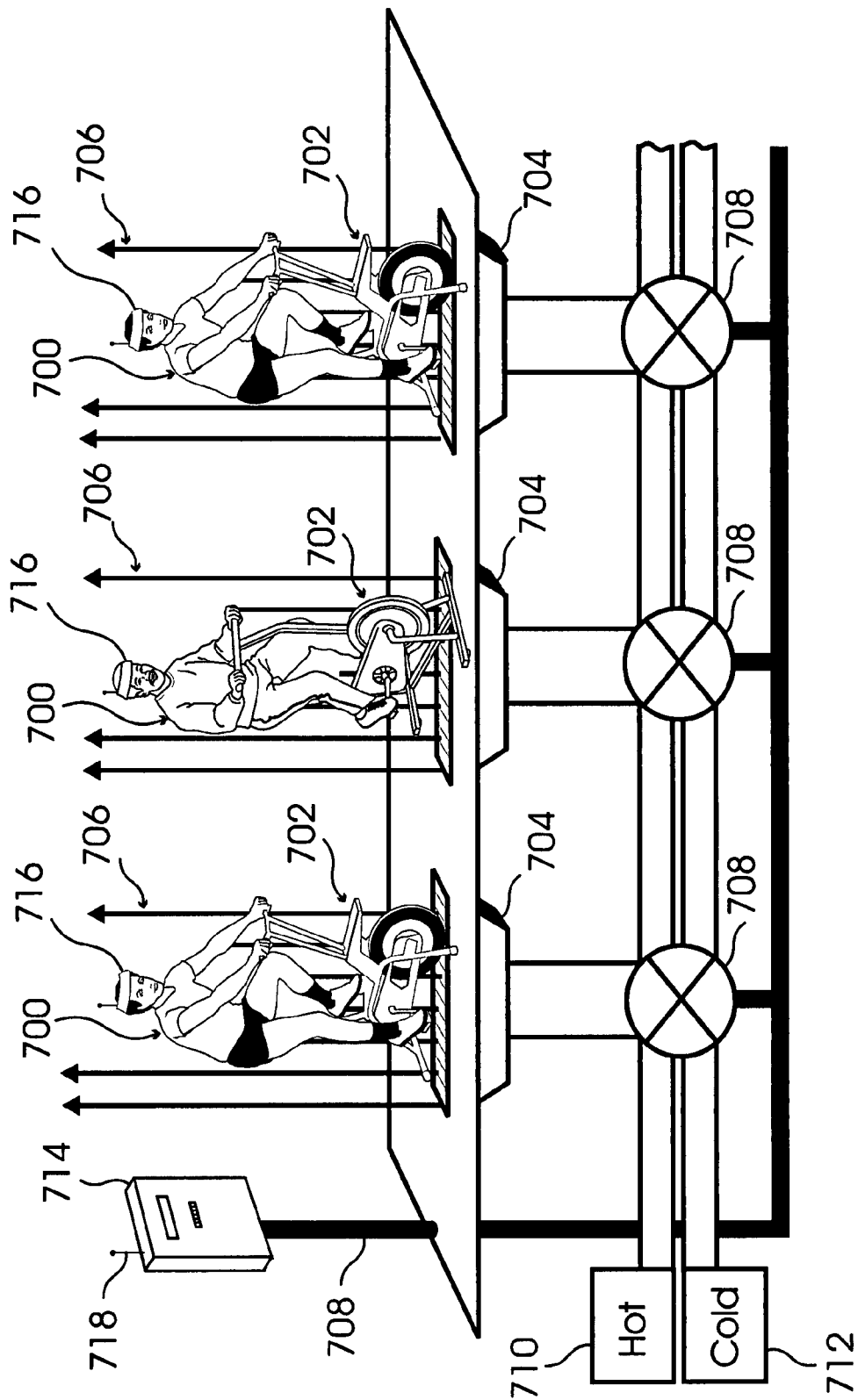


FIG 7

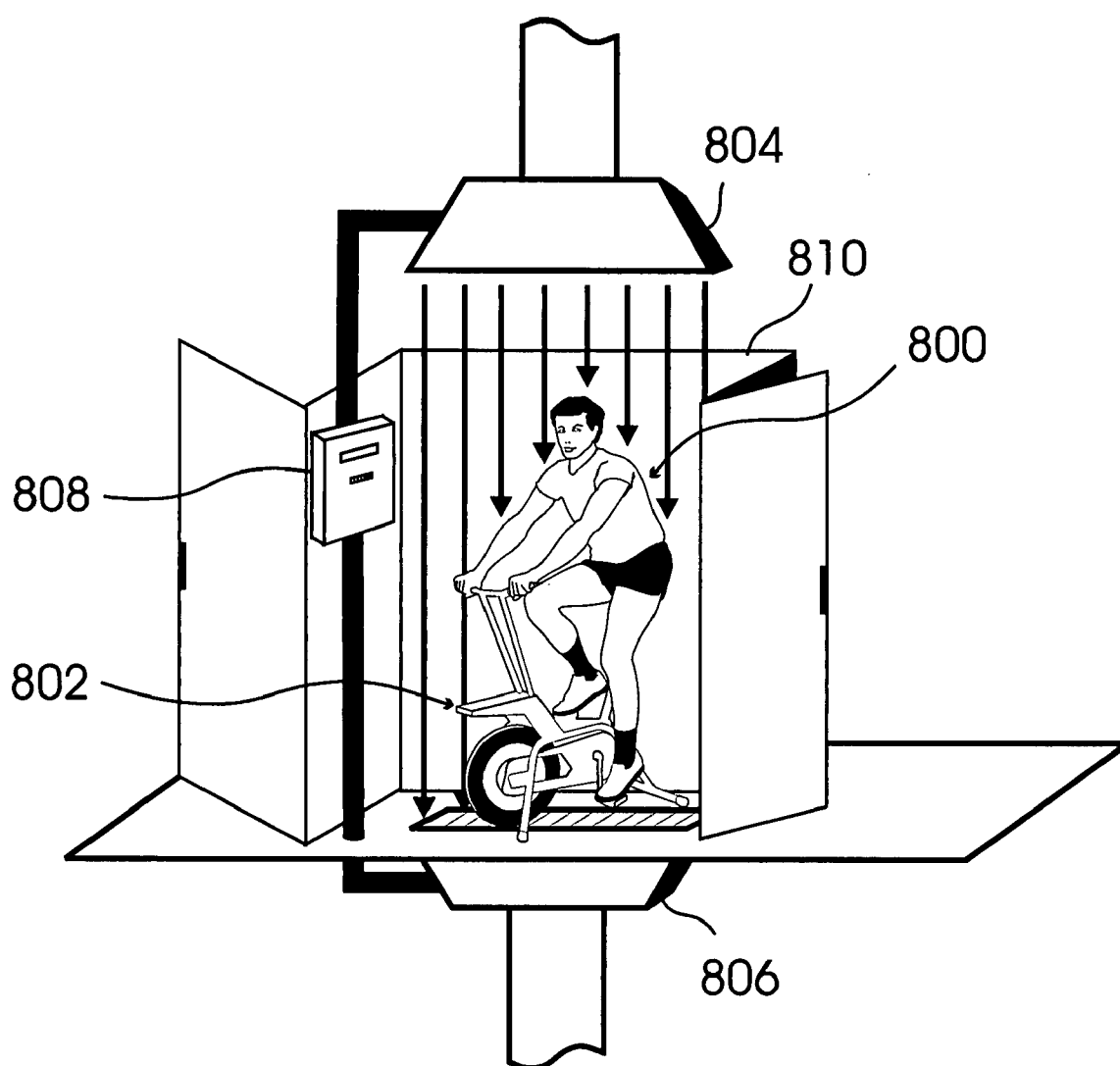


FIG 8

PROGRAMMATIC CLIMATE CONTROL OF AN EXERCISE ENVIRONMENT

FIELD OF THE INVENTION

[0001] The invention generally relates to exercise environments, and more specifically to control of the climate within an exercise environment.

