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(54) **CARDIOVASCULAR MILES**

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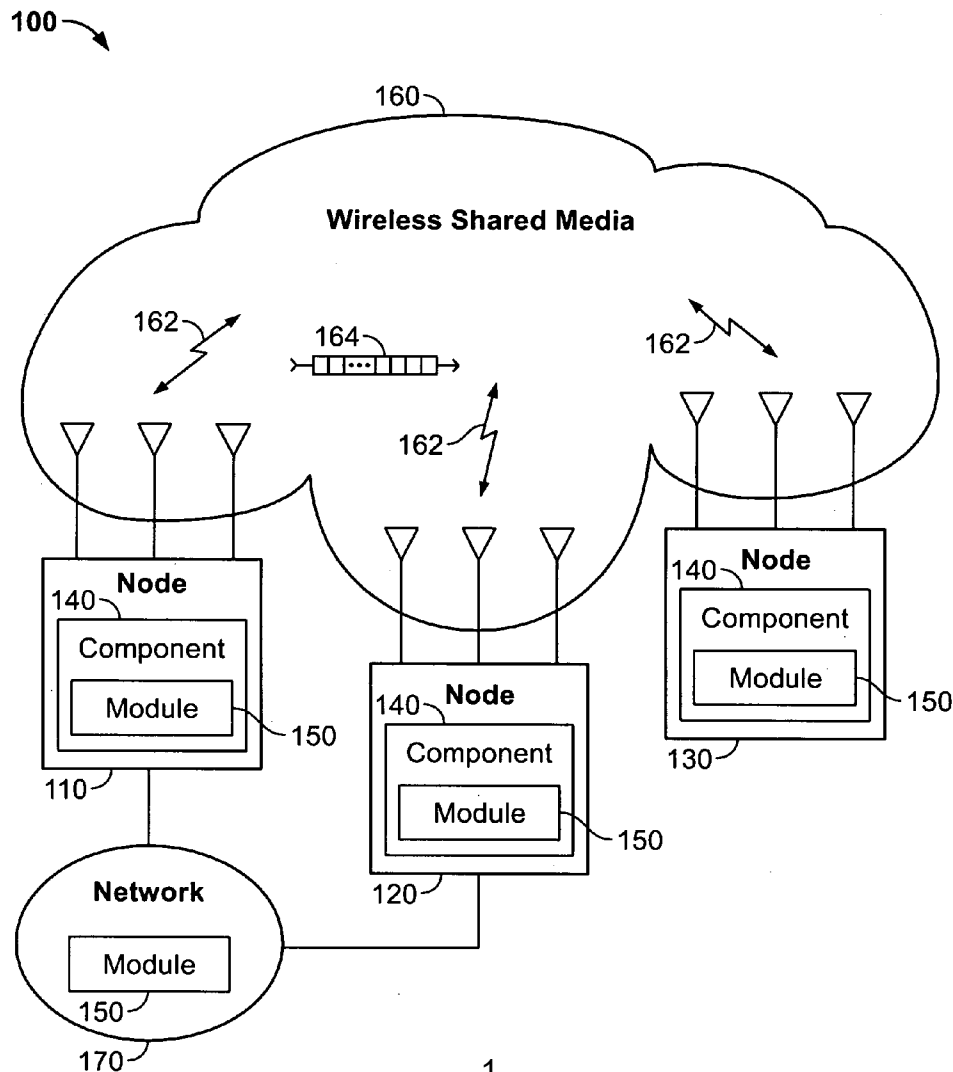
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(60) Provisional application No. 61/012,410, filed on Dec.
7, 2007, provisional application No. 61/033,355, filed
on Mar. 3, 2008.

(57) **ABSTRACT**

A system and method is provided that converts various athletic performance metrics/types to a standard or common unit of measurement. For example, in an embodiment, various athletic performance types are converted to an equivalent miles run. In another example, various types of athletic activities are converted to an equivalent number of credits that may be used to acquire rewards or other items. A conversion factor may be personalized based on an athlete's attributes such as height, weight, gender, age and the like.



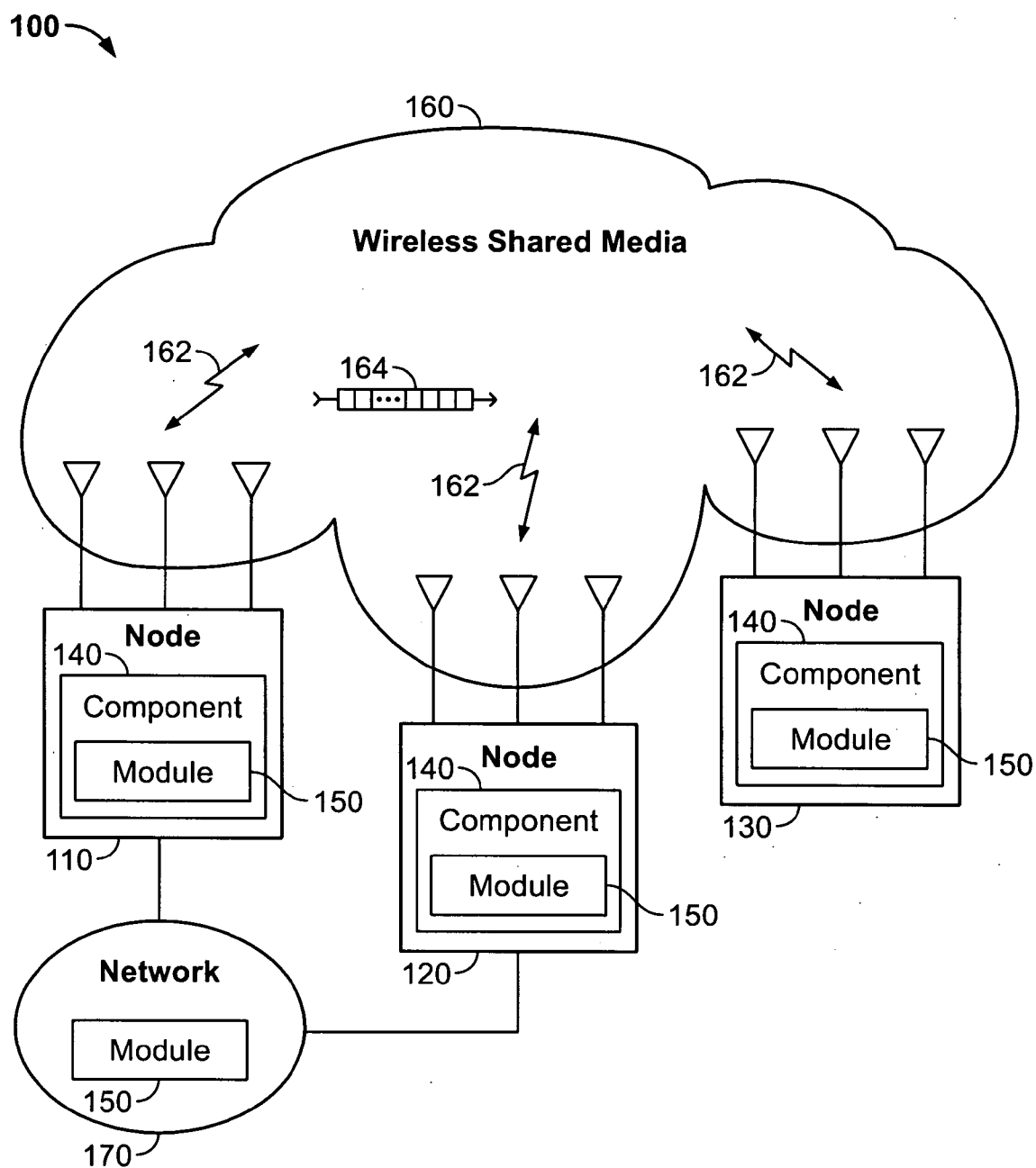


FIG. 1

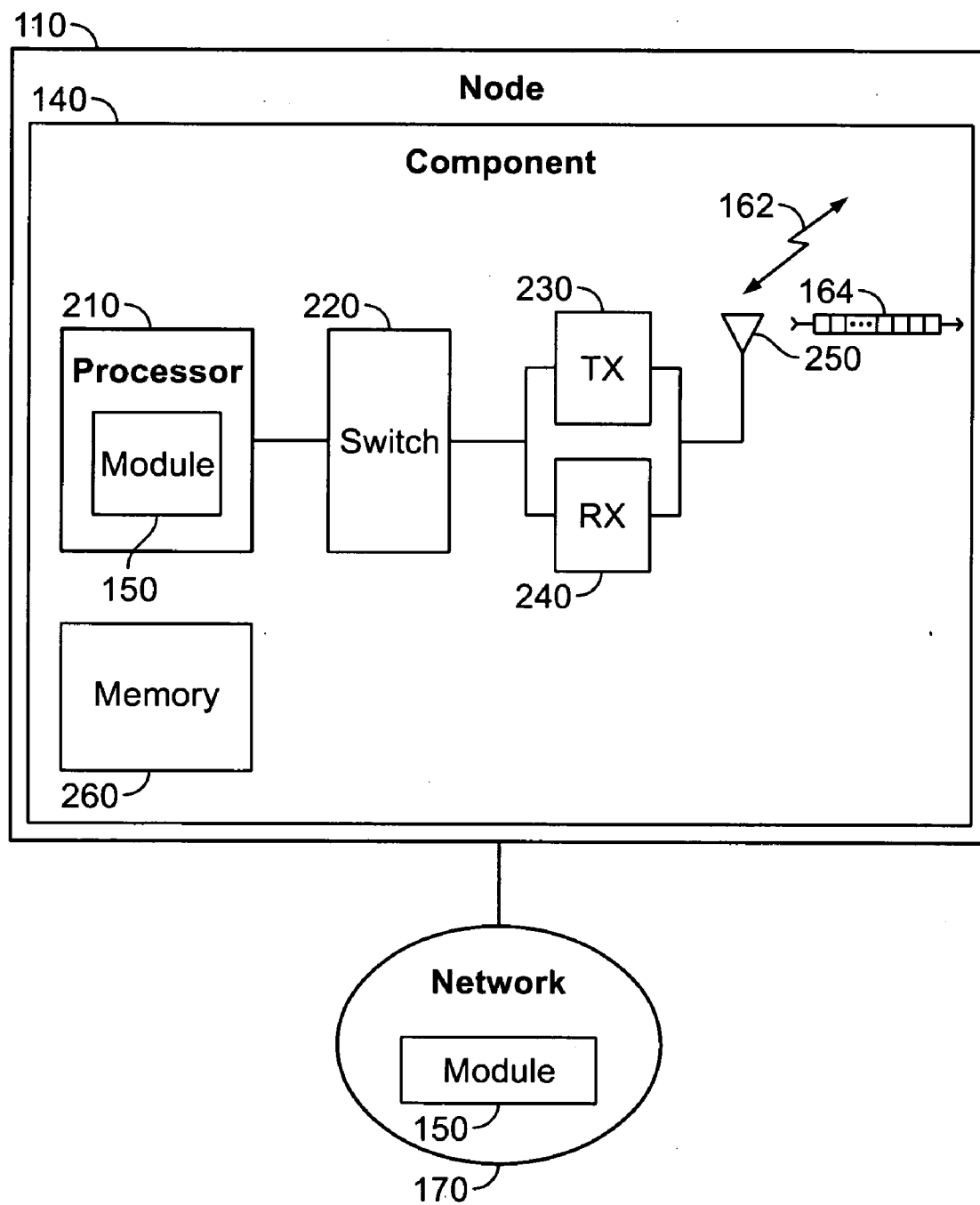


FIG. 2

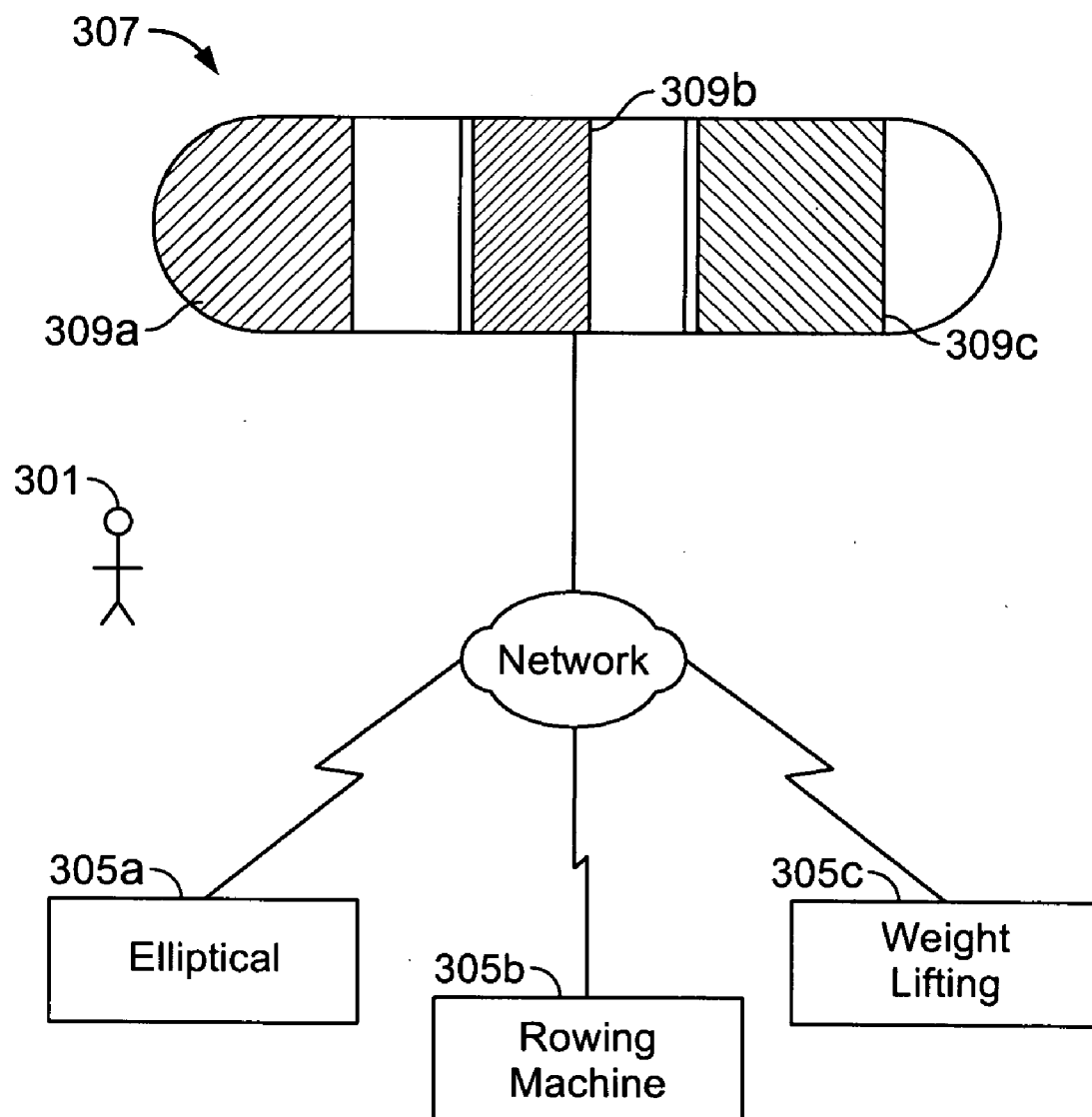
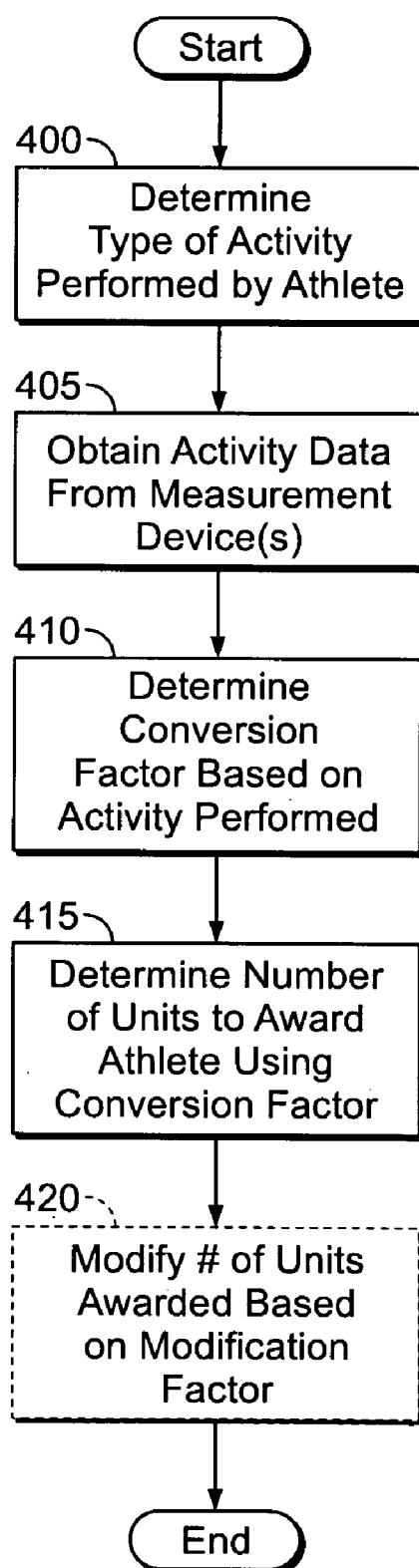


