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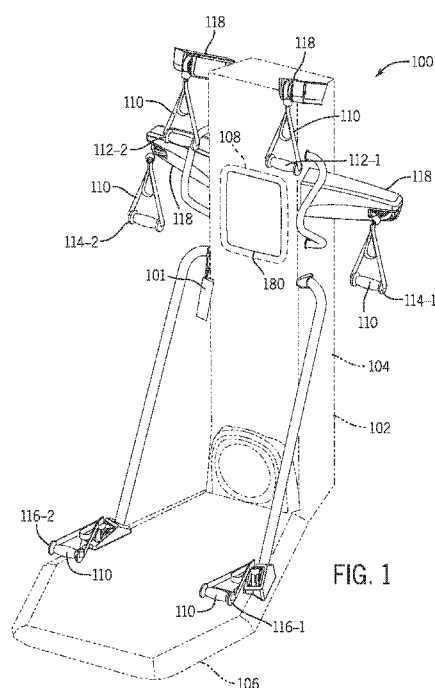


FIG. 1

(57) Abstract: An exercise machine may include a tower enclosing, at least in part, a cable and pulley system, a base supporting the tower on a surface, and a plurality of handles operatively coupled to the cable and pulley system and configured to extend from the tower. The exercise machine may include a resistance motor operatively coupled to the cable and pulley system. The resistance motor may include a fan and a flywheel connected to a common shaft. The exercise machine may be operatively associated with a user interface which includes an exercise display area configured to activate one or more exercise indicators in a predetermined sequence and a control area including at least one mode control operable to change the sequence of activation of the one or more exercise indicators. The user interface may be provided on a console of the exercise machine.



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EXERCISE MACHINE AND USER INTERFACE FOR EXERCISE MACHINE

CROSS REFERENCE TO RELATED APPLICATIONS

[1] This application claims the benefit of priority under 35 USC 119 of U.S. Provisional Patent Application No. 62/331,617 filed May 4, 2016 and entitled “EXERCISE MACHINE AND USER INTERFACE FOR EXERCISE MACHINE,” and U.S. Provisional Patent Application No. 62/374,633 filed August 12, 2016 and entitled “EXERCISE MACHINE AND USER INTERFACE FOR EXERCISE MACHINE,” which are hereby incorporated by reference herein in their entirety.

BACKGROUND

[2] Various fitness devices, such as exercise machines, exist to enable a user to perform a variety of fitness exercises. Often, a user may require a large number of fitness devices to perform a complete workout, which may be cost prohibitive for example in a home setting. In a fitness facility setting, where a variety of fitness devices are typically be available, the user may nonetheless need to engage in planning of his or her workout in advance or during the workout. Advance planning of the sequence of exercises or equipment that the user may need to use can be burdensome and may discourage the user from even beginning a workout. Often, while performing a workout in a fitness facility, a user may need to adjust their workout to accommodate other users that may be using a particular exercise machine, which may reduce the overall efficiency of the user's workout and or may be distracting and/or frustrating for the user. It may therefore be desirable to provide an exercise machine which improves the user experience.

BRIEF DESCRIPTION OF THE DRAWINGS

[3] The description will be more fully understood with reference to the following figures in which components may not be drawn to scale, which are presented as various embodiments of the exercise machine described herein and should not be construed as a complete depiction of the scope of the exercise machine.

[4] Fig. 1 is an illustration of an exercise machine.

[5] Fig. 2 is another illustration of the exercise machine in Fig. 1 showing some of the internal components of the machine.