BACKGROUND OF THE INVENTION

[0002] Exercise is generally known to have many benefits for individuals of all ages. These benefits include improved cardiovascular health, reduced blood pressure, prevention of bone and muscle loss, maintenance of a healthy weight, improved psychological health, and many others. Exercise is also used as a means for monitoring the health of individuals through so-called "stress" tests. However, exercise is generally accompanied by a certain degree of discomfort, including overheating, sweating, etc, and this leads to a significant reduction in the amount of exercise undertaken by many individuals, thereby reducing the health benefits derived from recreational and conditioning exercise and the diagnostic accuracy of stress tests.

[0003] Because of weather variability, convenience, and time constraints, exercise often takes place indoors in a relatively confined environment, either in an exercise room, possibly as part of a group activity such as a dance club or an aerobics class, or localized on a stationary exercise machine such as a stepper, stationary bicycle, elliptical, treadmill, free weight machine, stress test machine, etc. Attempts are often made to increase the comfort of exercising individuals in these environments by optimizing climate factors such as the temperature, humidity, and air flow.

[0004] However, these approaches are largely unsatisfactory. For example, if the temperature is warm enough to encourage exercise at the beginning of a workout, when muscles are at rest and not warmed up, it will be too warm once exercise is well underway and the body is generating excess heat. Conversely, if the temperature is cool enough to be comfortable when exercise is well underway, it will not be comfortable at the beginning of the workout.

SUMMARY OF THE INVENTION

[0005] An apparatus and method of use are disclosed that significantly improve the comfort of an individual exercising in a localized environment, such as in an exercise room or on a stationary exercise device, by programmatically controlling the heating and/or cooling of the individual during a workout session. In preferred embodiments, the methods for controlling heating and cooling include heating and cooling of the surrounding air, heating and cooling of surfaces with which the individual comes into direct contact, radiant heating, control of the humidity of the surrounding air, application of liquid mist, and control of the flow of air within the environment using fans and/or similar devices.

[0006] In various preferred embodiments the programmatic control of the environment is executed according to elapsed time, the rate of exercise, the total amount of exercise performed, and even the temporal and acoustic features of music, as might for example be appropriate during an exercise program performed to music. In other preferred embodiments, the climate is controlled according to measured physiological parameters such as heart rate, rate of breathing, skin

temperature, core body temperature, and degree of perspiration, as determined for example by galvanic skin conductivity.

BRIEF DESCRIPTION OF THE DRAWINGS

[0007] FIG. 1 is a block diagram of the invention;

[0008] FIG. 2A is a perspective drawing of an exercise room with a temperature and humidity controlled ventilation system and an electrically heated exercise mat, both regulated by a programmatic controller;

[0009] FIG. 2B is a perspective drawing of an exercise room where squash and similar competitive sports can be played, wherein the room includes a temperature controlled ventilation system regulated by a programmatic controller;

[0010] FIG. 3A is an illustration of the front panel of a programmatic controller in a preferred embodiment wherein programs are created, modified, and recalled by pushing buttons;

[0011] FIG. 3B is an illustration of the front panel display of a programmatic controller in a preferred embodiment wherein programs are created, modified, and recalled by touching the display with a light pen;

[0012] FIG. 4A is a graphical representation of a typical air temperature and humidity control program for a 30 minute workout;

[0013] FIG. 4B is a graphical representation of a typical climate control program for a 30 minute workout, wherein the program controls the air temperature and humidity, the speed of a ventilator fan, the temperature of an electrically heated exercise mat, the application of radiant heat from a heat lamp, the application of cooling mist, and the selections and volume of music played during the exercise session;

[0014] FIG. 4C is a block diagram that illustrates a preferred embodiment wherein the air temperature and the application of mist within a localized exercise environment is controlled according to the tempo and volume of music.