FIG. 3

**FIG. 4**

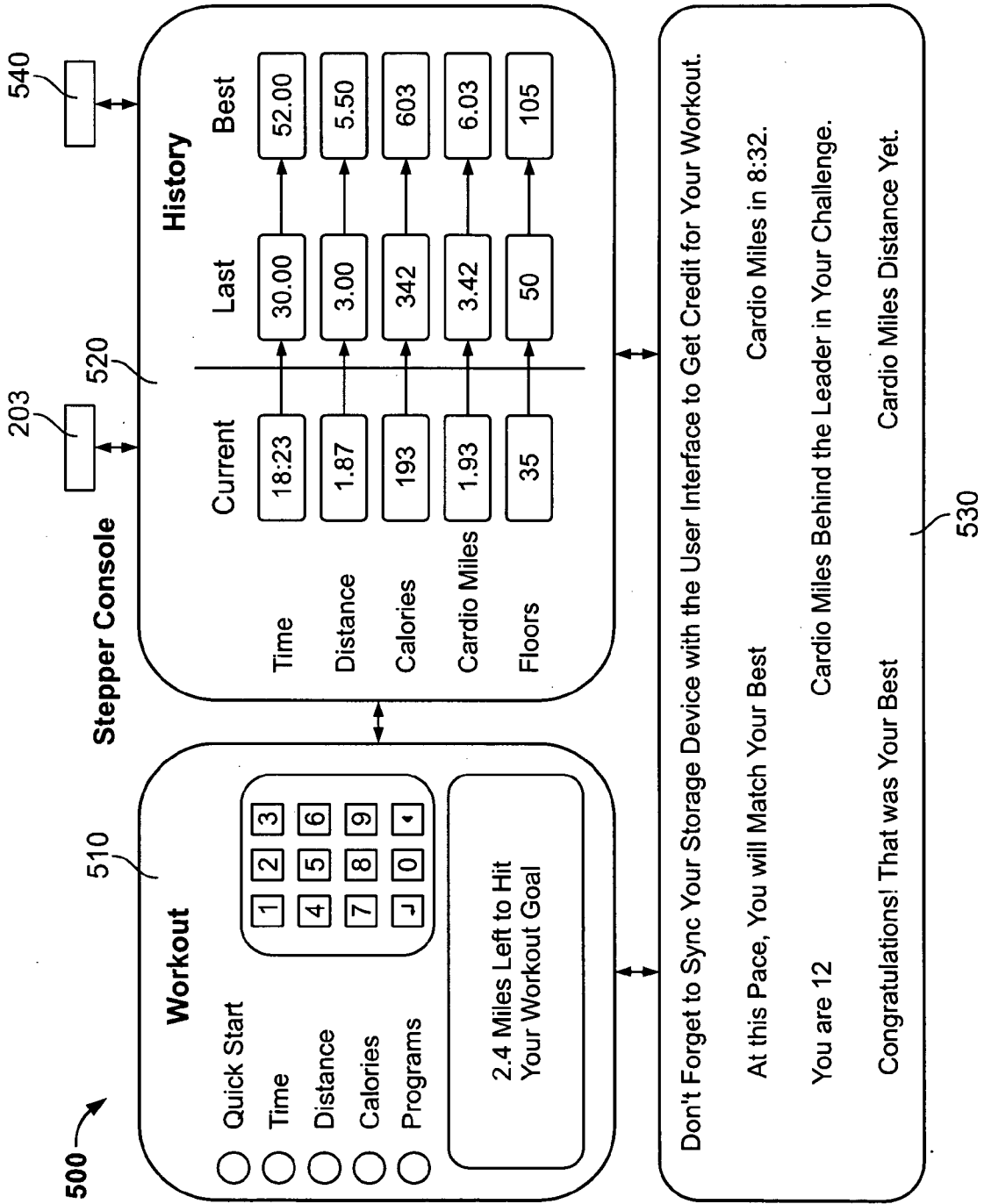


FIG. 5

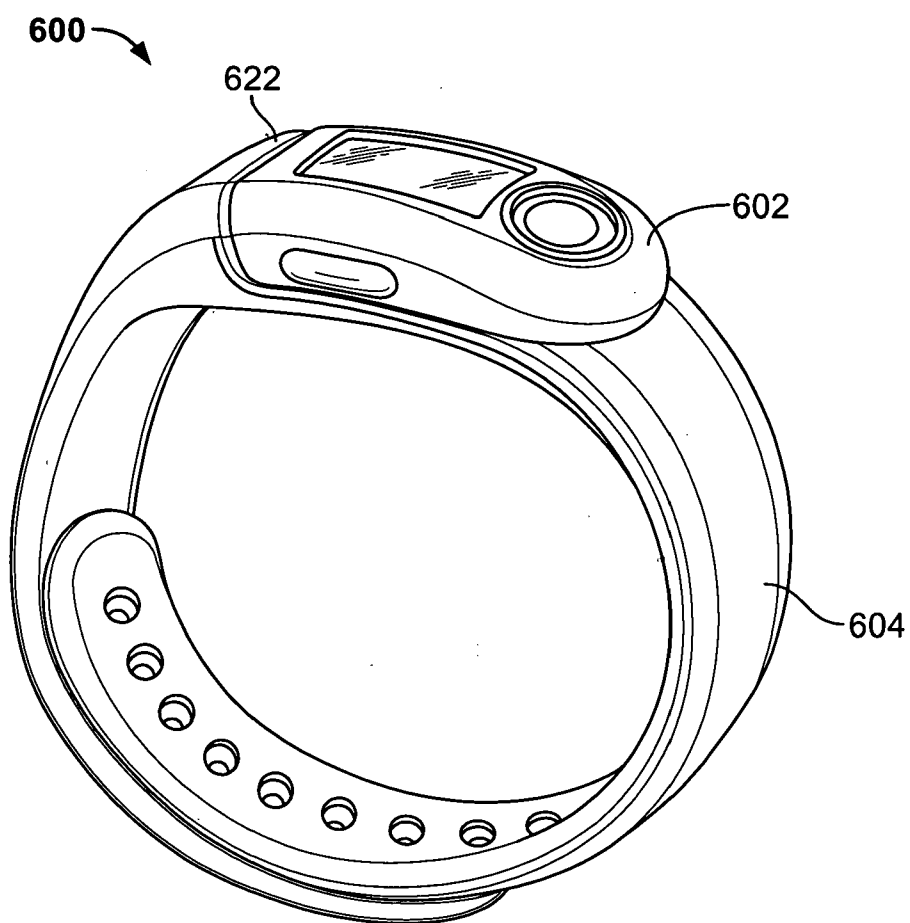


FIG. 6

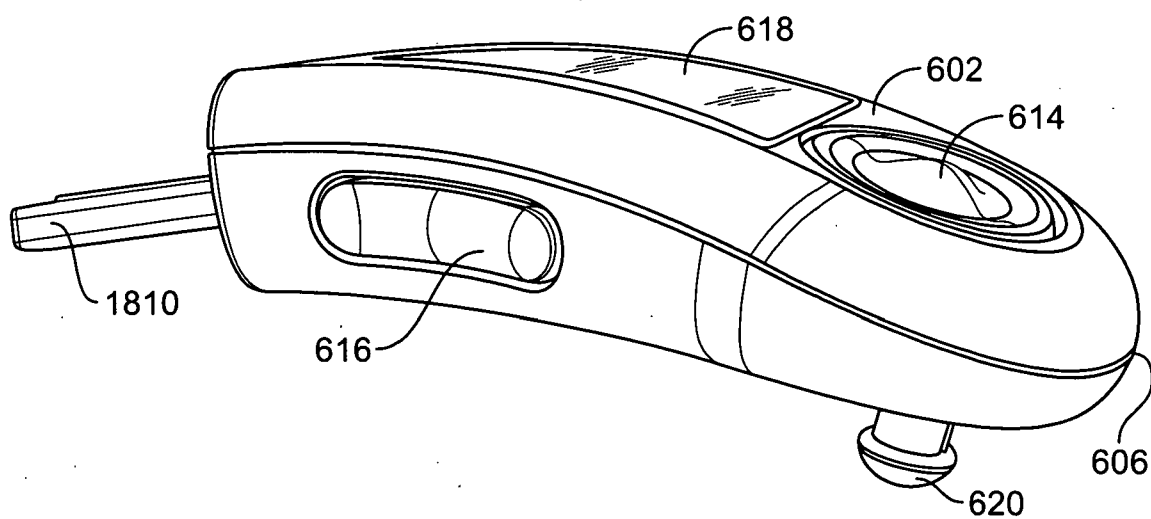


FIG. 7

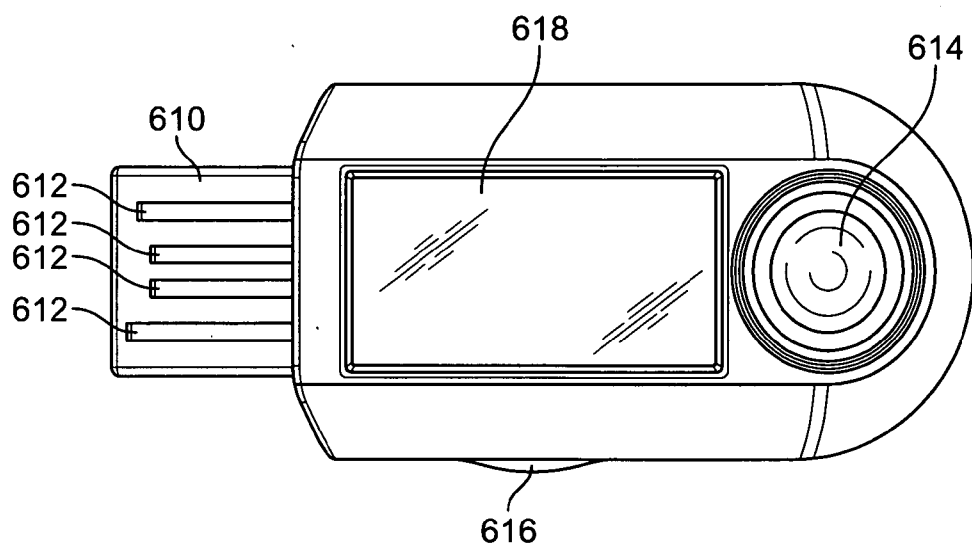


FIG. 8

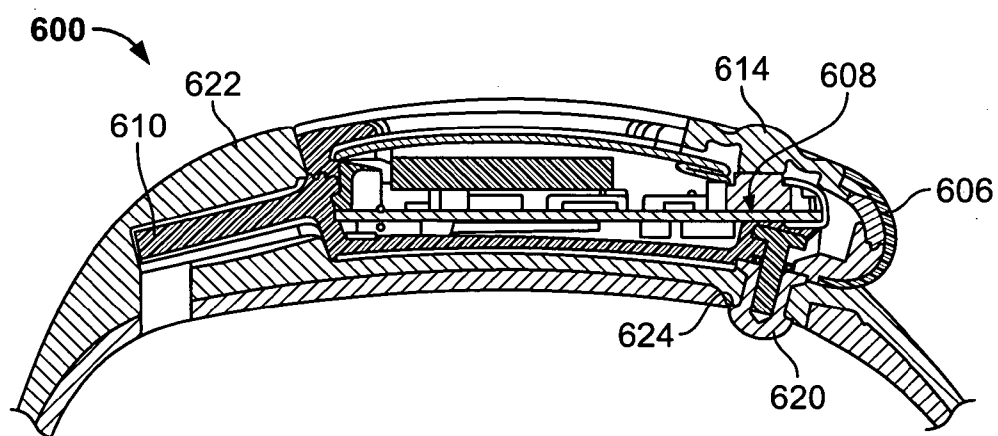


FIG. 9

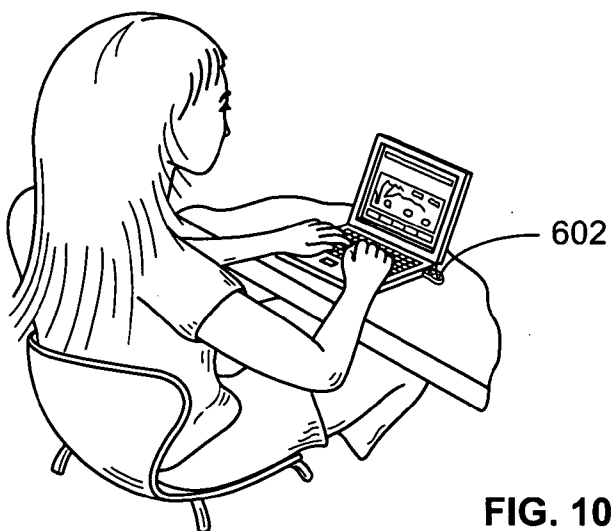


FIG. 10

Controls View Store Advanced Help

View

Name	Time	Artist	Album	Play (Gen)
☒ Welcome To Oblivion	6:07	The Angelic Process	...And Your Blood Is Full OF Honey	Metz
☒ Mouvement- Humble Man	1:29	The Angelic Process	...And Your Blood Is Full OF Honey	Metz
☒ Worried Man	4:41	The Angelic Process	...And Your Blood Is Full OF Honey	Metz
☒ ...And Your Blood Is Full of Honey	4:20	The Angelic Process	...And Your Blood Is Full OF Honey	Metz
☒ Mouvement- The Body In Its Space	1:04	The Angelic Process	...And Your Blood Is Full OF Honey	Metz
☒ The Ruined Life Of Someone Better	8:47	The Angelic Process	...And Your Blood Is Full OF Honey	Metz
☒ Hang Him Higher	4:24	The Angelic Process	...And Your Blood Is Full OF Honey	Metz
☒ Cages Of Blood And Bone	4:36	The Angelic Process	...And Your Blood Is Full OF Honey	Metz
☒ El año de la serpiente	4:30	Calamento	Neko-Mata	Unk
☒ Bagdad flamenco	3:30	Calamento	Neko-Mata	Unk
☒ La llamada	3:24	Calamento	Neko-Mata	Unk
☒ Morbido picnic	5:01	Calamento	Neko-Mata	Unk
☒ Calamento	3:12	Calamento	Neko-Mata	Unk
☒ Gnomo	4:31	Calamento	Neko-Mata	Unk
☒ Neko-Mata	4:27	Calamento	Neko-Mata	Unk
☒ Lady Paprika	3:01	Calamento	Neko-Mata	Unk
☒ Satgalla				Unk
☒ Wild Horses (Live Featuring Lovemongers)				Rock
☒ Seasons				Rock
☒ Loaded				Hard
☒ So Fine				Hard
☒ Restless				Hard
☒ Shine				Hard
☒ Mad Parade				Hard
☒ Red Sun Rising				Hard
☒ Commercial Break	2:29	Circus Diablo	Circus Diablo	Hard
☒ Hello, Goodbye	3:51	Circus Diablo	Circus Diablo	Hard
☒ Ants Invasion	3:29	Circus Diablo	Circus Diablo	Hard
☒ Rollercoaster	3:47	Circus Diablo	Circus Diablo	Hard
☒ Dignified	4:47	Circus Diablo	Circus Diablo	Hard
☒ Brewicide	5:49	Dark Load/Kim Thayil	Guitars That Rule the World, Vol. 2: Smell ...	Rock

Do you want to automatically send your workout data to com when you sync your Digital Music Player

With com and a account, you can view, analyze and share your workouts with others.