- [6]** Fig. 3 is a schematic representation of a cable and pulley system for an exercise machine such as the machine in Fig. 1.
- [7]** Fig. 4 is a block diagram of a user interface for an exercise machine such as the machine in Fig. 1.
- [8]** Fig. 5A is a block diagram of an exercise system according to one embodiment.
- [9]** Fig. 5B is an illustration of a user interface for an exercise machine according to one embodiment.
- [10]** Fig. 6 is illustration of an exercise display area of the user interface in Fig. 5B showing a sequence for exercise indicators in accordance with a first exercise mode.
- [11]** Fig. 7 is illustration of the exercise display area of the user interface in Fig. 5B showing a sequence for exercise indicators in accordance with a second exercise mode.
- [12]** Fig. 8 is illustration of the exercise display area of the user interface in Fig. 5B showing a sequence for exercise indicators in accordance with a third exercise mode.
- [13]** Fig. 9 is an illustration of a user interface for an exercise machine according to another embodiment.
- [14]** Fig. 10 is an illustration of a user interface for an exercise machine according to another embodiment.
- [15]** Fig. 11 is a user flow diagram for a user interface in accordance with the present disclosure.
- [16]** Fig. 12 is an illustration of user interface elements associated with a setup process according to one embodiment.
- [17]** Figs. 13A and 13B are illustrations of user interface elements associated with a program selection process according to one embodiment.
- [18]** Fig 14 is an illustration of user interface elements at different times during an exercise program according to one embodiment.
- [19]** Fig 15 is an illustration of user interface elements associated with a manual program according to one embodiment.
- [20]** Fig. 16 is an illustration of user interface elements associated with a pause state of an exercise program.
- [21]** Fig. 17 is a front view of an exercise machine according to an embodiment.
- [22]** Figs. 18A and 18B are partial isometric views of the exercise machine in Fig. 17 showing a medial holder in accordance with some examples of the present disclosure.
- [23]** Fig. 19 is another partial isometric view of the exercise machine in Fig. 17.

- [24]** Figs. 20A and 20B are views of a component of the medial holder in accordance with the present disclosure.
- [25]** Fig. 21 is a partial cross-sectional view along the line 21-21 in Fig. 18A.
- [26]** Fig. 22 is another isometric view of the exercise machine in Fig. 17.
- [27]** Fig. 23 is an isometric view of a slat.
- [28]** Fig. 24A is a partial cross sectional view of the exercise machine in Fig. 17.
- [29]** Fig. 24B is an enlarged view of a portion of the exercise machine indicated by line 24B-24B in FIG. 24A.

DETAILED DESCRIPTION

[30] The present disclosure relates generally to exercise machines, and more specifically to exercise machines with cable and pulley systems. An exercise machine according to the present disclosure may optionally include a configurable user interface.

[31] Figs. 1 and 2 illustrate an exercise machine 100 in accordance with the present disclosure and Fig. 3 shows a schematic representation of a cable and pulley system for an exercise machine, such as exercise machine 100. The various components shown in Figs. 1-3 are merely illustrative, and other variations, including eliminating components, combining components, rearranging components, and substituting components are all contemplated.

[32] The exercise machine 100 may include a plurality of handles 110, each of which is operably connected to a frame 102 and operatively engaged with a resistance assembly 130 (also referred to herein as resistance motor or resistance engine). The frame 102 may include a tower 104 and a base, each of which may at least partially enclose a cable and pulley system 120. The tower 104 may form a housing structure to shield a user from many of the moving parts of the cable and pulley system 120, and may be generally perpendicular to the base 106. The base 106 may be positioned adjacent to and extend from the tower 104. In some examples, the base 106 may, at least partially, extend below and support the tower 106. The base 106 may be configured to support a user during use of the exercise machine 100. A user may stand on or proximate to the base 106 when using the exercise machine 100. The exercise machine 100 may be operatively associated with a user interface 180, which may be provided on a console 108. The console 108 may be part of the tower 104 or may be provided elsewhere on or proximate to the frame 102. In some examples, the user interface 180 may be provided elsewhere in proximity to the exercise machine 100, for example on a display movably or immovably attached to the frame 102 or a display separate from the frame 102. In some

examples, the user interface 180 or components thereof may be provided on the user's mobile device.

[33] The plurality of handles 110 may be operatively associated with the resistance assembly 130 via the cable and pulley system 120. The plurality of handles 110 may include upper handles (e.g., upper right handle 112-1 and upper left handle 112-2), middle handles (e.g., middle right handle 114-1 and middle left handle 114-2), and lower handles (e.g., lower right handle 116-1 and lower left handle 116-2). The terms upper, middle and lower are used to refer to a relative vertical position of the handles. The term middle is meant only to imply that the handles 114-1 and 114-2 are at an intermediate location between the upper and lower handles but not necessarily at a midpoint between the upper and lower handles. In some embodiments, fewer or greater number of handles, and different relative handle locations, may be included.