[0015] FIG. 5A is a perspective drawing of a stationary exercise device surrounded by an air curtain that is generated by a temperature and humidity controlled ventilation system located directly above the device, wherein the ventilation system includes a misting device and wherein both the ventilation system and the misting device are regulated by a programmatic controller;

[0016] FIG. 5B is a perspective drawing of a stationary exercise device with a localized exercise environment controlled by a radiant heat source and a temperature controlled ventilation system with built-in fan, both mounted to the exercise device and both regulated by a programmatic controller;

[0017] FIG. 6A is a perspective drawing of an exercise room equipped with a temperature controlled ventilation system and a room fan, both regulated by a programmatic controller, wherein the climate control program also controls the volume and selections of music played by a stereo system;

[0018] FIG. 6B is a perspective drawing of the exercise room of FIG. 6A at the end of an exercise session, wherein the door and a large window have been automatically opened by the programmatic controller and the fan has been activated so as to rapidly equalize the climate in the room with the ambient climate of the region outside of the room;

[0019] FIG. 7 illustrates a temperature regulated ventilation system that can simultaneously regulate the localized envi-

ronments of a plurality of stationary exercise devices according to a program generated by a single programmatic controller; and

[0020] FIG. 8 is a perspective drawing of a stationary exercise device with a temperature controlled ventilator outlet immediately above the device, an air return vent in the floor immediately below the device, and a programmatic controller that controls the outlet and return vents, wherein the exercise device is surrounded by a panel enclosure that improves the isolation of the localized exercise environment.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

[0021] FIG. 1 presents a block diagram of a preferred embodiment of the invention, wherein the climate within a localized exercise environment 100 is controlled by multiple climate control devices 102 that control different climate aspects such as air temperature, air flow and direction, humidity, etc according to control signals and/or instructions supplied by a programmatic controller 104. The programmatic controller executes a climate control program 106 according to the passage of time 108, according to user inputs 110 such as age, height, weight, and anticipated workout duration, and according to measured environmental and physiological parameters 112, such as the rate of exercise, the amount of exercise already performed, and the heart and breathing rates of one or more exercising individuals. In some preferred embodiments moving averages of measured parameters and/or weighted averages of physiological parameters obtained from multiple exercisers are used to determine climate control settings.

[0022] In preferred embodiments, information regarding the current outdoor climate 114 and/or the average outdoor climate over the recent past also serves as an input to the program, since these factors can affect the comfort and preferences of exercisers. For example, individuals may find a warmer exercise climate more attractive and comfortable in the winter, especially at the beginning of an exercise session, whereas they may find a cooler exercise climate more attractive and comfortable in the Summer.

[0023] FIG. 2A is a perspective drawing of a preferred embodiment that includes an enclosed exercise room 200 with an exercise mat 202 electrically heated by a variable power source 204 that supplies current to heating wires embedded in the mat. The room is equipped with a heating, ventilating, and air conditioning system or "HVAC" 206 built into the ceiling, which in this embodiment also controls the humidity of the air (not specifically shown in the figure). A programmatic controller 208 controls both the HVAC and the heating of the mat according to a climate control program that is determined according to the passage of time and the planned duration of the exercise session.

[0024] With reference to FIG. 2B, in another preferred embodiment an enclosed room 210 designed for squash, racket ball, and other indoor sports includes an HVAC system 212 regulated by a programmatic controller 214. In some preferred embodiments the HVAC system also includes a humidity control system (not specifically shown in the figure). The programmatic controller 214 executes a climate control program that is determined according to the passage of time, the planned duration of the exercise session, and also according to the heart rate and other physiological parameters of the individuals 216, 218 exercising in the room, as measured by sensors attached to convenient locations on the bod-

ies of the exercisers 216, 218 such as the head 220. In this preferred embodiment, the sensors 220 transmit their measurements via Bluetooth or another convenient short range wireless transmission means to an antenna 222 mounted on the programmatic controller 214. In some preferred embodiments moving time averages of the measured physiological parameters and/or averages of the measured physiological parameters from a plurality of exercising individuals are used by the climate control program to determine the settings of the HVAC system 212 and/or other climate control devices.

[0025] FIG. 3A illustrates the control panel 300 of a programmatic controller in a preferred embodiment wherein climate control programs are entered, recalled, modified, and executed all by pushing buttons on the control panel 300. Each climate control program is composed of a series of steps. For each step, a first liquid crystal display 302 mounted on the panel indicates the set temperature of the step and the current program status (running a program or setting/reviewing/modifying a program). A second liquid crystal display 304, located immediately to the left of the first display 302, indicates the current step number and the time duration assigned to that step.