Send Don't Send

FIG. 11

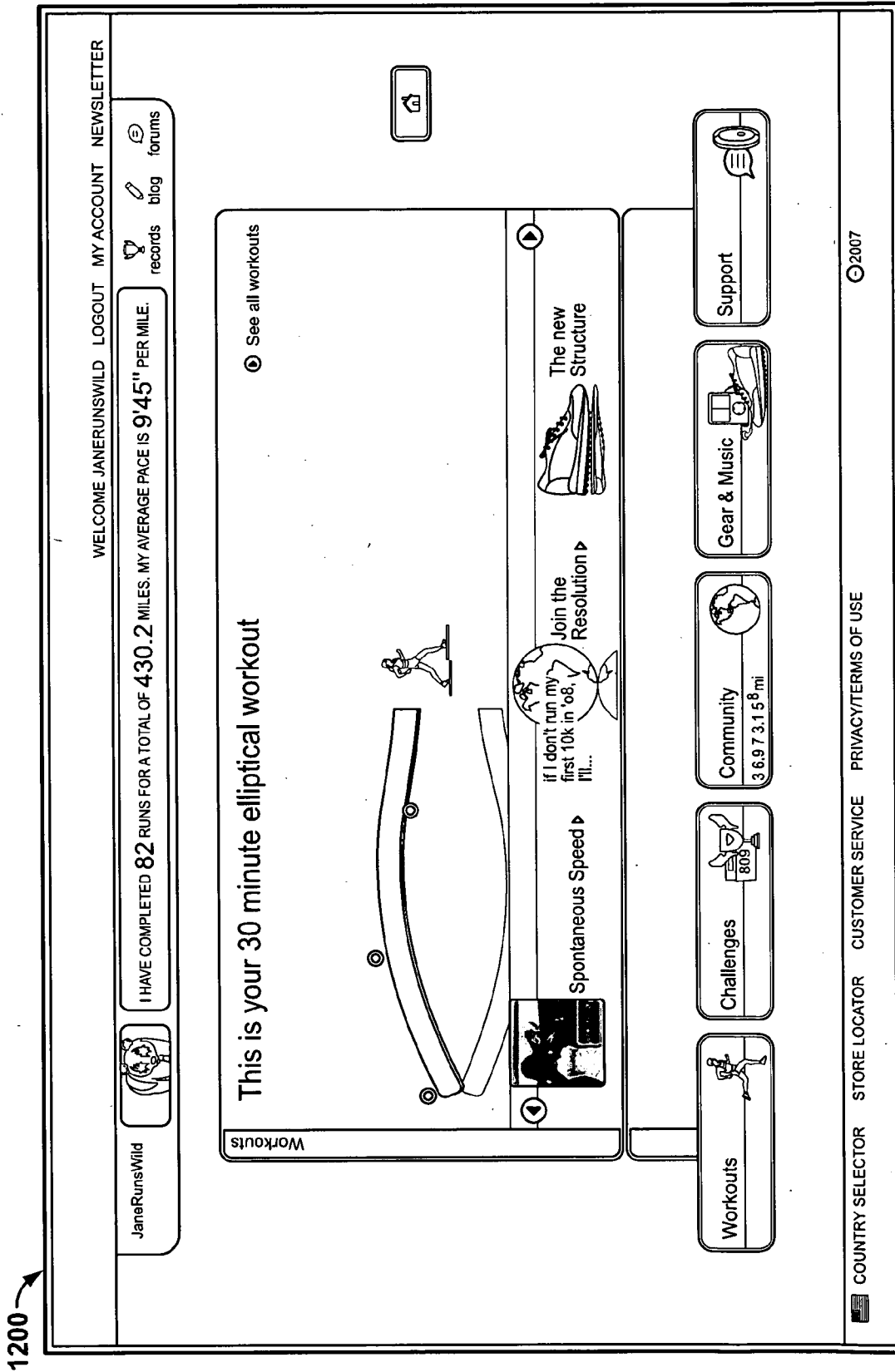


FIG. 12

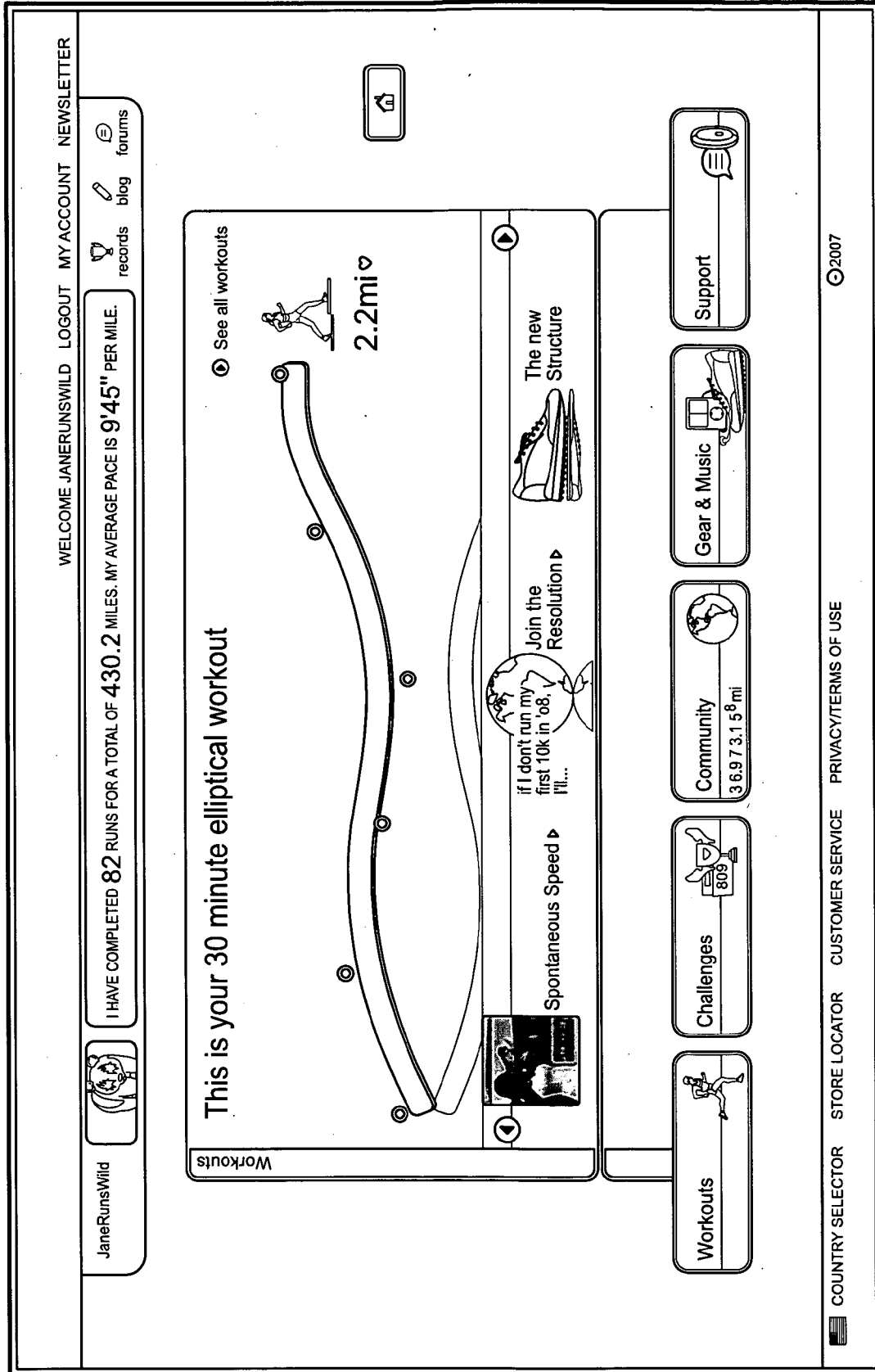


FIG. 13

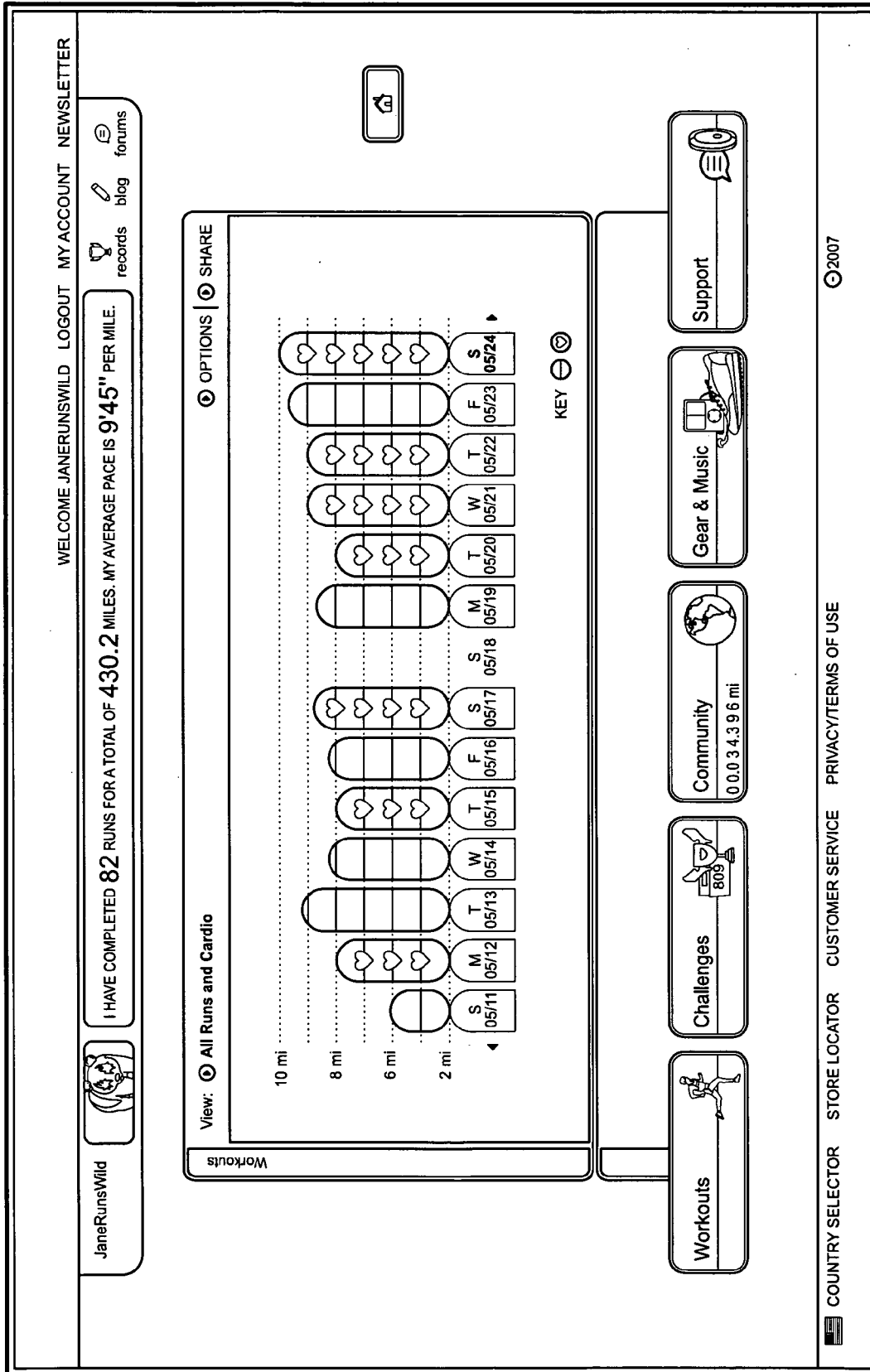


FIG. 14

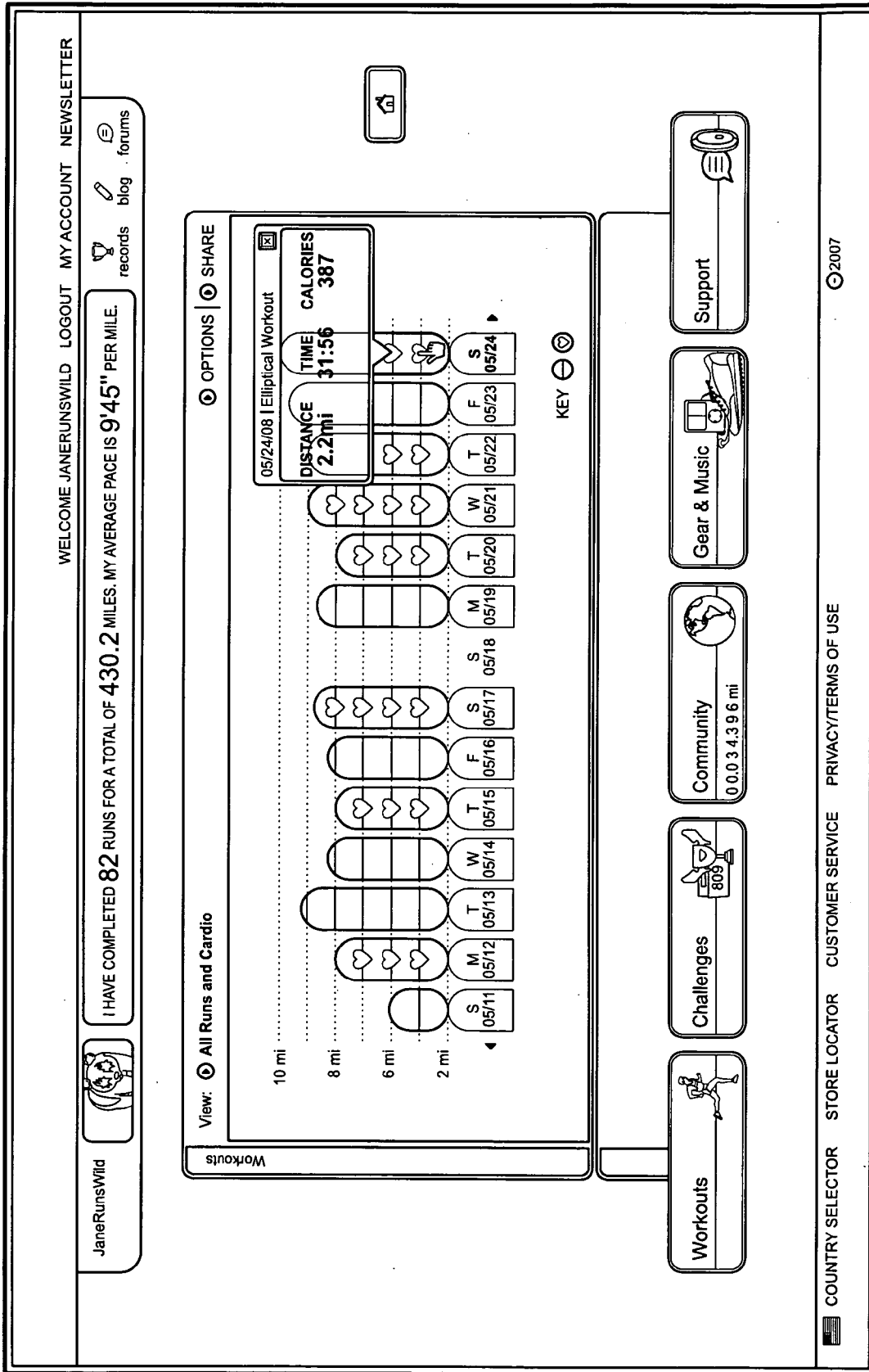


FIG. 15

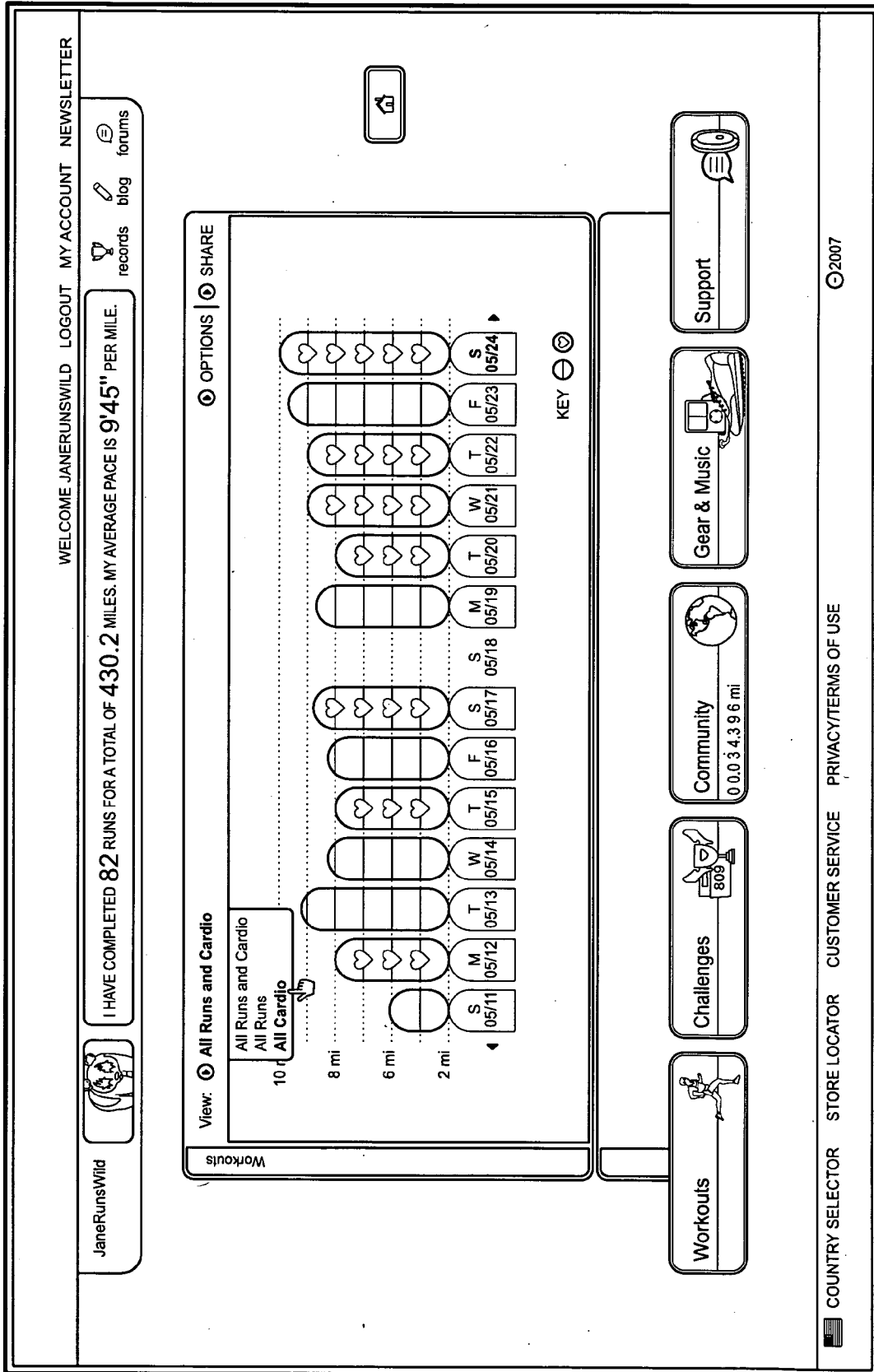


FIG. 16

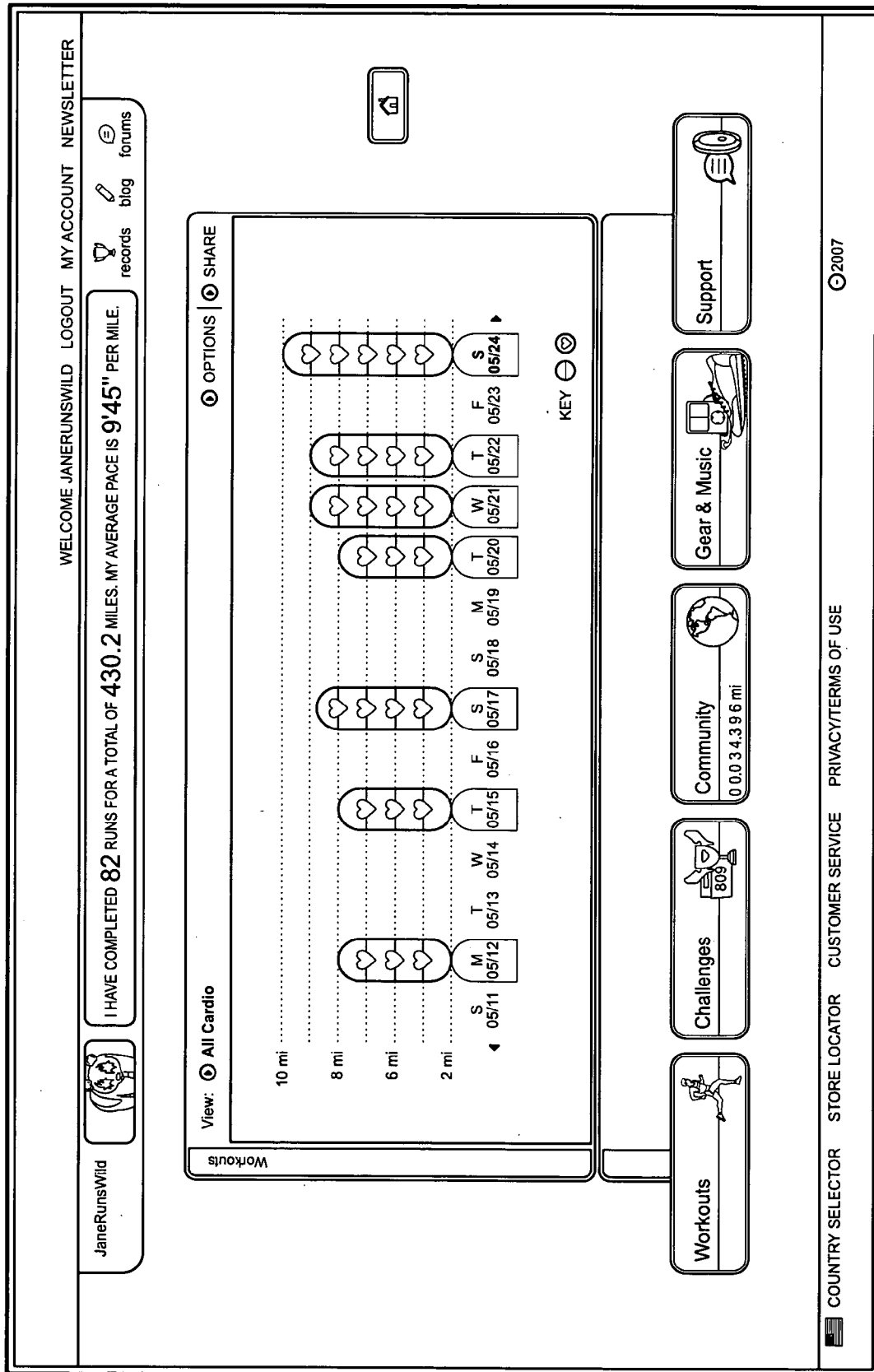


FIG. 17

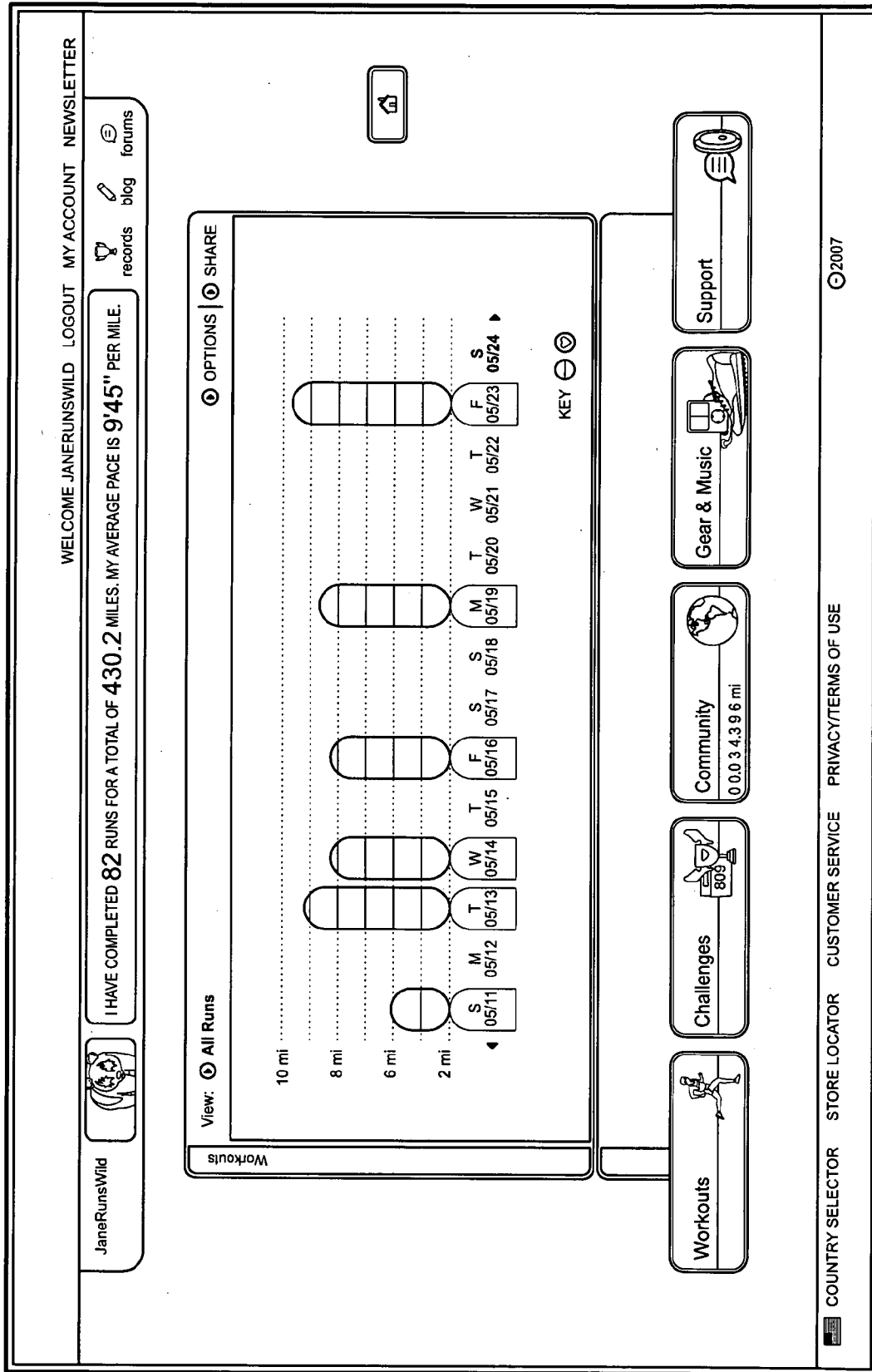


FIG. 18

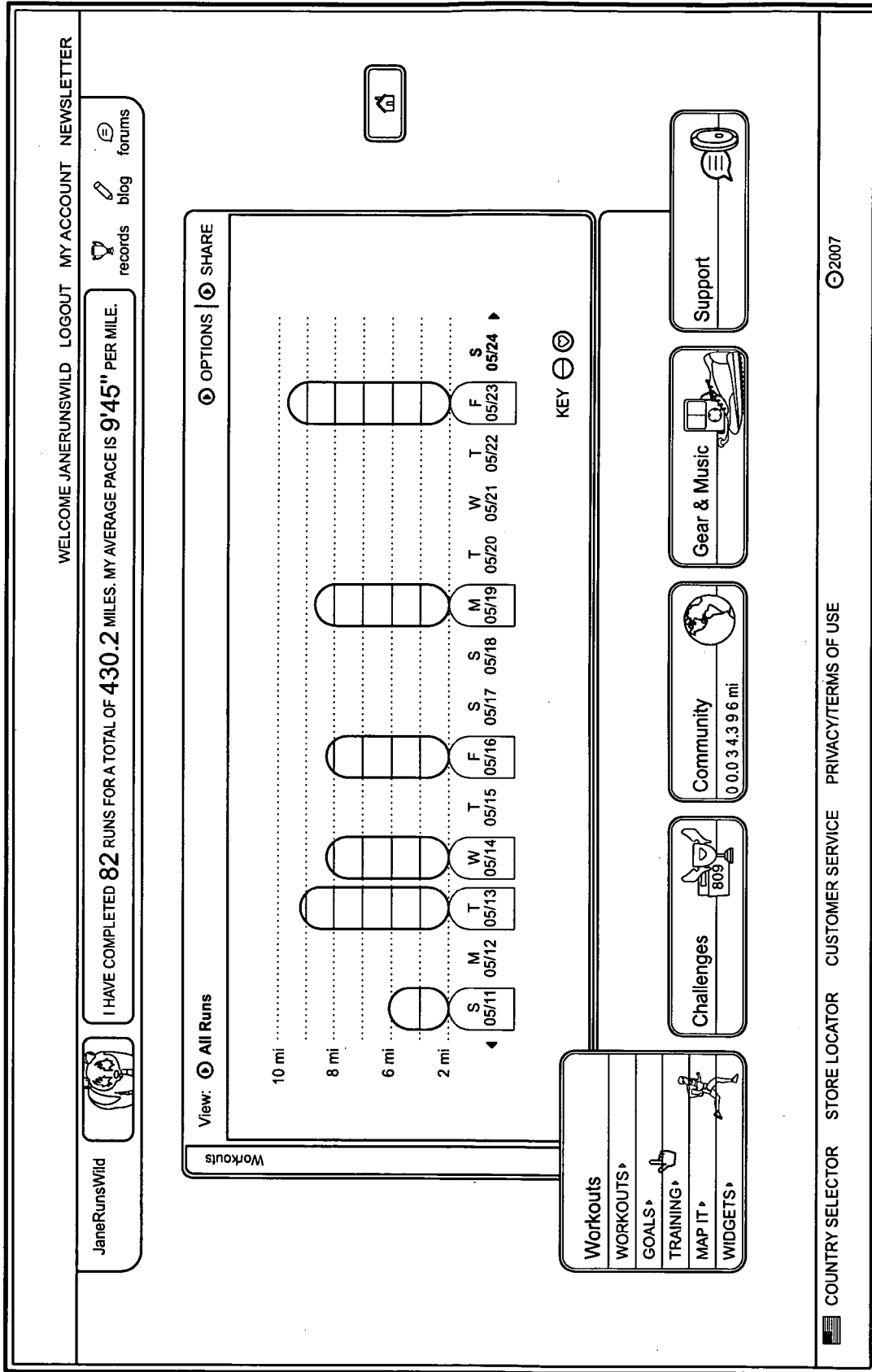


FIG. 19

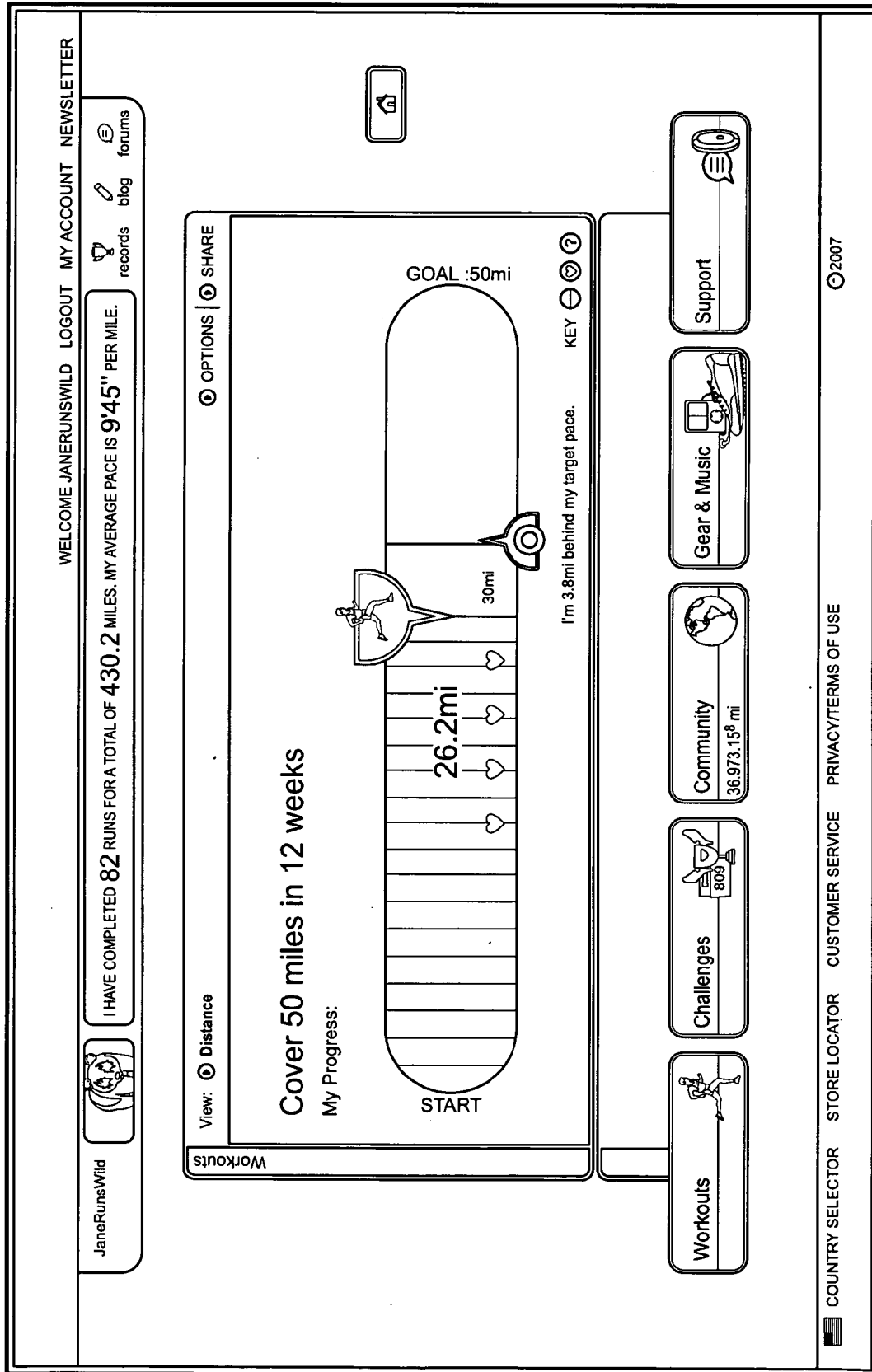


FIG. 20

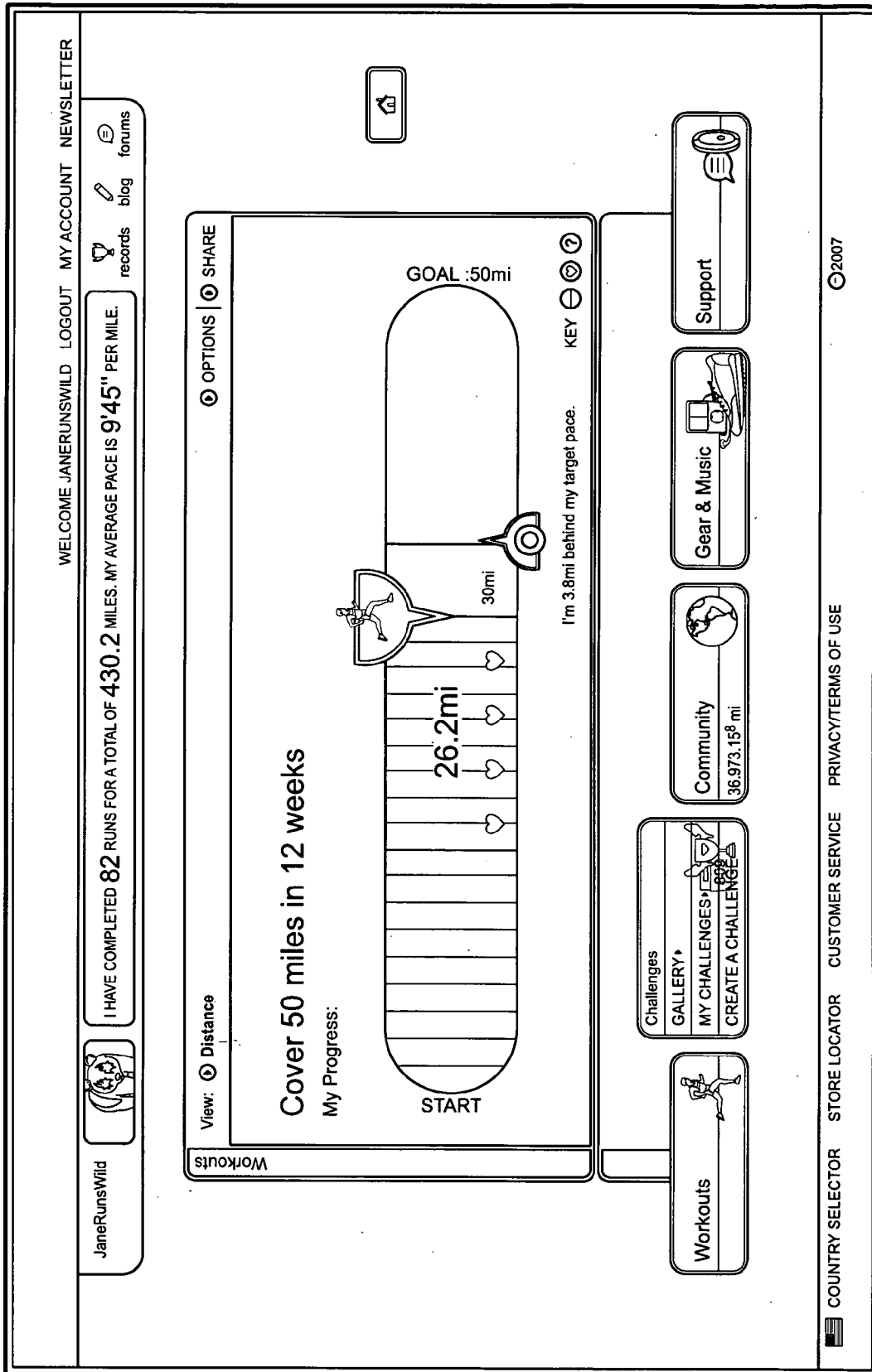


FIG. 21

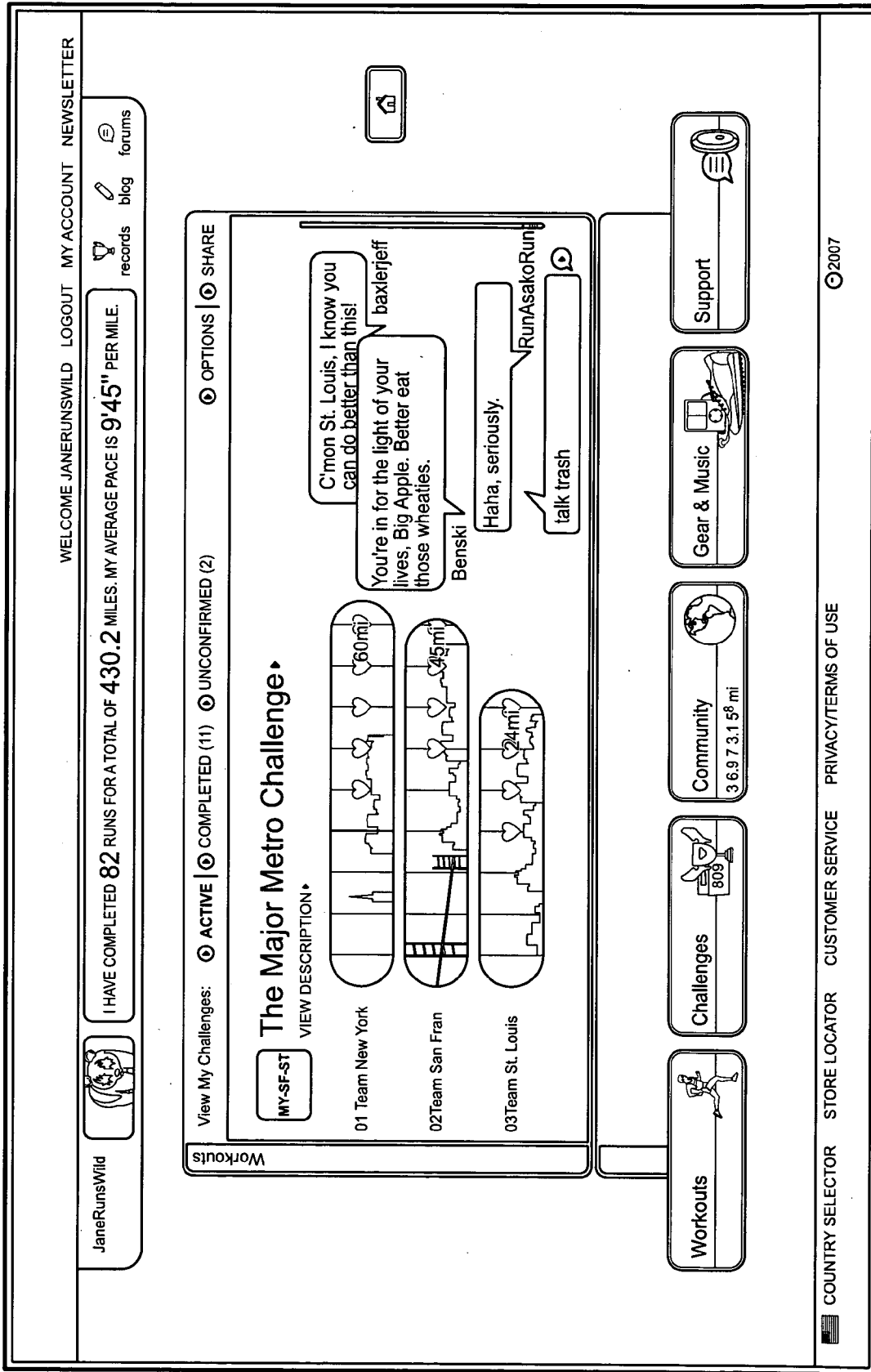


FIG. 22

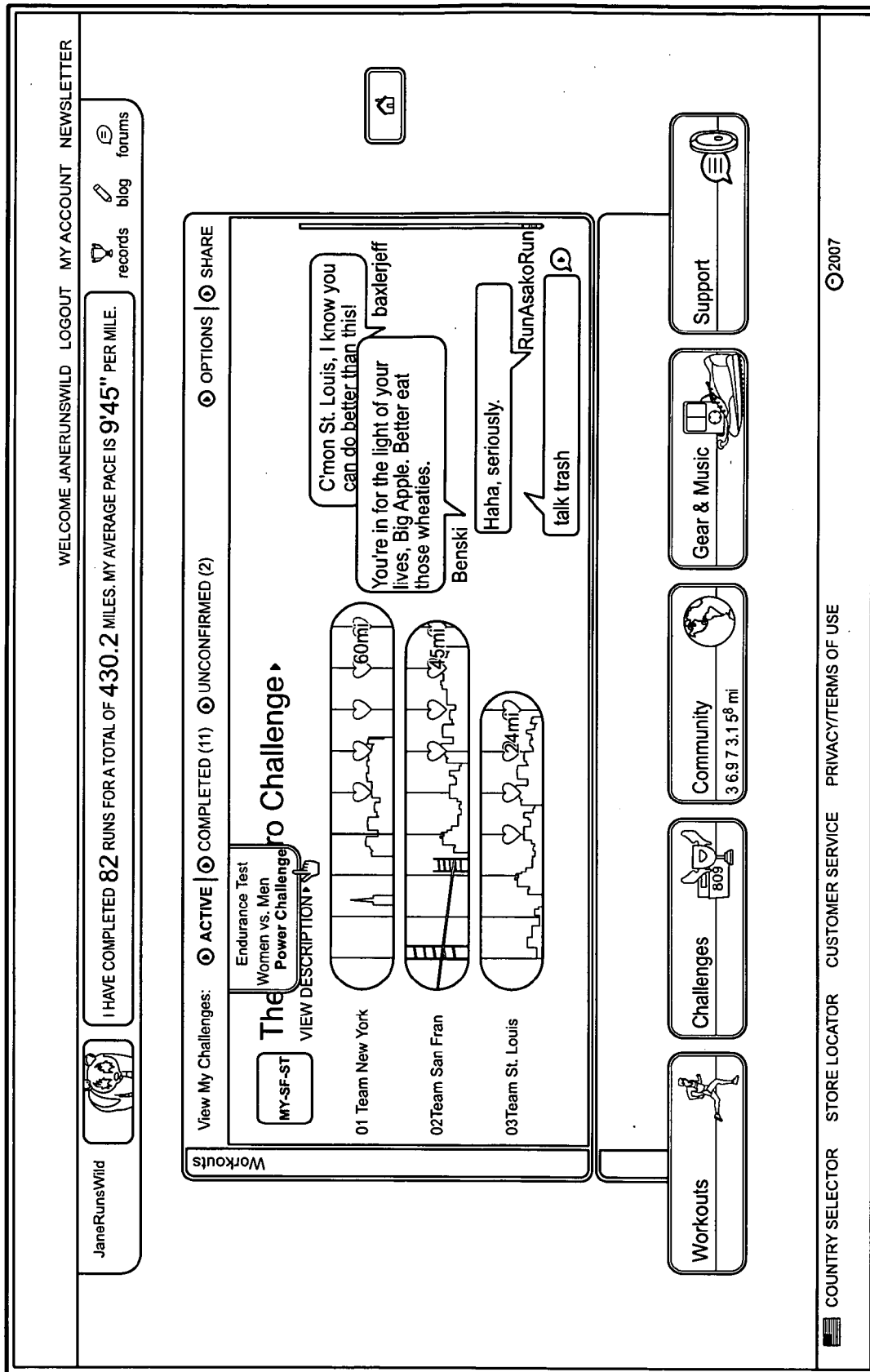


FIG. 23

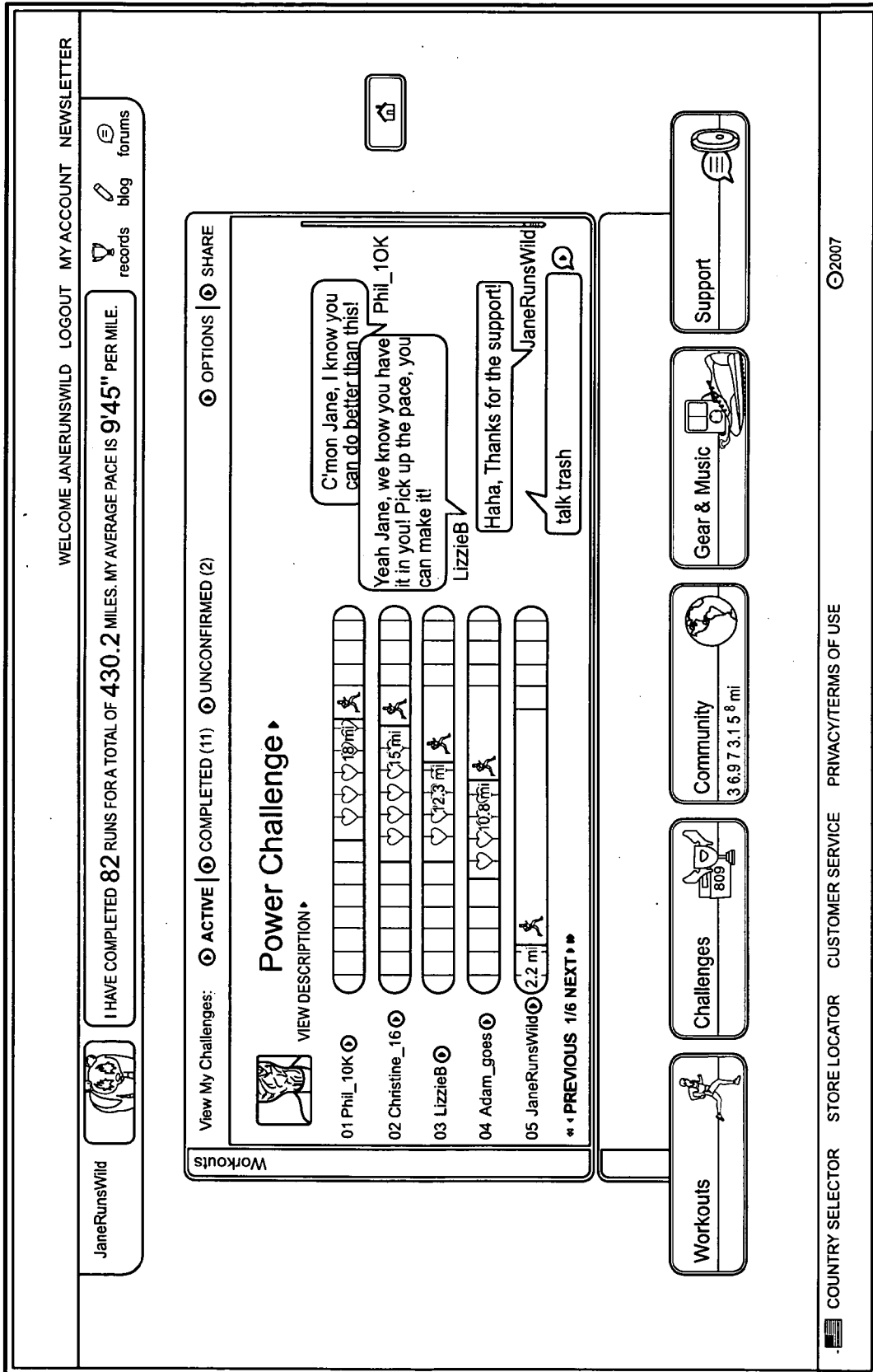


FIG. 24

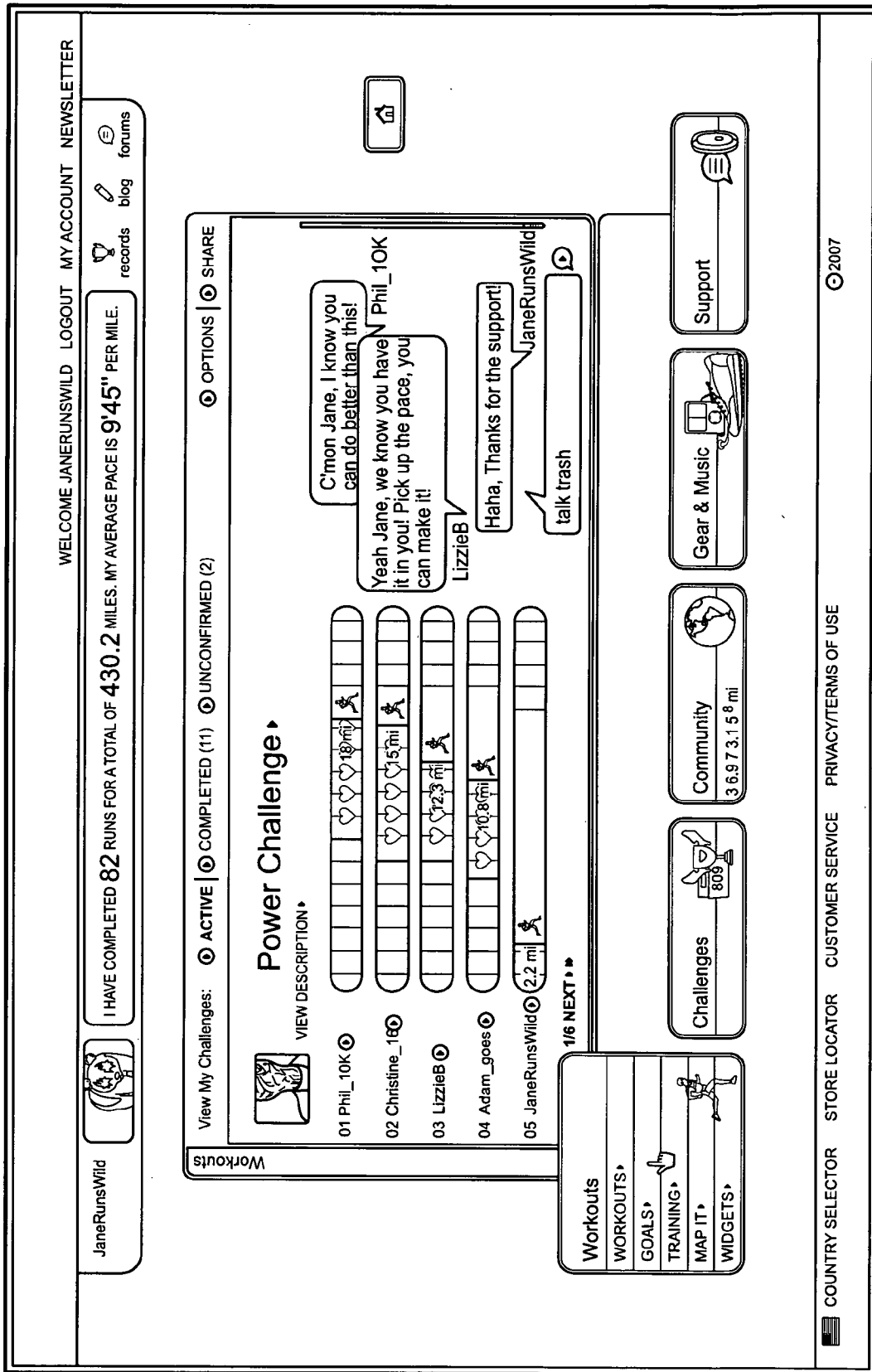


FIG. 25

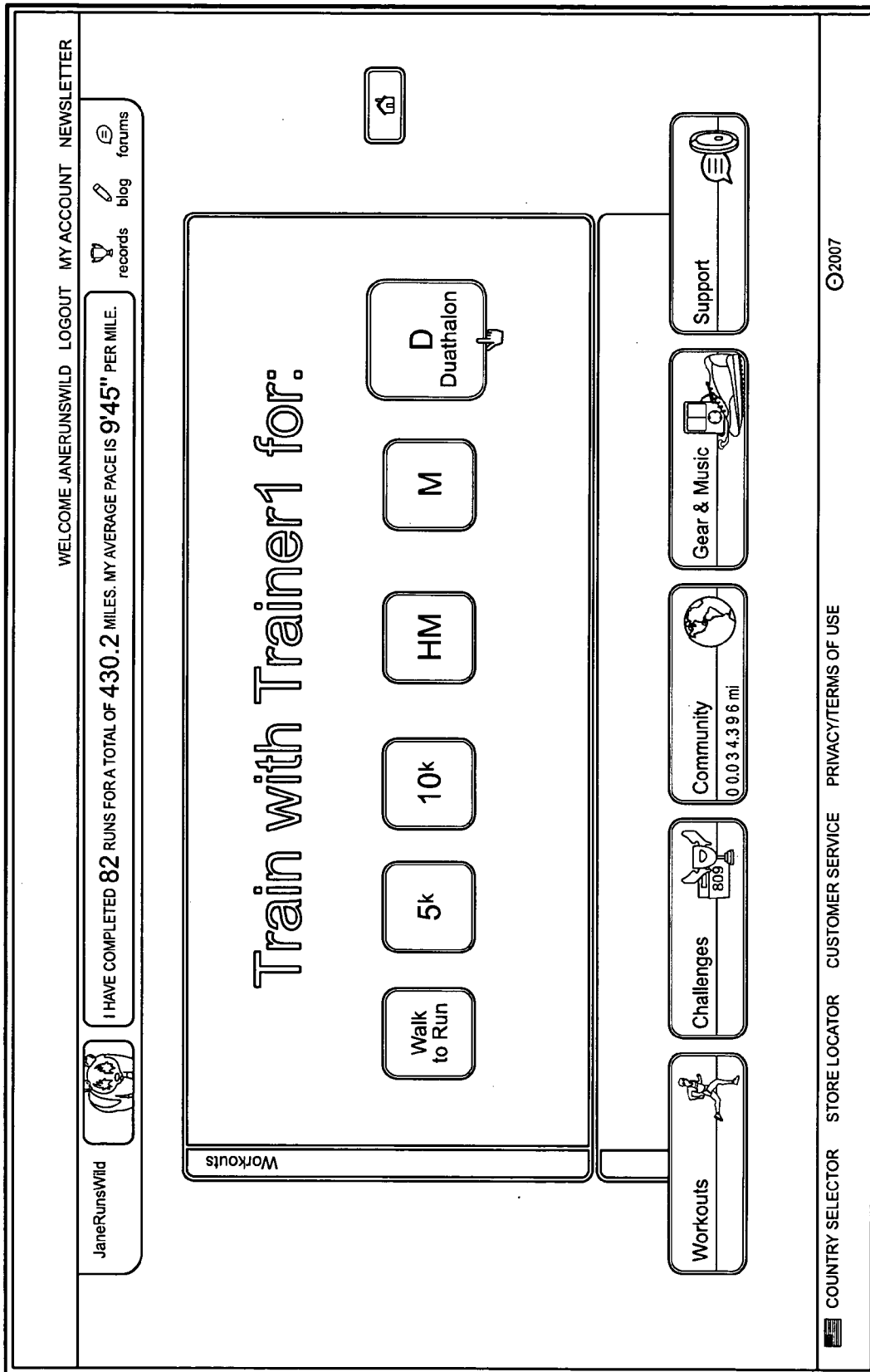


FIG. 26

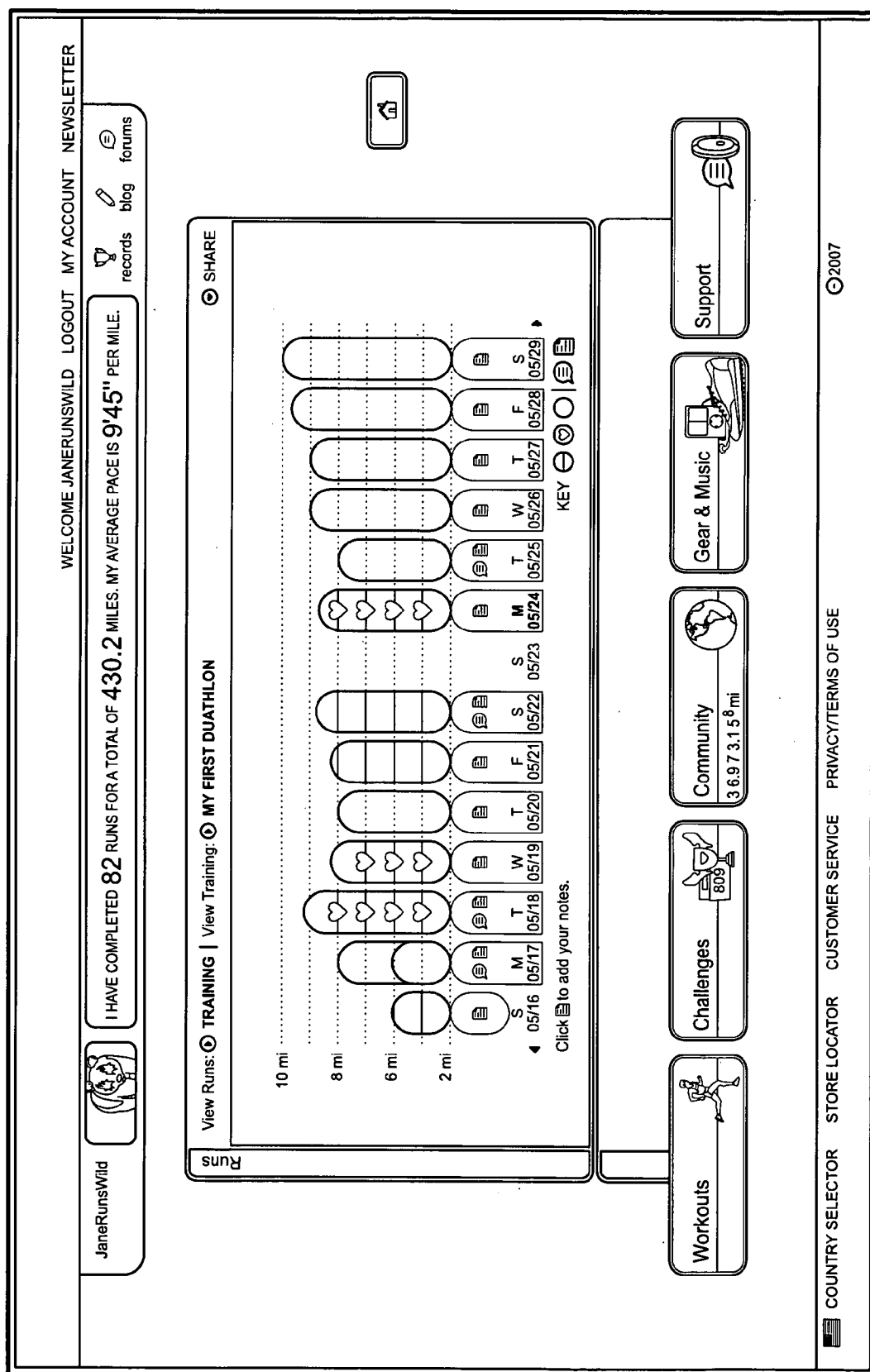


FIG. 27

CARDIOVASCULAR MILES

RELATED APPLICATION

[0001] The present application is a continuation-in-part of and claims the benefit of and priority to U.S. Patent Application No. 61/012,410 filed on Dec. 7, 2007 and U.S. Patent Application No. 61/033,355 filed on Mar. 3, 2008, which applications are incorporated by reference and made a part hereof.

BACKGROUND

[0002] Athletes or otherwise active or fitness-oriented people often track their athletic performance against personal goals, benchmarks, or the athletic performance of one or more other athletes or other active similarly situated people. However, it may be challenging to compare athletic performance, for example between