[34] With specific reference to Fig. 2, each of the handles 110 may be connected to one of a plurality of cables 121, which are routed using pulleys 123 through the resistance assembly 130 to a biasing assembly 140. The biasing assembly may be configured to bias the handles 110 toward their respective retracted positions such as to enable the handles to return to their retracted positions in the absence of the application of force (e.g., a pull force by the user as would be typical during exercise). One or more of the handles (e.g., upper and middle handles) may project from arms 118 extending from the tower 104. One or more of the handles (e.g., lower handles) may project from the base 106. In some examples, some or all of the handles may project directly from the frame 102, e.g., through apertures in the tower and/or base.

[35] The resistance assembly 130 may be configured to provide selectable and/or variable resistance to a pulling force applied via the handles 110. For example, the resistance assembly 130 may be rotatably coupled to the pulley and cable system 120, e.g., via a shaft 118, and may be configured to vary the resistance to rotation of the shaft 118. In some examples, the resistance assembly 130 may include a first resistance assembly 132 and a second resistance assembly 134 which may be coupled to a common shaft (e.g., shaft 118).

[36] The first resistance assembly 132 may be operable to vary the amount of resistance to rotation responsive to user input (e.g., a selected resistance level). In this regard, the first resistance assembly 132 may also be referred to as adjustable resistance assembly. The adjustable resistance assembly may be implemented using one or more DC motors, a single weight or mass, a weight stack, an eddy-current brake, a fan, resilient elastomeric element(s), or combinations thereof. The resistance provided by the adjustable resistance assembly may be adjustable manually (e.g., responsive to user input such as via a user control of the user

interface 180) or automatically (e.g., responsive to a resistance setting in a user profile). In some examples, the automatically-adjustable feature may be disabled via a setting in a user profile. In the illustrated example, the adjustable resistance assembly 132 is implemented using a flywheel 133 and a brake 135 (e.g., eddy-current brake) operatively coupled to the flywheel 132 to vary the resistance to rotation of the flywheel 133. An eddy current brake may be implemented using conventional techniques for example using one or more magnets movably coupled to the flywheel to adjust the position of the magnet(s) with respect to the flywheel and thereby vary the magnetic force between the magnet(s) and flywheel and thereby vary the amount of resistance to rotation of the flywheel. Other types of brakes or resistive elements may be used. The flywheel 133 may be coupled to the shaft 118 such that the flywheel 133 rotates responsive to rotation of the shaft 118. In some examples, the flywheel 133 may be connected directly to the shaft 118 and may rotate synchronously with the shaft 118. In other examples, a transmission assembly may be used to adjust the speed and/or torque of the first resistance assembly 132. The first resistance assembly 132 may be configured to provide resistance at any rotational speed (e.g., relatively lower and relatively higher RPMs) of the shaft 118. The first resistance assembly 132 may be configured to provide a same level of resistance (e.g., based on a selected resistance level) regardless of the rotational speed of the shaft.

[37] In some examples, the second resistance assembly 134 may be a passive resistance assembly in that the amount of resistance is not selectable by the user. The resistance provided by the second resistance assembly 134 may depend only on the amount of force (e.g., pulling force) applied by the user. In some examples, the second resistance assembly 134 may be configured to provide a different amount of resistance as a function of the rotational speed of the shaft 118. That is, the second resistance assembly 134 may provide a higher amount of resistance at higher RPMs of the shaft 118, and may thus be also referred to as non-linear resistance assembly. The second resistance assembly 134 may be implemented using a fan 136 connected to the shaft 118. The fan 136 may include a plurality of blades 138 which may provide an increasing amount of resistance to rotation as the rotational speed of the shaft 118 increases. In yet further examples, the resistance provided by the second resistance assembly 134 may be adjustable (e.g., selectable by the user).

[38] Referring now to Fig. 3, the upper right handle 112-1 is attached to one end 123-1 of a first right cable 122-1 and the middle right handle 114-1 is attached to the opposite end 125-1 of cable 122-1. The cable 122-1 is routed through a one of a first pair of right floating pulleys 142-1. The lower right handle 116-1 is attached to one end 127-1 of a second right cable 124-1

which is routed through the other of the first pair of right floating pulleys 142-1. The cable 124-1 passes through the resistance assembly 130 and its opposite end 129-2 is anchored.