[0026] In order to create or modify a program, a step is selected by pressing the Program Step # button 306 and entering the desired step number on a numeric keypad 308. The desired duration and set temperature for that step are then selected by up/down buttons 310, 312, and the step is saved in memory by pressing the "save step" button 314. The end of a program is indicated by entering a "zero-time" step at the end. Programs can be saved or recalled by pressing the "save program button" 316 or the "recall program" button 318 and entering a program number on the numeric keypad 308. Pressing the save program button 316 or recall program button 318 twice before entering a number causes the program to recall or save a program from a removable storage device. In this embodiment the storage device is a floppy disk inserted in a slot 320 in the panel. In other embodiments the storage device is a memory stick or similar device. Once the program has been recalled, entered, and/or edited, it is run by pressing the "Run Program" button 322. A "Hold Temp" button 324 is also provided to allow the programmatic controller to maintain a fixed temperature when a program is not being run.

[0027] FIG. 3B illustrates the control panel of a programmatic controller in a preferred embodiment wherein climate control programs are entered, recalled, modified, and executed all by touching a display screen with a light pen 326. The display includes a graphical section 328 where the values of climate parameters such as air temperature and humidity are displayed 330 as a function of elapsed workout time. Climate control settings during an exercise session can be modified by displaying the plotted curve 330 for the desired parameter, touching the plotted curve 330 with the light pen 326 at a desired point, and dragging that point of the curve up or down on the screen. If the upper or lower limit of the graphical section 328 is reached, the vertical scale scrolls and is extended so as to keep the entire plotted curve 330 within the graphical section 328. The plotted curve 330 to be displayed in the graphical section 328 is selected by touching the light pen 326 to the corresponding button in a vertical column of climate parameter buttons 332 on the left side of the screen.

[0028] The time duration of the workout is shown on in a window 334 located in the lower left of the display, and is set by touching up and down arrows 334 with the light pen 326. A similar window and set of up and down arrows also located

in the lower left of the display 334 allows entry of the age of the exerciser. Similar embodiments allow entry of other parameters such as the height and/or the weight of the individual. Whenever the age, height, or weight setting is changed, the heating and cooling behavior shown in the plotted curves is modified in an appropriate fashion. This allows for use of a single climate control program by exercisers of different ages, physical characteristics, and fitness levels without the need to make detailed changes to the plotted curves. For example, in preferred embodiments the cooling is increased for individuals with higher than average weight to height ratios.

[0029] Programs names are entered by touching an alphanumeric keypad 336 with the light pen 326, and are stored, recalled, and started by touching the appropriate buttons in the same window 336. A memory stick (not shown) can be used to store programs so as to avoid exceeding the memory limit of the programmatic controller.

[0030] FIG. 4A is a graphical representation of a typical 30 minute climate control program for a preferred embodiment in which climate control devices are used to regulate and vary the air temperature and the humidity of the localized exercise environment. During an initial 5 minute warm up period, the air temperature is held at a relatively high temperature of 75 degrees 400, after which it is steadily decreased over the next 10 minutes as the pace of exercise increases until it reaches a much cooler temperature of 60 degrees 402. The air temperature is maintained at 60 degrees for five minutes 404, after which it drops even further, during a five minute surge of even more vigorous exercise as the end of the workout nears, until it reaches 55 degrees 406. Finally, during the last 5 minute "cool down" part of the workout, the air temperature is raised steadily back up to 65 degrees 408.

[0031] The humidity follows a similar pattern during the 30 minute workout. It begins at a relatively high 65% during the initial five minute warm up 410, after which it falls steadily during the next 20 minutes 412 as the rate of perspiration increases, finally reaching 25%. During the final 5 minute cool down period 414, the humidity is maintained at 25%, since perspiration can be expected to remain heavy during this time.