two athletes, if their athletic performance differs in the form of exercise (e.g., if one athlete runs while the other resistance trains, bikes, rows, or the like). For example, a runner may track performance based on distance run such as the number of miles run. Another person may prefer to exercise on a cardio-type machine such as an elliptical machine. The "distance" covered while exercising on an elliptical machine, however, does not correspond to the number of miles run by a runner, e.g. a mile on the elliptical machine is not the same as a mile run. Thus, while certain athletic performance monitoring systems provide certain advantageous features, they nevertheless have certain limitations. The present invention is provided to address certain problems and provide features not heretofore available.

SUMMARY

[0003] The summary is provided to introduce a selection of concepts in a simplified form that are further described below in the Detailed Description. This Summary is not intended to identify key features or essential features of the claimed subject matter, nor is it intended to be used to limit the scope of the claimed subject matter.

[0004] According to one aspect of the invention, a system and method are provided for converting various athletic performance metrics/types to a standard unit of measurement. In one exemplary embodiment, certain exercise performed, for example, on cardio-related machines or weight machines is converted to the equivalent of a distance run such as the number of miles run.

[0005] According to another aspect of the invention, various athletic performance metrics/types may be converted to a unit of measurement useable to acquire rewards or items. In one example, the unit of measurement may be activity credits that may be used as currency in an athletic monitoring system to acquire various items. Such items may include apparel, personal devices (e.g., music players), gift cards and the like.

[0006] According to another aspect, challenges, goals and competitions may be created based on a common unit regardless of the unit(s) in which an activity associated with the challenge, goal or competition is typically measured. When athletic performance data is received, the data may be converted to the common unit using a conversion factor. Thus, different devices or activities may be used to achieve the goal, challenge or competition. For example, a competition may be specified in miles run. If a participant chooses to lift weights for the competition, the number of repetitions may be con-

verted to a number of miles run to determine whether the participant finished the competition.

[0007] According to yet another aspect, a conversion factor used to convert a first unit of athletic activity to a second unit may be determined based on the type of activity performed. Additionally or alternatively, the conversion factor may be personalized based on attributes of an individual. For example, weight, height, gender and age may contribute to a number of calories burned or amount of physical exertion.