[39] In a similar manner, the upper left handle 112-2 is attached to one end 123-2 of a first left cable 122-2 and the middle left handle 114-2 is attached to the opposite end 125-2 of cable 122-2. The cable 122-2 is routed through a one of a first pair of left floating pulleys 142-2. The lower right handle 116-2 is attached to one end 127-2 of a second left cable 124-2 which is routed through the other of the first pair of left floating pulleys 142-2. The cable 124-2 passes through the resistance assembly 130 and its opposite end 129-2 is anchored.

[40] The right and left cables 124-1, 124-2 respectively are connected to a biasing assembly 140 which includes one or more biasing members configured to bias or tension the cable towards a retracted position of the handles. In the illustrated example, the biasing assembly 140 includes a biasing member 126, the ends of which are anchored (e.g., attached to a fixed frame such as the frame 102 of the exercise machine). The biasing member 126 is connected to the second right cable 124-1 via a second pair of right floating pulleys 144-1 and to the second left cable 124-2 via a second pair of left floating pulleys 144-2. The biasing member 126 may be an axially extendable member such as a bungee cord or other resilient member. When the user pulls on any of the handles, the biasing member 126 may stretch to allow the handle to extend away from the frame. When the force is reduced and/or handle released, the resilience of an axially extendable biasing member 126 may act to retract the handle towards the frame. The floating pulleys 144-1 and 44-2 will move away from the anchor points of the biasing member 126. The biasing member 126 may thereby be operable to apply a biasing or tensioning force to the cables 121. The biasing or tensioning force may act to remove slack in the cables and/or to return the cables to their retracted position in the absence of user applied pulling force. In other examples, a plurality of axially extendable members or different types of biasing members (e.g., one or more coil springs) may be used. In yet further examples, the biasing member 126 may not be axially extendable. The biasing member 126 may be routed through a central pulley positioned between the floating pulleys 144-1 and 44-2, and the central pulley may be movably coupled to the frame 102 to allow the central pulley to move with one or more of the floating pulleys when the user pulls on the handles. A biasing force may be applied to the central pulley (e.g., via a spring connected to the central pulley) to return the pulley and handles to a neutral (i.e., retracted) position. The term cable as used herein is meant to include any type of easily bendable material (e.g., a member that can transmit an axial load but not compressive loads) such as a cable, a rope, a wire, a strap, a chain, or others.

[41] As described, the flywheel and the fan may be on a common shaft and may thus be operable to rotate simultaneously and/or synchronously. In the illustrated example, the cables 124-1 and 124-2 pass through the resistance assembly 130 and operatively engage the first resistance assembly (e.g., flywheel 133) and the second resistance assembly (e.g., fan 136). The cables 124-1 and 124-2 may engage the shaft 118 of the resistance assembly 130 using respective first and second one-way clutch assemblies 138-1 and 138-2. Each of the one-way clutch assemblies includes a cable engagement member and a clutch. The cable engagement member is frictionally engaged with the respective cable (e.g., the 124-1 or the 124-2 cable) and the clutch is operatively coupled to the shaft 118. Each one-way clutch assembly is configured to engage its clutch to rotate the shaft 118 when the cable is rotating the cable engagement member in one direction (e.g., a pull direction) and to disengage the clutch when the cable is rotating the cable engagement member in the opposite direction (e.g., a return direction). In this manner, while the cables and handles are returning to their retracted position (e.g., responsive to biasing force from the biasing assembly), the clutch engagement members of the one-way clutch assembly may spin freely (i.e., without engaging the shaft to rotate the shaft) thereby reducing the resistance to rotation in the return direction.

[42] The exercise machine 100 may be utilized by a user to perform a variety of exercises, for example by grasping one or more of the handles 110 and applying a pulling force. Depending on the combination of handles that the user grasps, the user's orientation relative to the machine and the direction of the application of pulling force, the user may be able to exercise many muscle groups with a single machine such as the exercise machine 100. The exercise machine 100 may thus be used to perform a full or substantially full work-out in which a user exercises multiple muscle groups. The exercise machine 100 may be configured to guide the user through a full or substantially full work-out, which may improve the user experience by reducing the user's effort in determining which exercises to perform and the sequence to perform them. To that end, the exercise machine 100 may be operatively associated with a user interface, examples of which will be described with reference to the remaining figures.