[0032] FIG. 4B is a graphical representation of a typical 30 minute climate control program for a preferred embodiment in which climate control devices are used to regulate and vary the air temperature 416, the temperature of an exercise mat 418, the turning on and off of a radiant heat lamp 420, and the application of a cooling mist 422. During the initial 5 minute warm up period the air temperature 416 and the mat temperature 418 are both kept at high levels, and the radiant heat lamp 420 is switched on. Throughout the next 15 minutes of vigorous exercise the air temperature 416 and the mat temperature 418 are steadily decreased, and the radiant heat lamp 420 is switched off. During this time, a mist of water droplets 422 is applied every five minutes to further cool the exercisers. The mat temperature 418 is held low during the next five minutes, and misting 422 continues, but the air temperature 416 begins to rise in anticipation of the end of the workout. Finally, during the 5 minute cool down period, the air temperature 416 continues to rise, misting 422 stops, the mat temperature 418 remains low, and the radiant heat lamp 420 is turned back on.

[0033] FIG. 4C is a block diagram that illustrates a preferred embodiment wherein the air temperature and the application of a cooling mist inside of a localized exercise envi-

ronment are controlled according to the tempo and volume of music. A stereo system 424 is connected to a music analyzer 426. While music is being played on the stereo 424, the music analyzer 426 analyzes the music and determines the tempo 428 of the music and the volume 430 of the music. This information is then used by the climate control program 432 in determining the air temperature 434 and the duration and frequency of misting 436. Depending on the preferences of the exerciser, for example, the climate control program 432 can be set to increase and decrease the air temperature 434 according to the tempo 428 of the music, and to apply a burst of mist 436 whenever the volume 430 exceeds a certain threshold. In other preferred embodiments, the control relationship is essentially reversed, in that the selections of music and the volumes at which they are played are determined by the programmatic controller so as to be complementary to the climate control settings and the anticipated pace of exercise.

[0034] FIG. 5A illustrates a preferred embodiment in which an HVAC system 500 creates a temperature and humidity controlled air "curtain" 502 surrounding a stationary exercise device 504 and an exerciser 506 using the device. In this embodiment the HVAC system is equipped with a misting device 508 that injects droplets of water 510 into the air stream just before the air exits the HVAC 200. Both the HVAC 500 and the mister 508 are controlled by a programmatic controller 512, which in the preferred embodiment of FIG. 5A executes a climate control program according to the passage of time. The air 502 supplied by the HVAC 500 is adjusted to a low humidity, such that the droplets of water 510 evaporate quickly from the exerciser 506, thereby cooling the body of the exerciser 506. Due to the low humidity of the air 502 coming from the HVAC system 500 and the small size of the water droplets 510, water droplets 510 that do not fall on the exerciser 506 evaporate before reaching the floor or immediately after reaching the floor.

[0035] FIG. 5B illustrates a preferred embodiment in which an exerciser 514 using a stationary exercise device 516 is heated from behind by a radiant heat lamp 518, while temperature regulated air is blown onto the exerciser 514 from the front by a fan 520. The temperature regulated air is supplied by an air mixer 522, which mixes warm air 524 and cold air 526 in order to achieve the desired temperature. The radiant heat lamp 518, the fan 520, and the air mixer 522 are all controlled by a programmatic controller 530. In the embodiment shown in FIG. 5B, the radiant heat lamp 518 and the fan 520 are both mounted to a frame 532 which is attached to the exercise device 516, both for convenience and also to position them closer to the exerciser and thereby provide more directed and localized control of the exercise environment.

[0036] FIG. 6A illustrates a preferred embodiment in which an exercise room 600 is equipped with an HVAC system 602 and a large fan 604, both controlled by a programmatic controller 606. The room is used for dance classes, group aerobic workouts, and similar activities that take place while music is played by a stereo system 608 that is also connected to the programmatic controller 606. The climate control program is executed by the programmatic controller 606 according to the passage of time as well as the tempo and intensity of the music. A large window 610 in the wall of the room is closed by shutters during the workout under control of the programmatic controller, and the door to the room 612 is similarly closed during the workout by the programmatic controller.