BRIEF DESCRIPTION OF THE DRAWINGS

[0008] Certain embodiments are illustrated by way of example and not limited in the accompanying figures in which like reference numerals indicate similar elements and in which:

[0009] FIG. 1 illustrates a system of an embodiment.

[0010] FIG. 2 illustrates a node of an embodiment.

[0011] FIG. 3 illustrates a system in which multiple types of athletic activities may be tracked using a common unit according to one or more aspects described herein.

[0012] FIG. 4 illustrates a flowchart of a method for measuring athletic activity in terms of a common unit according to one or more aspects described herein.

[0013] FIG. 5 illustrates an example of a user interface that may be provided as part of athletic equipment according to various implementations of the invention;

[0014] FIGS. 6-9 illustrate example user devices that may be used to interface with athletic equipment and to store and transmit various data according to one or more aspects described herein.

[0015] FIG. 10 illustrates an example computing device to which user devices may be connected and through which data stored on the devices may be accessed according to one or more aspects described herein.

[0016] FIG. 11 illustrates an example user interface that may prompt a user to send workout data to one or more sites from a music device according to one or more aspects described herein.

[0017] FIGS. 12 and 13 illustrate example interfaces configured to track athletic activity of a user in terms of a specified measurement unit according to one or more aspects described herein.

[0018] FIG. 14 illustrates an example interface tracking daily athletic activity in which activity measured/recorded in a first unit is shown in a first manner and activity measured/recorded in a second unit is shown in a second manner according to one or more aspects described herein.

[0019] FIG. 15 illustrates an example interface in which further details of a daily amount of activity is displayed according to one or more aspects described herein.

[0020] FIG. 16 illustrates an example interface through which a user may select a display configuration according to one or more aspects described herein.

[0021] FIG. 17 illustrates an example interface that displays only activity recorded/measured in a cardiovascular mile unit according to one or more aspects described herein.

[0022] FIG. 18 illustrates an example interface displaying only activity recorded/measured in actual miles run according to one or more aspects described herein.

[0023] FIG. 19 illustrates an example interface that allows a user to choose different workouts for which to view workout data according to one or more aspects described herein.

[0024] FIG. 20 illustrates an example goal tracker interface that tracks a user's progress in reaching a goal taking into

account both actual miles run and cardiovascular miles according to one or more aspects described herein.

[0025] FIG. 21 illustrates an example interface that provides a challenges menu according to one or more aspects described herein.

[0026] FIG. 22 illustrates an example interface showing the progress of multiple teams of competitors in a challenge in terms of multiple units according to one or more aspects described herein.

[0027] FIG. 23 illustrates an example interface that allows a user to select other challenges to view according to one or more aspects described herein.

[0028] FIG. 24 illustrates an example interface displaying the progress of multiple participants in a challenge, wherein the progress is shown in multiple units according to one or more aspects described herein.

[0029] FIG. 25 illustrates an example interface for selecting a training workout according to one or more aspects described herein.

[0030] FIG. 26 illustrates an example interface through which a user may select various training programs according to one or more aspects described herein.

[0031] FIG. 27 illustrates an example interface for tracking progress in a duathlon according to one or more aspects described herein.

DETAILED DESCRIPTION

[0032] Embodiments of a method and system to track and compare athletic performance will be described. Reference will now be made in detail to a description of these embodiments as illustrated in the drawings. While the embodiments will be described in connection with these drawings, there is no intent to limit them to drawings disclosed herein. On the contrary, the intent is to cover all alternatives, modifications, and equivalents within the spirit and scope of the described embodiments as described herein.

[0033] Simply stated, an embodiment is a method and system for converting various athletic performance metrics/types to a standard unit of measurement. For example, in an embodiment, various athletic performance types may be converted to equivalent miles run. In that manner, a runner may compare their athletic performance as measured in miles run to a resistance trainer whose athletic performance (e.g., pounds lifted or the like) has been converted to equivalent miles run. Accordingly, myriad athletic performance metrics (and the athletes associated therewith) may be compared with each other or against goals or benchmarks by converting each athletic performance metric to a common unit.

[0034] FIG. 1 illustrates an embodiment of a system 100. In an embodiment, system 100 is a system to track and compare athletic performance. In various embodiments, the system 100 may comprise multiple nodes. A node generally may comprise any physical or logical entity for communicating information in the system 100 and may be implemented as hardware, software, or any combination thereof, as desired for a given set of design parameters or performance constraints. Although FIG. 1 may show a limited number of nodes by way of example, it can be appreciated that more or less nodes may be employed for a given implementation.

[0035] In various embodiments, a node may comprise, or be implemented as, a computer system, a computer subsystem, a computer, an appliance, a workstation, a terminal, a server, a personal computer (PC), a laptop, an ultra-laptop, a handheld computer, a personal digital assistant (PDA), a set

top box (STB), a telephone, a mobile telephone, a cellular telephone, a handset, a wireless access point, a base station (BS), a subscriber station (SS), a mobile subscriber center (MSC), a radio network controller (RNC), a microprocessor, an integrated circuit such as an application specific integrated circuit (ASIC), a programmable logic device (PLD), a processor such as general purpose processor, a digital signal processor (DSP) and/or a network processor, an interface, an input/output (I/O) device (e.g., keyboard, mouse, display, printer), a router, a hub, a gateway, a bridge, a switch, a circuit, a logic gate, a register, a semiconductor device, a chip, a transistor, or any other device, machine, tool, equipment, component, or combination thereof. The embodiments are not limited in this context.

[0036] In various embodiments, a node may comprise, or be implemented as, software, a software module, an application, a program, a subroutine, an instruction set, computing code, words, values, symbols or combination thereof. A node may be implemented according to a predefined computer language, manner or syntax, for instructing a processor to perform a certain function. Examples of a computer language may include C, C++, Java, BASIC, Perl, Matlab, Pascal, Visual BASIC, assembly language, machine code, micro-code for a network processor, and so forth. The embodiments are not limited in this context.

[0037] The nodes of the system 100 may be arranged to communicate one or more types of information, such as media information and control information. Media information generally may refer to any data representing content meant for a user, such as image information, video information, graphical information, audio information, voice information, textual information, numerical information, alphanumeric symbols, character symbols, and so forth. Control information generally may refer to any data representing commands, instructions or control words meant for an automated system. For example, control information may be used to route media information through a system, or instruct a node to process the media information in a certain manner. The media and control information may be communicated from and to a number of different devices or networks.

[0038] The system 100 may include one or more nodes (e.g., nodes 110-130) arranged to communicate information over one or more wired and/or wireless communications media. Examples of wired communications media may include a wire, cable, printed circuit board (PCB), backplane, switch fabric, semiconductor material, twisted-pair wire, coaxial cable, fiber optics, and so forth. An example of a wireless communication media may include portions of a wireless spectrum, such as the radio-frequency (RF) spectrum. In such implementations, the nodes of the system 100 may include components and interfaces suitable for communicating information signals over the designated wireless spectrum, such as one or more transmitters, receivers, transceivers, amplifiers, filters, control logic, antennas and so forth.

[0039] The communications media may be connected to a node using an input/output (I/O) adapter. The I/O adapter may be arranged to operate with any suitable technique for controlling information signals between nodes using a desired set of communications protocols, services or operating procedures. The I/O adapter may also include the appropriate physical connectors to connect the I/O adapter with a corresponding communications medium. Examples of an I/O

adapter may include a network interface, a network interface card (NIC), a line card, a disc controller, video controller, audio controller, and so forth.

[0040] In various embodiments, the communications system **100** may comprise or form part of a network, such as a WiMAX network, a broadband wireless access (BWA) network, a WLAN, a WMAN, a wireless wide area network (WWAN), a wireless personal area network (WPAN), a Code Division Multiple Access (CDMA) network, a Wide-band CDMA (WCDMA) network, a Time Division Synchronous CDMA (TD-SCDMA) network, a Time Division Multiple Access (TDMA) network, an Extended-TDMA (E-TDMA) network, a Global System for Mobile Communications (GSM) network, an Orthogonal Frequency Division Multiplexing (OFDM) network, an Orthogonal Frequency Division Multiple Access (OFDMA) network, a North American Digital Cellular (NADC) network, a Universal Mobile Telephone System (UMTS) network, a third generation (3G) network, a fourth generation (4G) network, a local area network (LAN), a wide area network (WAN), a metropolitan area network (MAN), the Internet, the World Wide Web, a cellular network, a radio network, a satellite network, and/or any other communications network configured to carry data. The embodiments are not limited in this context.

[0041] In an embodiment, system **100** may include node **130**. Node **130** may comprise, for example, a mobile device or a fixed device having wireless capabilities. A mobile device may comprise a generalized equipment set providing connectivity to other wireless devices, such as other mobile devices or fixed devices. Examples for node **130** may include a computer, server, workstation, notebook computer, handheld computer, telephone, cellular telephone, personal digital assistant (PDA), combination cellular telephone and PDA, and so forth.

[0042] Nodes **110-130** may have one or more wireless transceivers and wireless antennas. In one embodiment, for example, nodes **110-130** may each have multiple transceivers and multiple antennas to communicate information signals over wireless shared media **160**. For example, a channel **162**, link, or connection may be formed using one or more frequency bands of wireless shared medium **160** for transmitting and receiving packets **164**. The embodiments are not limited in this context.

[0043] FIG. 2 more specifically illustrates node **110** of the communications system **100**. As shown in FIG. 2, the node may comprise multiple elements such as component **140**, module **150**, processor **210**, memory **260**, switch **220**, transmitter **230**, receiver **240**, and antenna **250** to communicate packets **164** over wireless shared media **160**. Transmitter **230** and receiver **240** may also be collectively referred to as a transceiver. Some elements may be implemented using, for example, one or more circuits, components, registers, processors, software subroutines, or any combination thereof. Although FIG. 2 shows a limited number of elements, it can be appreciated that additional or fewer elements may be used in node **110** as desired for a given implementation. The embodiments are not limited in this context.

[0044] As noted, in an embodiment, node **110** may include a processor **210**. Processor **210** may be connected to switch **220** and/or the transceiver (i.e., transmitter **230** and receiver **240**). Processor **210** may be implemented using any processor or logic device, such as a complex instruction set computer (CISC) microprocessor, a reduced instruction set computing (RISC) microprocessor, a very long instruction word (VLIW)

microprocessor, a processor implementing a combination of instruction sets, or other processor device. In an embodiment, for example, processor **210** may be implemented as a general purpose processor. Processor **210** may also be implemented as a dedicated processor, such as a controller, microcontroller, embedded processor, a digital signal processor (DSP), a network processor, a media processor, an input/output (I/O) processor, a media access control (MAC) processor, a radio baseband processor, a field programmable gate array (FPGA), a programmable logic device (PLD), and so forth. The embodiments are not limited in this context.

[0045] In one embodiment, processor **210** may include, or have access to, memory **260**. Memory **260** may comprise any machine-readable media. Memory **260** may be implemented using any machine-readable or computer-readable media capable of storing data, including both volatile and non-volatile memory. For example, memory **260** may include read-only memory (ROM), random-access memory (RAM), dynamic RAM (DRAM), Double-Data-Rate DRAM (DDR), synchronous DRAM (SDRAM), static RAM (SRAM), programmable ROM (PROM), erasable programmable ROM (EPROM), electrically erasable programmable ROM (EEPROM), flash memory, polymer memory such as ferroelectric polymer memory, ovonic memory, phase change or ferroelectric memory, silicon-oxide-nitride-oxide-silicon (SONOS) memory, magnetic or optical cards, or any other type of media suitable for storing information. It is worthy to note that some portion or all of memory **260** may be included on the same integrated circuit as processor **210**, or alternatively some portion or all of memory **260** may be disposed on an integrated circuit or other medium, for example a hard disk drive, that is external to the integrated circuit of processor **210**. The embodiments are not limited in this context.

[0046] When implemented in a node of system **100**, node **110** may be arranged to communicate information over wired or wireless communications media between the various nodes, such as nodes **120** and **130**. The information may be communicated using in the form of packets **164** over wireless shared media **160**, with each packet **164** comprising media information and/or control information. A packet **164** in this context may refer to any discrete set of information, including a unit, frame, cell, segment, fragment, and so forth. The packet may be of any size suitable for a given implementation. The embodiments are not limited in this context.

[0047] In an embodiment for which system **100** is a system to track and compare athletic performance, module **150** may include an athletic performance module. The athletic performance module of an embodiment may communicate with one or more athletic performance sensors to collect information representing the athletic performance of one or more athletes. The athletic performance module **150** may thereafter convert the athletic performance of the athletes to a common unit so that the athlete or athletes may be compared to each other, to personal goals, or to athletic performance benchmarks. In an embodiment, the common unit may be miles run. Alternatively or additionally, the common unit such as miles run may be considered a credit. Thus, the equivalent miles run value, may be considered a credit, e.g., a certain amount of cardiovascular exercise (measured in some unit) may be considered equal to a mile run (i.e. a cardiovascular mile). Credits, as used herein, may generally refer to a unit used by an athletic performance monitoring system to track the activity of users. For example, an athletic monitoring system may include an on-line interactive site where users may track their athletic

performance, achievements, goals, rewards, challenges, competitions, events and the like based on the amount of credits accumulated. Thus, the credits can be used to compare athletic performance among running activity and other cardiovascular training. The credits may also be used to compare such activities among a plurality of users. Credits, in one or more embodiments, may be used in such an athletic monitoring system to purchase or otherwise acquire rewards or unlock special features. Such rewards may include various wearable and non-wearable items including t-shirts, sweat-shirts, wristbands, hats, headbands, shoes, music players, gift cards and the like. Rewards may also include virtual items for virtual entities such as avatars that represent the athlete in athletic monitoring system.

[0048] To track athletic performance, an active person or athlete may wear one or more athletic performance sensors. For example, an active person or athlete may wear a pedometer, accelerometer including any shoe mounted accelerometer assembly, calorie monitor, heart rate monitor, GPS device or the like. In an embodiment, the athletic performance sensor may be included in an article of clothing, such as a pedometer or accelerometer included in a shoe. Further, one or more of the athletic performance sensors may communicate with a digital music player, or other similar device, or other data transfer type device, to store data representing the athletic performance of the active person or athlete for transmission or relay of the data to the athletic performance module. Alternatively, the athletic performance sensor may communicate athletic performance data directly or substantially directly to the athletic performance module. Further still, the athletic performance sensor may display an indication of the athletic performance of an active person or athlete, after which the active person or athlete may manually communicate data representing their athletic performance to the athletic performance module.

[0049] The athletic performance sensor of an embodiment may alternatively or additionally be coupled to an athletic performance device or machine. For example, one or more athletic performance sensors may couple to a stair stepping machine, elliptical machine, treadmill, resistance training (i.e., weight) machine, ergometer, stationary bicycle, climbing machine, or any other athletic performance device or machine. The athletic performance sensor may detect, for example, number of repetitions of a particular weight lifted, elevation climbed, miles rowed, and the like depending on the nature of the athletic performance device or machine. In an embodiment, the athletic performance sensor coupled to the athletic performance device or machine may further couple to a digital music player or the like provided by the active person or athlete. The digital music player or the like may thereafter store data representing the athletic performance of the active person or athlete for transmission or relay of the data to the athletic performance module. Alternatively, the athletic performance sensor coupled to the athletic performance device or machine may communicate athletic performance data directly or substantially directly to the athletic performance module. Further still, the athletic performance sensor coupled to the athletic performance device or machine may display an indication of the athletic performance of an active person or athlete, after which the active person or athlete may manually communicate data representing their athletic performance to the athletic performance module.

[0050] The athletic performance module may accordingly receive data representing the athletic performance of one or

more active people or athletes. The data may represent, however, athletic performance of differing types. For example, a runner may wear a shoe that includes an accelerometer or pedometer to track distance run, pace, average speed, and the like. The accelerometer or pedometer may further communicate the athletic performance data to a digital musical device for storage and transmission/relay to the athletic performance module. A second active person or athlete may be resistance training (i.e., lifting weights) on any number of resistance training machines including one or more athletic performance sensors coupled thereto. The athletic performance sensor(s) may detect total weight lifted (i.e., weight lifted multiplied by the number of repetitions), maximum weight lifted, lifting rate/pace, delay between sets, and the like. Similarly, the resistance training machines may further communicate the athletic performance data to a digital musical device for storage and transmission/relay to the athletic performance module. The athletic performance module may thereby receive data representing miles run by the runner and weight lifted by the resistance trainer. As explained in greater detail below, the system may also include receiving athletic performance data associated with a second active person performing cardiovascular exercise wherein the data is from a cardio-type machine such as an elliptical machine, rowing machine, stair climber or stationary bicycle.

[0051] In an embodiment, the athletic performance module thereafter converts the received athletic performance data to a common unit. In an embodiment, the athletic performance module converts the received athletic data to a distance run, and more particularly to miles run (it is understood this unit could also be kilometers run). In the above example, the runner's data already represents miles run. However, the resistance trainer's data represents total weight lifted, maximum weight lifted, lifting rate/pace, delay between sets, and the like. The athletic performance module may convert the resistance trainer's data to miles run in a variety of manners. For example, the athletic performance module may include a database, look-up table, or the like that stores predetermined conversion factors between, for example, total weight lifted and miles run. The database or look-up table may further contemplate additional metrics such as maximum weight lifted, etc., as introduced above. Alternatively, the athletic performance module may apply the data to one or more algorithms to calculate the miles run equivalent.

[0052] The athletic performance module may further determine the calorie usage or burn for each athletic performance such as for any cardiovascular exercise data performed on any of the various cardiovascular exercise machines described herein. Once the calorie usage or burn has been determined, a database, look-up table, or algorithm may convert calorie usage or burn to miles run based on one or more physical characteristics (e.g., age, weight, gender, heart rate, and the like) of the athlete. Alternatively, instead of determining the calorie usage or burn for an athletic performance, the athletic performance module (in an embodiment via transmission or relay from a digital music device) may receive the calorie usage or burn from the athletic performance device or machine for subsequent conversion to miles run. For example, an ergometer or rowing machine may track the number of miles rowed by an athlete. However, it may also track the calorie usage or burn corresponding to the miles rowed. Instead of converting the miles rowed to miles run, the athletic performance module may convert calorie usage or burn to miles run. Accordingly, the operation of the athletic

performance module may be simplified for those athletic performance devices or machines that already calculate calorie usage or burn. Though described with reference to one or few athletic performance metrics, it is to be understood that the athletic performance module may calculate, determine, or otherwise generate the equivalent miles run based on any number of athletic performance metrics.

[0053] Once the athletic performance of one or more active people and/or athletes has been converted to a common unit, for example miles run, they may compare their athletic performance with each other, with personal goals, or against athletic performance benchmarks. For example, an active person or athlete may establish a personal goal of running 100 miles, but may wish to achieve the equivalent of running 100 miles by performing a variety of athletic activities. Similarly, an athletic benchmark may suggest running 25 miles per week. An active person or athlete may reach the benchmark by any form of athletic activity. Finally, once their athletic performance or activities have been converted to a common unit, in an embodiment miles run, multiple active people and athletes may participate in competitions, races, or other events. Such competitions, races, or other events are described generally in U.S. patent application Ser. No. 12/324,140, entitled "INTERACTIVE AVATAR FOR SOCIAL NETWORK SERVICES," and filed Nov. 26, 2008, the content of which is incorporated herein by reference in its entirety.