[43] Fig 4 shows a block diagram of an exercise system 1000 which includes a user interface 400 for an exercise machine. The various components shown in Fig. 4 are merely illustrative, and other variations, including eliminating components, combining components, rearranging components, and substituting components are all contemplated. The user interface 400 may be associated with a processor and memory (not shown) which may be provided in the exercise machine or in a computing device operatively coupled (e.g., communicatively coupled) to the exercise machine. The memory (e.g., non-volatile memory such as Flash memory), may

store executable instructions for programming the processor to perform functions associated with the user interface. For example, the processor may perform functions such as controlling the activation of exercise indicators. The processor may cause user data (e.g., weight, age, calories burned, total work, and total time worked) to be stored in the memory and/or displayed via the user interface. The user interface 400 may be used to implement the user interface 180 of exercise machine 100.

[44] The user interface 400 may include a plurality of exercise indicators 410, which may be provided in an exercise display area 402. The exercise display area 402 may be configured to display an exercise sequence by activating one or more of the exercise indicators 410 in a predetermined sequence, as will be further described. The plurality of exercise indicators 410 may include two or more unique exercise indicators, e.g., a first unique exercise indicator 412, a second unique exercise indicator 414, and so on. Each unique exercise indicator 412, 414 may be associated with or correspond to a different type of exercise. The activation of a given unique exercise indicator provides instruction to the user to perform the particular exercise with which the given unique exercise indicator is associated with. In this manner, the sequential activation of exercise indicators may display a sequence of instructions to the user which corresponds to an exercise sequence that may be performed by the user.

[45] The plurality of exercise indicators 410 may be implemented using a plurality of differently colored lights, or a plurality of patterns of lights. Differently colored lights may be obtained using differently colored LEDs or other types of light sources, or using color overlays over white LEDs or other types of light sources. In such examples, the term activating implies continuous or periodic illumination of a light source (or pattern of light sources) associated with a specific exercise indicator. In some example, the differently colored lights may be implemented using individual or groups of pixels of a display unit (e.g., an LCD, OLED display). In some examples, each exercise indicator may be implemented using a single colored light (e.g., a colored LED or white LED with a color overlay). Unique exercise indicator may provide a unique color of light while exercise indicators associated with a same type of exercise may provide a same color of light. In other examples, each unique exercise indicator may be implemented using a unique pattern of lights (e.g., a unique pattern or single or multi-colored LED). In some examples, the pattern of lights may provide a visual representation of the exercise to be performed. In some examples, the exercise indicators may be implemented as visual representations of the corresponding exercises which are displayed on a display device (e.g., an LCD, OLED, or another currently known or later developed display) in accordance with the selected sequence.

[46] In some examples, the exercise indicators 410 may be different from a representation of the associated exercise. That is, the exercise indicators 410 in and of themselves may be insufficient to inform the user which exercise to perform. In such cases, an instruction unit may be associated with the exercise system 1000. For example, the instruction unit may include an instruction manual (see e.g., 101 in Fig. 1) which may be provided with the exercise system 1000. The instruction unit (e.g., instruction manual) may inform the user of the particular exercises that are associated with each unique exercise indicator. The user may memorize these associations or may refer to the instruction unit when using the exercise system. In some examples, the user interface 400 may be provided with an auxiliary display area 404 which may provide a representation (e.g., a visual representation, text and/or audible instructions) of the exercise that is associated with a given exercise indicator. In some examples, the auxiliary display area 404 may provide the representation in real time, e.g., simultaneously with the activation of the exercise indicator. In some examples, the auxiliary display 404 may be configured to provide a preview of a selected sequence before initiation the sequence. The preview may be an abbreviated representation of the sequence that may display each exercise only briefly and/or without inclusion of the rest periods between successive exercises.