[0037] FIG. 6B illustrates the room 600 of the embodiment of FIG. 6A as it is configured immediately after a workout is finished. The exercisers have left the room, the door 612 and the shutters on the large window 610 have been opened by the programmatic controller, and the fan 604 is operating at maximum, so as to cause a rapid exchange of air between the room 600 and the environment immediately outside of the room. This quickly returns the climate in the room 600 to the desired starting conditions maintained immediately outside of the room, so that a new exercise session can begin as quickly as possible after the previous session has ended.

[0038] FIG. 7 illustrates a preferred embodiment in which a plurality of individuals 700 can participate in a simultaneous exercise session on a plurality of stationary exercise devices 702, possibly taking part in a simulated bicycle race. In this embodiment, essentially identical localized exercise environments are created by multiple floor-mounted HVAC outlets 704 that create separate air curtains 706 about each of the exercise devices 702. The temperature of the air supplied by each of the HVAC outlets 704 is regulated by mixers 708 that mix together hot air 710 and cold air 712 so as to achieve the desired temperature. The mixers 708 are regulated by a programmatic controller 714, which executes a climate control program according to the passage of time and also according to physiological parameters measured by sensors 716 attached to the exercisers and transmitted to an antenna 718 on the programmatic controller 714.

[0039] FIG. 8 illustrates a preferred embodiment in which an exerciser 800 using a stationary exercise device 802 resides in a localized exercise environment controlled by an HVAC system with an outlet 804 above the exercise device and an air return inlet 806 below the device. Both the outlet 804 and the air return inlet 806 of the HVAC system are controlled by a programmatic controller 808 according to the passage of time. The localized exercise environment is surrounded by a set of panels 810 that serve to improve the isolation of the localized exercise environment near the exercise device. In preferred embodiments, the panels are transparent. In other preferred embodiments a flexible curtain or a flexible sheet of semi-rigid plastic is used to surround the exercise environment.

[0040] Other modifications and implementations will occur to those skilled in the art without departing from the spirit and the scope of the invention as claimed. Accordingly, the above description is not intended to limit the invention except as indicated in the following claims.

What is claimed is:

1. An apparatus for programmatically controlling the climate of a localized exercise environment, comprising:

- at least one climate control device, capable of controlling the exchange of heat between the localized exercise environment and at least one individual located within the localized exercise environment; and
- a programmatic controller capable of controlling the at least one climate control device during an exercise session according to a program.

2. The apparatus of claim 1, wherein the localized exercise environment is an enclosed room.

3. The apparatus of claim 2, wherein the enclosing boundaries of the enclosed room include at least one large opening that can be closed to isolate the climate within the room from the climate immediately outside of the room, and can be

opened to allow rapid equalization between the climate within the room and the climate immediately outside of the room.

4. The apparatus of claim 3, wherein at least one of a fan and other air movement devices is used when the large opening is open to accelerate the equalization between the climate within the room and the climate immediately outside of the room.

5. The apparatus of claim 1, wherein the localized exercise environment is the environment immediately surrounding at least one stationary exercise device that enables an individual to vigorously exercise while remaining in essentially the same location.

6. The apparatus of claim 5, wherein at least one of the stationary exercise devices is one of an exercise cycle, a treadmill, an exercise stepper, an elliptical, a free weight machine, and an exercise mat.

7. The apparatus of claim 5, wherein the localized exercise environment surrounding at least one of the stationary exercise devices is at least partially enclosed by a closeable barrier.

8. The apparatus of claim 7, wherein the closable barrier is at least one of a flexible curtain, a semi-rigid plastic sheet, and a set of inter-connecting panels.

9. The apparatus of claim 1, wherein the localized exercise environment is composed of multiple, essentially identical localized exercise environments.

10. The apparatus of claim 1, wherein at least one of the climate control devices is able to control at least one of the direction and the flow rate of air within the localized exercise environment.

11. The apparatus of claim 1, wherein at least one of the climate control devices is able to control the humidity of the air within the localized exercise environment.

12. The apparatus of claim 1, wherein at least one of the climate control devices is able to apply heat to individuals located in the localized exercise environment through at least one of radiation, convection, and conduction.