[0054] Using a common unit to track and measure athletic performance, participation in challenges and competitions may be open to a variety of different athletic machines or equipment. Challenges and competitions are generally described in U.S. patent application Ser. No. 12/031,380, entitled "COLLECTION AND DISPLAY OF ATHLETIC INFORMATION," filed Feb. 14, 2008, the content of which is incorporated herein by reference in its entirety. In one example, a user may issue a challenge to other users to accumulate 200 credits or miles run (i.e., the common unit) by a certain date and time. Because the challenge uses a common unit, participants of the challenge may choose an activity or piece of equipment that they prefer. Accordingly, a first participant may weightlift to reach the 200 credit or miles run goal while a second participant may use a rowing machine to meet the challenge. An additional participant may choose to run wherein no conversion is performed for this participant. Specifically, the activity performed (e.g., rowing motion or number of lifts of a barbell) may be converted into the common unit to determine whether the participants have met and/or won the challenge. Alternatively, a participant may choose to engage in multiple types of activity to reach the specified goal.

[0055] In one embodiment, a challenge may be created for multiple activities or devices. That is, a challenge creator may specify that a participant or team of participants must perform multiple activities. The amount of each activity that must be performed to complete the challenge may be specified in the common unit so that challenge data can be more easily compared and evaluated. The required amount of each activity may be specified as an absolute amount, a ratio (e.g., 10% of activity 1, 25% of activity 2 and 65% of activity 3) or the like. In another embodiment, the challenge may require a number of different activities without specifying the exact type of activity or equipment that must be performed or used, respectively. In such instances, common units such as credits or miles run may be used to facilitate the determination of

whether a challenge was met by a participant or team of participants since the types of activities performed by participants may be unpredictable. In yet another embodiment, a challenge may require an amount of activity at a certain location regardless of equipment used or activity performed. Thus, a common unit may be used to determine whether an amount of an activity performed meets the challenge goals or requirements. FIG. 3 illustrates a system in which an athlete **301** uses multiple devices **305** to reach a specified performance goal. In particular, the amount of activity performed at each of devices **305** may be converted into a common unit such as miles run and added to a progress tracker **307**. Progress tracker **307** may be divided into multiple sections **309** corresponding to an amount of activity required for each of multiple devices **305**. For example, athletes may be required to perform activity on an elliptical **305a** equal to 200 credits or miles run, activity on a rowing machine **305b** equal to 150 credits or miles run and weightlifting activity **305c** equal to 250 credits or miles run. Each of sections **309** may be filled according to an amount of progress made for the corresponding activity.

[0056] As discussed above, the system provides for converting various athletic performance metrics/types to a standard unit of measurement. In an exemplary embodiment, the standard unit of measure is a distance run, and most preferably is miles run. An athletic performance system may determine an amount of common units associated with an athlete's activity by converting a measured unit or attribute (e.g., calories burned) using a conversion factor. In one exemplary embodiment, the conversion factor is represented by 100 calories burned being equal to 1 mile run, or a 1 mile run credit. Accordingly, if an athlete burns 400 calories during a weightlifting session or cardio session on an elliptical machine, an athletic performance monitoring system may convert the calories burned to 4 credits or 4 miles run to provide a basis of comparison. Similarly, if an athlete burns 800 calories on a rowing machine, the 800 calories may be converted into 8 credits, miles run or other common unit (i.e., $800 \text{ calories burned} / 100 = 8 \text{ credits or 8 miles run}$). It is further understood that an exemplary conversion factor may have a metric component wherein for every 60 calories burned, 1 kilometer run credit is provided.

[0057] According to an additional or alternative aspect, the conversion factor may vary based on attributes of the athlete and/or the activity performed. For example, a heavier athlete may burn calories more easily than a lighter individual. Accordingly, the calories burned by the heavier athlete may be converted into a common unit using a larger conversion factor (e.g., $125 \text{ calories burned} = 1 \text{ mile run}$ rather than 100 calories burned) than the lighter individual. Alternatively or additionally, the conversion factor may also vary based on gender, age, device used, activity performed, heart rate and the like. According to another aspect, a user may specify his or her conversion factor to make challenges, goals and/or achievements more difficult or easier. A conversion factor may be calculated in a variety of ways. For example, the conversion factor may be determined based on the average calories burned in running a mile for a test group of individuals. Instead of modifying the conversion factor, the number of calories burned may be determined based on a case-by-case basis so that the same conversion factor may be used for all athletes. For example, height, weight, gender, age or heart rate may be taken into account when measuring a number of calories burned by an athlete instead of during the conversion

from calories burned to miles run. Heart rate information may include resting heart rate or an active, in-workout heart rate. Additionally, data such as average calories burned during actual runs can also be considered when deciding on a conversion factor.

[0058] In at least one embodiment, miles run or some other common unit may be converted to an amount of calories burned using the conversion factor. Thus, if an athlete has run 5 miles on a treadmill, the athletic performance monitoring system may convert the 5 miles to a number of calories burned based on the conversion factor described herein. Such conversions may be used if the activities performed by one or more athletes are not measured in calories burned and an athlete wishes to know an approximate number of calories burned in his or her performance of a certain activity. Alternatively or additionally, other conversion factors may be used to convert other types of measurements. For example, a number of repetitions of lifting weights may be converted into a number of calories burned or another common unit using a conversion factor. Similarly, an amount of time spent doing step aerobics may be converted into a number of calories burned, activity credits or miles run using yet another conversion factor.

[0059] FIG. 4 illustrates a method for converting a first unit of measurement of athletic performance to a second unit of measurement. In step 400, for example, an athletic performance monitoring system may determine a type of activity being performed by the athlete. The types of activity may include a type of equipment, a general category of activity (e.g., aerobic vs. anaerobic) and the like. In step 405, the system may obtain activity data from one or more measurement devices. The measurement devices may include sensors such as pedometers, accelerometers, heart rate monitors, distance sensors and the like. In step 410, the system may determine a conversion factor to use based on the type of activity performed. For example, if the type of activity performed corresponds to weightlifting, a conversion factor that translates a number of repetitions to the common unit may be used while a conversion factor that translates a number of calories burned to the common unit may be used for rowing machine activity. In step 415, the system may determine a number of common units to award the athlete for the activity performed based on the conversion factor and the activity data received. Optionally, the number of common units to award may be adjusted by a modification factor in step 420. The modification factor may be used to adjust the number of common units to be awarded based on attributes such as gender, age, heart rate, weight and the like. Accordingly, the modification factor may provide for more personalized analyses of a user's athletic performance. Alternatively, the modification factor may be combined with the conversion factor such that any necessary modification is taken into account by the conversion factor.

[0060] FIGS. 5-27 describe an exemplary embodiment of the invention wherein a user's activity on gym equipment is converted to a common unit.

[0061] As users or athletes such as runners utilize the systems and/or embodiments of the present invention to collect information, a user interface of an embodiment may provide additional features and functionality for athletes to use and share information relating to their physical activity. In one example, athletic information is displayed on a user interface 500 and/or user interface 1200 as described in greater detail below.

[0062] For example, a user or athlete may wish to perform their walking, jogging, running, or other athletic activity with the help of an athletic performance device or machine (i.e., athletic equipment). For example, the user or athlete may wish to use a stair stepping machine, elliptical machine, treadmill, resistance training (i.e., weight) machine, ergometer, stationary bicycle, climbing machine, or any other athletic performance device or machine and/or combinations thereof. As described above with reference to FIGS. 1 and 2, the user or athlete may provide a digital music player 203 that may, among other features, monitor and store athletic performance data. In an alternate embodiment, the user or athlete may provide another storage device, such as flash drive or other similar Universal Serial Bus (USB) storage device, compact flash, memory stick, secure digital card, or any other portable storage device. As will be described in more detail below, the digital music player 203 or other storage device may couple to the athletic performance device or machine, for example via a wired or wireless connection, to interact with the athletic performance device or machine. Additionally, the digital music player 203 or other storage device may couple to the athletic performance device or machine via a combination of wired and wireless connections. For example, the digital music player 203 or other storage device may couple to the athletic performance device or machine via a wired connection while the user or athlete may interact with or control the digital music player 203 or other storage device with a wireless connection, for example with a remote control or other similar wireless device.

[0063] In an embodiment, the athletic performance data may be generated by one or more athletic performance sensors located on or adjacent to the user or athlete, for example on or in the user or athlete's shoe. In an alternate embodiment, athletic performance data may be generated by one or more athletic performance sensors coupled to the athletic performance device or machine. In yet another embodiment, athletic performance data may be generated by one or more athletic performance sensors located on or adjacent to the user or athlete and may be generated by one or more athletic performance sensors coupled to the athletic performance device or machine.

[0064] In an embodiment, the user or athlete may provide a digital music player 203 or other storage device that may, among other features, monitor and store current athletic performance data. The digital music player 203 or other storage device may further store and provide historical athletic performance data. The digital music player 203 or other storage device may communicate directly with the user interface 500 via wired or wireless connection. For example, the athletic performance device or machine including user interface 500 may further include an interface 540 that may be a wireless transceiver or wired connector to bi-directionally interface with the digital music player 203 or other storage device.

[0065] More specifically, a particular athletic performance device or machine may measure or sense performance data for a user or athlete interacting with the athletic performance device. For example, a stair stepping machine may communicate weight, climbing rate (e.g., vertical feet per minute), calories burned, heart rate, and the like to the digital music player 203 or other storage device coupled thereto as described above. Further, the digital music player 203 or other storage device may communicate historical athletic performance data or other stored athletic performance data to the athletic performance device or machine. In an embodiment,

the current athletic performance data, the historical or stored athletic performance data (e.g., as stored by digital music player 203 or other storage device), or a combination thereof may be displayed by user interface 500. In an embodiment, the user interface 500 may be a console or the like coupled to the athletic performance device or machine that is viewable by and accessible to the user or athlete interacting with the athletic performance device or machine. More specifically, the user interface 500 may be a console that displays the user or athlete's athletic performance substantially in real-time. Further, the user interface 500 console may display a comparison of substantially real-time athletic performance data to historical or otherwise stored athletic performance data.

[0066] In an embodiment, the user interface 500 console may include one or more portions. For example, the user interface 500 console may include a workout portion 510, a history portion 520, and a message portion 530. Further, the user interface 500 may include an interface 540 to couple to the digital music player 203 or other storage device. In an embodiment, the interface 540 may be a wired or wireless interface as introduced above. The workout portion 510 may include, for example, an input device for the user or athlete to input a workout goal or other workout parameters. For example, the input device may be a numerical pad for the user or athlete to input a workout goal or other workout parameters. The user or athlete may utilize the input device to select a quick start (e.g., a predetermined time at a predetermined intensity), or to input workout time, distance, calorie burn, or any other workout program. Further, the workout portion 510 may include a display so that the user or athlete has an indication of their progress in the quick start, time, distance, calorie burn, or any other workout program.

[0067] The history portion 520 may interact with the digital music player 203 or other storage device via interface 540 to retrieve historical data related to the user or athlete's past performance. For example, the history portion 520 may retrieve and display the user or athlete's last workout and best workout for a particular athletic performance device or machine. In particular, the history portion 520 may retrieve and display the user or athlete's last and best workout time, distance, calorie burn, distance equivalent (e.g., "cardiovascular miles" or "athletic activity credits") and floors (e.g., if the history portion is coupled to a stair stepper athletic performance device or machine). Further, the history portion may display the user or athlete's current athletic performance compared to their last workout and historical best workout so that they have an indication of their current athletic performance. In an alternate embodiment, the user interface 500 may receive at least part of the historical or otherwise stored athletic performance data associated with a user or athlete via a wired and/or wireless connection to an additional athletic performance database. For example the user interface 500 may include Internet or other web-based connectivity to bi-directionally communicate current and/or historical athletic performance data.

[0068] The distance equivalent, for example cardiovascular miles, may represent athletic performance data of differing types converted to a common unit. For example, a runner may wear a shoe that includes a sensor such as a pedometer or accelerometer to track distance run, pace, average speed, and the like. The sensor may further communicate the athletic performance data to the digital musical player 203 or other storage device for storage and transmission/relay to the user interface 500. Alternatively, the user or athlete may be resis-

tance training (i.e., lifting weights) on any number of resistance training machines including one or more athletic performance sensors coupled thereto. The athletic performance sensor(s) may detect total weight lifted (i.e., weight lifted multiplied by the number of repetitions), maximum weight lifted, lifting rate/pace, delay between sets, and the like. Similarly, the resistance training machines may further communicate the athletic performance data to the digital musical player 203 or other storage device for storage and transmission/relay to the user interface 500.

[0069] In an embodiment, the user interface 500 may thereafter convert the received athletic performance data to a common unit. In an embodiment, an athletic performance module may convert the received athletic performance data to distance (in an embodiment, miles) run. In the above example, the runner's data already represents miles run. However, the resistance trainer's data represents total weight lifted, maximum weight lifted, lifting rate/pace, delay between sets, and the like. The user interface 1700 may convert the resistance trainer's data to distance run in a variety of manners. For example, the user interface 1700 may include a database, look-up table, or the like that stores predetermined conversion factors between, for example, total weight lifted and miles run. The database or look-up table may further contemplate additional metrics such as maximum weight lifted, etc., as introduced above. Alternatively, the athletic performance module may apply the data to one or more algorithms to calculate the distance run equivalent.

[0070] The user interface 5500 may further determine the calorie usage or burn for each athletic performance. Once the calorie usage or burn has been determined, a database, look-up table, or algorithm may convert calorie usage or burn to miles run based on one or more physical characteristics (e.g., age, weight, gender, heart rate, and the like) of the user or athlete. The one or more physical characteristics may be provided, for example, by the digital music player 203, other storage device, or the user interface 500 Internet or web connectivity. Alternatively, instead of determining the calorie usage or burn for an athletic performance, the user interface (in an embodiment via transmission or relay from a digital music player 203, other storage device, or the user interface 500 Internet or web connectivity) may receive the calorie usage or burn from the athletic performance device or machine for subsequent conversion to distance run. For example, an ergometer may track the number of miles rowed by a user athlete. However, it may also track the calorie usage or burn corresponding to the miles rowed. Instead of converting the miles rowed to miles run, the user interface 500 may convert calorie usage or burn to miles run. Accordingly, the operation of user interface 500 may be simplified for those athletic performance devices or machines that already calculate calorie usage or burn. Though described with reference to one or few athletic performance metrics, it is to be understood that the user interface 500 may calculate, determine, or otherwise generate the equivalent distance run based on any number of athletic performance metrics. In an exemplary embodiment, the conversion factor described above (100 calories burned=1 miles run) could be utilized here.

[0071] Once the athletic performance of the user or athlete has been converted to a common unit, for example miles run, they may compare their athletic performance with personal goals, against athletic performance benchmarks, and/or against historical athletic performance. For example, a user or athlete may establish a personal goal of running 100 miles,

but may wish to achieve the equivalent of running 100 miles by performing a variety of athletic activities including activities involving one or more athletic performance devices or machines. Similarly, an athletic benchmark or milestone may suggest running 25 miles per week. A user or athlete may reach the benchmark or milestone by any form of athletic activity. Finally, once their athletic performance or activities have been converted to a common unit, in an embodiment miles run, multiple active people and athletes may participate in competitions, races, or other events. Such competitions, races, or other events are described herein and generally by U.S. patent application Ser. No. 12/031,380 filed Feb. 14, 2008, and incorporated herein in its entirety.

[0072] A message portion 530 may display messages for the user or athlete. For example, the message portion 530 may remind the user or athlete to synchronize their digital music player 203 or other storage device with the user interface 500 or 2300 to transfer athletic performance data. Further, the message portion may provide an indication as to how a current workout or athletic performance data compares to the best workout or athletic performance data for the user or athlete. If the user or athlete is participating in a challenge, competition, or the like, the message portion 530 may provide an indication as to the user or athlete's progress or comparison to the challenge or competition leader. Additionally, the message portion 530 may provide congratulatory remarks or other feedback should the user or athlete achieve a personal goal, benchmark, or milestone.

[0073] As further shown in FIGS. 6-9, the USB type device 602 generally includes a housing 606 and a controller 608 that is contained by the housing 606. General components and functional capabilities of the controller 608 regarding athletic functionality are similar to the digital music player 203 or other storage device described above. The housing 606 includes a connector 610 that is generally a standard USB connector having leads 612 or contacts embedded therein. As explained in greater detail below, the connector 610 is adapted to connect to a USB hub of a computer (FIG. 10) or a USB hub or other interface located on the athletic performance device or machine (shown schematically on the console shown in FIG. 5). The housing 606 has a first pushbutton 614 that will cooperate with a first input of the controller 608 for controlling the wearable device 602 as needed. The housing 606 also has a second pushbutton 616 that cooperates with a second input of the controller 608 for controlling the wearable device 602 as needed. The front side of the housing 606 accommodates a display 618 of the controller 608. As further shown in FIGS. 7 and 9, the back side of the housing 606 has a protrusion 620. The protrusion 620 has a generally circular cross-section and an enlarged rounded head. The protrusion 620 is adapted to be inserted into a receiver or aperture in the carrier 604.

[0074] As further shown in FIG. 9, the components of the controller 608 are contained within and supported by the housing 606. The controller 608 includes various electrical components allowing the controller 608 and device 602 to act as an interface device wherein the device 602 can communicate with, for example, a shoe-based sensor, record and store data relating to athletic performance, other time information, as well as upload performance data to a remote location or website as described in greater detail below. The controller 608 can also interact with an athletic performance device or machine for data recording as described above.

[0075] As shown in FIG. 6, the carrier 604 is generally in the form of a wristband having a central portion between a first end and a second end. The wristband 604 may include a first member and second member generally molded or connected together. The wristband is flexible to fit around a user's wrist. The wristband 604 has receiving structures for connection to the device 602. The carrier 604 includes a protective sleeve 622 proximate the central portion for receiving the connector 610. The protective sleeve 622 has a generally contoured surface. The sleeve 622 may have internal structure for assisting in securing the connector 610. Also at the central portion, the carrier 604 has an aperture 624 (FIG. 9) dimensioned to receive the protrusion 620 of the wearable device 602. Thus, when the wearable device 602 is connected to the wristband 604, the connector 610 is secured within the protective sleeve 622 and the protrusion 620 is received by the aperture 624.

[0076] As discussed, in one configuration, the wearable device assembly 600 is operably connected to a sensor such as mounted in a shoe. Similar to the digital music player 203 or other storage device, the wearable device 602 receives data from the sensor associated with the athletic performance of a user. It is understood that the user may wear the device on the wrist while performing an athletic activity. The user may then remove the wearable device 602 from the wristband 604 and plug the device 602 into a personal computer such as shown in FIG. 10, wherein collected data can be uploaded to a remote location such as a website dedicated to displaying the athletic performance of users.

[0077] In another configuration, the wearable device 602 can be used in conjunction with athletic performance devices or machines, for example gym equipment. For example, gym equipment such as treadmills, spinning machines, elliptical machines, stair machines, bicycles, other weight equipment and the like may have USB ports for added functionality. A user may remove the wearable device 602 from the wristband 604 and insert the device 602 into the gym equipment, such as in a USB port or other interface located on the stepper console shown in FIG. 5. The user performs athletic activity wherein data associated with the activity is received by the USB device 602. The type of data capable of being received by the USB device is generally similar to the data reception described above with the operable connection between the digital music player 203 or other storage device and the gym equipment. Once the athletic activity is complete, the user removes the USB device 602 from the gym equipment and again mounts the device on the wristband 604 or some other carrier as desired. The user can then insert the USB device 602 into a personal computer wherein the data from the athletic activity associated with the gym equipment can be uploaded to a remote location such as the above described website. Additional wired or wireless communication capabilities could also be incorporated into the device 602. The cardiovascular exercise data can then be transferred from the cardiovascular exercise equipment to the device 602. The device 602 can be plugged into a computer wherein the data can be transferred to an interface employing the conversion factor described herein for providing an equivalent miles run based on the cardiovascular exercise data. This data can then be displayed by an interface 1200 as described below.