13. The apparatus of claim 12, wherein at least one of the climate control devices is able to heat the air within the localized exercise environment.

14. The apparatus of claim 12, wherein at least one of the climate control devices includes a radiant heat source that can be directed toward at least one individual exercising in the localized exercise environment.

15. The apparatus of claim 12, wherein at least one of the climate control devices is able to heat at least one surface that is in physical contact with at least one of the body and the clothing of at least one individual exercising in the localized exercise environment.

16. The apparatus of claim 1, wherein at least one of the climate control devices is able to remove heat from at least one individual exercising in the localized exercise environment through at least one of convection, conduction, and evaporation.

17. The apparatus of claim 16, wherein at least one of the climate control devices is able to cool the air within the localized exercise environment.

18. The apparatus of claim 16, wherein at least one of the climate control devices is able to cool at least one surface that is in physical contact with at least one of the body and the clothing of at least one individual exercising in the localized exercise environment.

19. The apparatus of claim 16, wherein at least one of the climate control devices is able to apply a cooling liquid to the body of at least one individual exercising in the localized exercise environment, the cooling liquid being in the form of at least one of a flow of liquid and a mist of liquid droplets.

20. The apparatus of claim 19, wherein the cooling liquid is water.

21. The apparatus of claim 1, wherein the program used by the programmatic controller is executed at least partly according to elapsed time.

22. The apparatus of claim 1, wherein the program used by the programmatic controller is at least partially derived from at least one of the temporal and acoustic features of music.

23. The apparatus of claim 1, wherein the program used by the programmatic controller is executed at least partly according to at least one measured exercise parameter of at least one exerciser in the localized exercise environment.

24. The apparatus of claim 23, wherein the at least one measured exercise parameter is at least one of the amount of exercise that has been performed and the rate at which exercise is being performed.

25. The apparatus of claim 23, wherein the program used by the programmatic controller is executed at least partly according to at least one of an average over time of at least one measured exercise parameter and an average over a plurality of exercising individuals of at least one measured exercise parameter.

26. The apparatus of claim 1, wherein the program used by the programmatic controller is executed at least partly according to at least one measured physiological parameter of at least one exerciser in the localized exercise environment.

27. The apparatus of claim 26, wherein the at least one measured physiological parameter is at least one of the heart rate, breathing rate, skin temperature, and degree of perspiration.

28. The apparatus of claim 26, wherein the at least one physiological parameter is measured by at least one of a sensor attached to an exerciser in the localized exercise environment and a sensor attached to a stationary exercise device in the localized exercise environment and in physical contact with an exerciser.

29. The apparatus of claim 26, wherein the program used by the programmatic controller is executed at least partly according to at least one of an average over time of the at least one measured physiological parameter and an average of the at least one measured physiological parameter over a plurality of exercising individuals in the localized exercise environment.

30. The apparatus of claim 26, wherein the program used by the programmatic controller is executed at least partly according to at least one of the age, the weight, and the height of at least one exerciser in the localized exercise environment.

31. The apparatus of claim 30, wherein the program used by the programmatic controller is executed at least partly according to at least one measured exercise parameter of the at least one exerciser in the localized exercise environment, and wherein the program evaluates the at least one measured exercise parameter according to at least one of the age, the weight, and the height of the at least one exerciser.

32. The apparatus of claim 30, wherein the program used by the programmatic controller is executed at least partly according to at least one measured physiological parameter of the at least one exerciser in the localized exercise environment, and wherein the program evaluates the at least one measured physiological parameter according to the age, the weight, and the height of the at least one exerciser.

33. A method for programmatically controlling the climate of a localized exercise environment, comprising:

providing at least one climate control device, capable of controlling the exchange of heat between the localized exercise environment and at least one individual located within the environment, and a programmatic controller capable of controlling the at least one climate control device during an exercise session according to a program;

commencing of an exercise session by at least one individual within the localized exercise environment; and at least one of heating and cooling of the at least one individual during the exercise session by the at least one climate control device according to a program executed by the programmatic controller.

* * * * *