[0078] Though described with reference to bi-directionally communicating athletic performance data, in an additional embodiment, the digital music player 203, other storage device, and/or user interface 500 Internet or web-based con-

nectivity may control one or more parameters of the athletic performance device or machine. For example, the digital music player 203, other storage device, and/or user interface 500 Internet or web-based connectivity may provide a workout level, duration, intensity, pace, incline, target heart rate, resistance, or any other parameter associated with an athletic performance device or machine. In an embodiment, the one or more parameters may reflect current and/or historical athletic performance data. Alternately or additionally, the one or more parameters may reflect an athletic performance training program or plan. In one or more configurations, the digital music player 203 or USB device 602 may be configured to convert athletic performance data from one unit to another. Accordingly, athletic performance data may be transmitted to an athletic performance monitoring system in a converted form.

[0079] FIGS. 11-27 illustrate the collection and display of a user or athlete's performance data by user interface 1200 as collected from the digital music player 203 or other storage device. In an embodiment, athletic performance data is collected, for example and as illustrated by FIG. 11, when the digital music player 203 is synchronized. In an alternate embodiment, at least the performance data associated with the athletic performance device or machine (i.e., gym equipment) may be communicated and collected via a network, Internet, or other wired or wireless connection. For example, the athletic performance device or machine may couple to a network and or the Internet via a wired or wireless connection to transmit and receive athletic performance data associated with the user or athlete. Once the user or athlete's data has been collected, the user or athlete may view and interact with the athletic performance data as illustrated by user interface 1200 of FIG. 12. In one or more configurations, data from a device may be transmitted to a performance monitoring system through an intermediary. For example, multiple athletic devices may be connected to one another through a local area network, but only one of the machines may be connected to a wide area network such as the Internet. Accordingly, data from the multiple devices may be transmitted to a remote monitoring system using the machine connected to the wide area network as an intermediary.

[0080] For example, FIGS. 12 and 13 illustrate that user interface 1200 may display details associated with a workout or other athletic performance. As illustrated, the details correspond to a workout on an elliptical machine. FIG. 13 in particular illustrates that the thirty minute elliptical workout has been converted to an equivalent miles run. Once a workout has been converted to its equivalent in miles run (or other common unit), it may be displayed alongside actual miles run as part of, for example, an interactive athletic training tool and/or interactive athletic training log. Such an interactive athletic training tool and/or interactive athletic training log is described by U.S. Provisional Patent Application No. 61/032,018, filed Feb. 27, 2008, and incorporated herein in its entirety.

[0081] More specifically, FIG. 14 illustrates a range of dates for which the user or athlete has completed a run or other athletic performance. For dates on which the user or athlete completed their workout at least in part on one or more athletic performance devices or machines, the athletic performance data is illustrated with, for example, a different legend than actual running athletic performance data. For example, dates such as May 15 are displayed with a heart icon or other similar identification to illustrate that the user interface 1200 is displaying an equivalent distance (i.e., "cardiovascular

miles") for a particular workout or athletic performance. FIG. 15 illustrates that the user interface 1200 may display details of a workout, for example type of athletic performance device or machine, equivalent distance, duration, and calorie usage or burn.

[0082] FIG. 16 illustrates that the user or athlete may sort their workouts or athletic performance based on whether the workouts or athletic performance represent actual distance run or equivalent cardiovascular distance. For example, the user or athlete may select that user interface 1200 display all runs and cardiovascular distance, all runs only, or all cardiovascular distance only. FIG. 17 illustrates user interface 1200 displaying only equivalent cardiovascular distance or athletic performance. FIG. 18 illustrates user interface 1200 displaying only actual distance run.

[0083] FIG. 19 illustrates that the user or athlete may utilize user interface 1200 to establish goals, benchmarks, milestones, and/or athletic training programs. For example, FIG. 20 illustrates that the user or athlete has established a goal of covering fifty miles in twelve weeks. Further, FIG. 20 illustrates the user or athlete's progress. In an embodiment, the user or athlete may achieve their goal by running, performing other athletic activities, or a combination thereof. Accordingly, the user or athlete's progress is displayed as a sum of any actual run distance and any equivalent cardiovascular distance (or other common unit such as an athletic activity credit). The user or athlete may therefore utilize various athletic performance activities that might not be measured in the same way (i.e., in the same units) to achieve their goal.

[0084] FIG. 21 illustrates that the user or athlete may utilize user interface 1200 to participate in competitions, challenges, races, or other events as described herein and generally by U.S. patent application Ser. No. 12/031,380 filed Feb. 14, 2008. In particular, the user or athlete may participate in the competition, challenge, race, or other event by completing runs, other athletic performance activities, or a combination thereof. Accordingly, their progress within the competition, challenge, race, or other event is determined by a sum of any actual runs and any other athletic performance as measured by equivalent cardiovascular distance or another common unit. Further, the competition, challenge, race, or other event may specify a run portion and an athletic performance activity portion. For example, a fifty mile challenge may include twenty-five miles of actual running distance and twenty-five miles of equivalent cardiovascular distance.

[0085] FIG. 23 illustrates that a user or athlete may select one or more challenges in which to participate. In an embodiment, the challenges are sorted by total distance (i.e., including actual run distance and equivalent cardiovascular distance). FIGS. 24 and 25 illustrate that the user interface 1200 may display the progress of one or more users or athletes participating in the competition, challenge, race, or other event. The progress of each user or athlete may be illustrated as a combination of actual run distance and equivalent cardiovascular miles. For example, the progress of each user or athlete may be illustrated by a bar chart for which the actual run distance and equivalent cardiovascular distance have different colors, color schemes, patterns, or the like to distinguish which portion of the total distance covered represents each. Alternatively, the competition, challenge, race, or other event may include individual requirements for actual run distance and equivalent cardiovascular distance for which a user or athlete's progress in each may be displayed separately. Further, the user or athlete's run performance may be compared to

their other athletic performance, for example as measured by equivalent cardiovascular distance.

[0086] FIGS. 26 and 27 illustrate that the user interface 1200 may also serve as an athletic training tool and/or athletic training log such as described by U.S. Provisional Patent Application 61/032,018, filed Feb. 27, 2008. For example, a user or athlete may select a training program to train for walk-to-run, five kilometers, ten kilometers, a half marathon, and/or a marathon. Further, the user or athlete may train for a duathlon. More specifically, and as illustrated by FIG. 27, a duathlon may include actual run distance and equivalent cardiovascular distance components. Alternatively, a user or athlete may complete the training program with any combination of actual distance run or equivalent cardiovascular distance based on other athletic performance activity.

[0087] Numerous specific details have been set forth herein to provide a thorough understanding of the embodiments. It will be understood by those skilled in the art, however, that the embodiments may be practiced without these specific details. In other instances, well-known operations and components have not been described in detail so as not to obscure the embodiments. It can be appreciated that the specific structural and functional details disclosed herein may be representative and do not necessarily limit the scope of the embodiments.

[0088] It is also worthy to note that any reference to “one embodiment” or “an embodiment” means that a particular feature, structure, or characteristic described in connection with the embodiment is included in at least one embodiment. The appearances of the phrase “in one embodiment” in various places in the specification are not necessarily all referring to the same embodiment.

[0089] Some embodiments may be implemented using an architecture that may vary in accordance with any number of factors, such as desired computational rate, power levels, heat tolerances, processing cycle budget, input data rates, output data rates, memory resources, data bus speeds and other performance constraints. For example, an embodiment may be implemented using software executed by a general-purpose or special-purpose processor. In another example, an embodiment may be implemented as dedicated hardware, such as a circuit, an application specific integrated circuit (ASIC), Programmable Logic Device (PLD) or digital signal processor (DSP), and so forth. In yet another example, an embodiment may be implemented by any combination of programmed general-purpose computer components and custom hardware components. The embodiments are not limited in this context.

[0090] Some embodiments may be described using the expression “coupled” and “connected” along with their derivatives. It should be understood that these terms are not intended as synonyms for each other. For example, some embodiments may be described using the term “connected” to indicate that two or more elements are in direct physical or electrical contact with each other. In another example, some embodiments may be described using the term “coupled” to indicate that two or more elements are in direct physical or electrical contact. The term “coupled,” however, also may mean that two or more elements are not in direct contact with each other, but yet still co-operate or interact with each other. The embodiments are not limited in this context.

[0091] Some embodiments may be implemented, for example, using a machine-readable medium or article which may store an instruction or a set of instructions that, if executed by a machine, may cause the machine to perform a method and/or operations in accordance with the embodi-

ments. Such a machine may include, for example, any suitable processing platform, computing platform, computing device, processing device, computing system, processing system, computer, processor, or the like, and may be implemented using any suitable combination of hardware and/or software. The machine-readable medium or article may include, for example, any suitable type of memory unit, such as the examples given with reference to FIG. 2. For example, the memory unit may include any memory device, memory article, memory medium, storage device, storage article, storage medium and/or storage unit, memory, removable or non-removable media, erasable or non-erasable media, writeable or re-writable media, digital or analog media, hard disk, floppy disk, Compact Disk Read Only Memory (CD-ROM), Compact Disk Recordable (CD-R), Compact Disk Rewritable (CD-RW), optical disk, magnetic media, various types of Digital Versatile Disk (DVD), a tape, a cassette, or the like. The instructions may include any suitable type of code, such as source code, compiled code, interpreted code, executable code, static code, dynamic code, and the like. The instructions may be implemented using any suitable high-level, low-level, object-oriented, visual, compiled and/or interpreted programming language, such as C, C++, Java, BASIC, Perl, Matlab, Pascal, Visual BASIC, assembly language, machine code, and so forth. The embodiments are not limited in this context.

[0092] While certain features of the embodiments have been illustrated as described herein, many modifications, substitutions, changes and equivalents will now occur to those skilled in the art. It is therefore to be understood that the appended claims are intended to cover all such modifications and changes as fall within the true spirit of the embodiments.

What is claimed is:

1. A method comprising:

receiving first athletic performance data in a first measurement unit from a first athletic device;

receiving second athletic performance data in a second measurement unit from a second athletic device; and

converting each of the first and second athletic performance data to a third unit.

2. The method of claim 1, further comprising:

determining whether an athletic goal has been achieved based on the first and second athletic performance data, wherein the athletic goal is specified in the third unit.

3. The method of claim 1, wherein the third unit is different from the first and second units.

4. The method of claim 1, wherein the first unit is calories burned and the third unit is miles run.

5. The method of claim 1, wherein converting the first and second athletic performance data to a third unit includes:

determining a first conversion factor based on a first type of athletic activity associated with the first athletic performance data; and

applying the first conversion factor to the first athletic performance data.

6. The method of claim 5, wherein the first conversion factor is determined further based on an attribute of an individual performing the first type of athletic activity.

7. The method of claim 6, wherein the attribute includes a resting heart rate.

8. The method of claim 6, wherein the attribute includes weight.

9. The method of claim 5, further comprising:
determining a second conversion factor based on a second type of athletic activity associated with the second athletic performance data; and
applying the second conversion factor to the second athletic performance data.
10. The method of claim 5, wherein the first type of athletic activity includes elliptical machine activity.
11. The method of claim 5, wherein the first type of athletic activity includes biking.
12. The method of claim 1, wherein the first athletic performance data corresponds to a first participant of a competition and the second athletic performance data corresponds to a second participant of the competition and the method further comprising comparing the first and second athletic performance data in the third unit to determine a winner of the competition.
13. The method of claim 1, wherein the first and second athletic performance data are received at an athletic performance monitoring system from one or more remote athletic devices.
14. The method of claim 13, wherein the one or more remote athletic devices includes a heart rate monitor.
15. The method of claim 13, wherein the one or more remote athletic devices includes a pedometer.
16. The method of claim 13, wherein the one or more remote athletic devices includes an ergometer.
17. The method of claim 16, wherein the first athletic performance data is received at the athletic performance monitoring system is received from the one or more remote athletic devices through an intermediary athletic device.
18. A method comprising:
receiving first athletic performance data in a first unit;
receiving second athletic performance data in a second unit different from the first unit; and
converting each of the first and second athletic performance data to a third unit different from the first and second units, wherein the third unit corresponds to a type of funds useable at an athletic performance monitoring system to acquire one or more items.
19. The method of claim 18, wherein the first unit corresponds to biking activity and wherein the second unit corresponds to miles biked.
20. The method of claim 18, wherein the one or more items include athletic equipment.
21. The method of claim 18, wherein the one or more items include apparel.
22. The method of claim 18, wherein the one or more items include a virtual item.
23. The method of claim 18, further comprising:
determining whether an athletic goal has been achieved based on the first and second athletic performance data, wherein the athletic goal is specified in the third unit.
24. The method of claim 23, wherein the first athletic performance data corresponds to activity performed by a first user and the second athletic performance data corresponds to activity performed by a second user.
25. The method of claim 24, wherein the first athletic performance data corresponds to a first type of athletic activity and the second athletic performance data corresponds to a second type of athletic activity different from the first type of athletic activity.
26. A method comprising:
receiving specifications for creating an athletic challenge, wherein the specifications include a first required amount of a first athletic activity and a second required amount of a second athletic activity, wherein the first required amount and the second required amount are specified in a common unit and wherein at least one of the first athletic activity and the second athletic activity is not measured in the common unit; and
creating the athletic challenge.
27. The method of claim 26, further comprising:
receiving first athletic performance data corresponding to the first athletic activity in a first unit different from the common unit; and
converting the first athletic performance data to the common unit.
28. The method of claim 27, further comprising:
receiving second athletic performance data corresponding to the second athletic activity in a second unit different from the common unit; and
converting the second athletic performance data to the common unit.
29. The method of claim 27, wherein the common unit corresponds to funds useable to acquire items from an athletic performance monitoring system.
30. The method of claim 29, wherein the specifications are received at the athletic performance monitoring system.
31. The method of claim 27, wherein the first type of activity corresponds to elliptical machine activity and the second type of activity corresponds to rowing machine activity.
32. The method of claim 27, wherein the athletic challenge is a duathlon.
33. An apparatus comprising:
a processor; and
memory storing computer readable instructions that, when executed, cause the apparatus to:
receive first athletic performance data in a first measurement unit from a first athletic device;
receive second athletic performance data in a second measurement unit from a second athletic device; and
convert each of the first and second athletic performance data to a third unit.
34. The apparatus of claim 33, wherein the computer readable instructions, when executed, further causes the apparatus to:
determine whether an athletic goal has been achieved based on the first and second athletic performance data, wherein the athletic goal is specified in the third unit.
35. The apparatus of claim 33, wherein the third unit is different from the first and second units.
36. The apparatus of claim 33, wherein the first unit is calories burned and the third unit is miles run.
37. The apparatus of claim 33, wherein converting the first and second athletic performance data to a third unit includes:
determining a first conversion factor based on a first type of athletic activity associated with the first athletic performance data; and
applying the first conversion factor to the first athletic performance data.
38. An apparatus comprising:
a processor; and
memory storing computer readable instructions that, when executed, cause the apparatus to:

receive specifications for creating an athletic challenge, wherein the specifications include a first required amount of a first athletic activity and a second required amount of a second athletic activity, wherein the first required amount and the second required amount are specified in a common unit and wherein at least one of the first athletic activity and the second athletic activity is not measured in the common unit; and

create the athletic challenge.

39. The apparatus of claim 38, wherein the computer readable instructions, when executed, further causes the apparatus to:

receive second athletic performance data corresponding to the second athletic activity in a second unit different from the common unit; and

convert the second athletic performance data to the common unit.

40. The apparatus of claim 38, wherein the common unit corresponds to funds useable to acquire items from an athletic performance monitoring system.

41. The apparatus of claim 40, wherein the specifications are received at the athletic performance monitoring system.

42. An apparatus comprising:

a processor; and

memory storing computer readable instructions that, when executed, cause the apparatus to:

receive first athletic performance data in a first unit;

receive second athletic performance data in a second unit different from the first unit; and

convert each of the first and second athletic performance data to a third unit different from the first and second units, wherein the third unit corresponds to a type of funds useable at an athletic performance monitoring system to acquire one or more items.

43. The apparatus of claim 42, wherein the first unit corresponds to weightlifting repetitions and wherein the second unit corresponds to calories burned.

44. The apparatus of claim 42, wherein the one or more items include athletic equipment.

45. The apparatus of claim 42, wherein the one or more items include apparel.

46. The apparatus of claim 42, wherein the one or more items include a virtual item.

47. A method comprising:

receiving cardiovascular exercise data in a first measurement unit from an athletic device; and

converting the athletic performance data from the first measurement unit to a second measurement unit, wherein the second measurement unit is a distance run.

48. The method of claim 47, wherein the second measurement unit is useable to acquire items from an athletic performance monitoring system.

49. The method of claim 47, wherein the cardiovascular exercise data includes a number of calories burned and wherein converting the athletic performance data is performed using a conversion factor of 100 calories burned=1 mile run.

50. The method of claim 47, wherein the athletic device includes an elliptical machine.

51. The method of claim 47, wherein the athletic devices includes a stationary bicycle.

52. The method of claim 47, further comprising generating an athletic performance monitoring interface displaying a first amount of athletic activity in the first measurement unit and a second amount of athletic activity in the second measurement unit.

53. The method of claim 52, wherein the interface is configurable to display only one of: the first amount of athletic activity in the first measurement unit and the second amount of athletic activity in the second measurement unit.

54. The method of claim 52, wherein the first amount of athletic activity is displayed differently than the second amount of athletic activity.

55. The method of claim 47, wherein the cardiovascular exercise data is received from a music playback device via a music service provider.

56. An apparatus comprising:

a processor; and

memory storing computer readable instructions that, when executed, cause the apparatus to:

receive cardiovascular exercise data in a first measurement unit from an athletic device; and

convert the athletic performance data from the first measurement unit to a second measurement unit, wherein the second measurement unit is a distance run.

57. The apparatus of claim 56, wherein the cardiovascular exercise data includes a number of calories burned and wherein converting the athletic performance data is performed using a conversion factor of 100 calories burned=1 mile run.

58. The apparatus of claim 56, wherein the athletic device includes an elliptical machine.

59. The apparatus of claim 56, wherein the athletic devices includes a stationary bicycle.

60. The apparatus of claim 56, wherein the computer readable instructions, when executed, further cause the apparatus to generate an athletic performance monitoring interface displaying a first amount of athletic activity in the first measurement unit and a second amount of athletic activity in the second measurement unit.

61. The apparatus of claim 60, wherein the interface is configurable to display only one of: the first amount of athletic activity in the first measurement unit and the second amount of athletic activity in the second measurement unit.

62. The apparatus of claim 60, wherein the first amount of athletic activity is displayed differently than the second amount of athletic activity.

63. The apparatus of claim 57 wherein a credit is provided to a user associated with the cardiovascular exercise data that corresponds to the distance run value.

64. The apparatus of claim 63 wherein the credit is displayed in an athletic performance monitoring interface.

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