[47] The user interface 400 may be configured to receive an indication of one or more user inputs responsive to operation of user interface control elements (also referred to as user controls). The user controls may be implemented using mechanical controls (e.g., knobs, pushbuttons, and switches) or touch sensitive controls (e.g., resistive or capacitive touch sensors or switches). Whether using mechanical or soft controls, the term button may be used herein to refer to a user control which allows the user to trigger an event, such as and without limitation making and/or confirming a selection, triggering an execution of a function, selecting one of a plurality of selectable options such as by pressing the button more than once or by pressing and holding the button for a time to scroll through the selectable options. Similarly, and irrespective of whether using mechanical or soft controls, the term dial may be used to refer to a user control that enables a user to select one of a plurality of settings, such as by turning the dial to increase or decrease the resistance, the volume, or other settings. The functionality of a dial may, in some examples, be implemented using a button which is configured to enable a selection of one of a plurality of selectable options such as by pressing the button more than once or pressing and holding the button to scroll through the selectable options. In some examples, a user control may be implemented in the form of a dial button, which may provide the combined functionalities of a dial and a button such as to allow a user to turn the dial to select one of a plurality of settings and/or to press the dial to make and/or confirm a selection,

whether related or unrelated to the selected setting. In some examples, one or more user controls of the user interface 400 may be implemented on a single touch sensitive display (e.g., touchscreen). The operation of user controls may enable the user to configure the user interface (e.g., input user-specific parameters such as weight, age, etc., or select an exercise mode) and/or to control operation of the user interface and/or the exercise machine.

[48] For example, the user interface 400 may be operable to engage any one or a plurality of modes, one or more of which may be associated with a predetermined sequence of exercises. In this regard, the user interface 400 may include one or more mode controls 406 for selecting one of the plurality of modes. In some examples, the mode control 406 may be implemented using one or more buttons, which may be referred to as program buttons. In some example, the mode control 406 may be implemented using a dial which may be configured to enable the user to select any of the plurality of modes by turning the dial between a plurality of predetermined settings. The mode control 406 and/or other user controls may be provided in a control area 417 (e.g., a control panel) of the user interface. In some example, one or more of the user controls may be provided elsewhere in the user interface. The mode control 406 may be operable to change the sequence of activation of one or more of the exercise indicators 410. Responsive to a selection of one of the modes and/or the activation of the sequence (e.g., using a start button), the exercise display area 404 may be configured to sequentially activate each of the exercise indicators of the sequence in the order corresponding to the sequence. In this manner, the user interface is operable to provide a sequence of instructions to the user which corresponds to an exercise sequence that may be performed by the user. In some examples, the control area 417 may include a plurality of individual mode controls, each associated with a respective one of the plurality of sequences. In some examples, each of the predetermined sequence of exercises may be selectable using a single mode control, for example by depressing it multiple times or for example using a toggle switch, with each side of the toggle switch corresponding to one of the plurality of modes.

[49] The user interface 400 may be configured to display information such as biometric information (e.g., weight, heart rate, etc.), workout metrics associated with a workout in-progress or a completed workout (e.g., total time worked, total calories burned, total power, max or average resistance, etc.), one or more timers (e.g., work and rest timers), and any other information as may be desired. The user interface 400 may be configured to provide this information in an information display area 407 (e.g., info panel) or elsewhere in the user interface. For example, the user interface 400 may include a timer 408 which may be provided in the information display area 407 or elsewhere in the user interface 400. The timer 408 may

be configured to provide an indication of time remaining or time elapsed in a given workout segment and/or a time associated with a rest or break period. The timer 408 may be configured to provide an indication of time for an exercise or group of exercises corresponding to an active exercise indicator or group of exercise indicators. The timer 408 may alternatively or additionally be configured to provide an indication of a rest period following an exercise or group of exercises corresponding to an active exercise indicator or group of exercise indicators. In some examples, the timer 408 may be configured to provide indication of time associated with different rest periods such as rest periods of different type or different length. In some examples, a single timer may be configured to display time associated with different types of workout segments (e.g., work, rest, and break) and the single timer may change to provide a visual indication of the type of workout segment with which the time displayed is associated. This may reduce the amount of physical space utilized by the UI. In some examples, the functionality of the timer 408 may be implemented using a plurality of separate user interface elements (e.g., separate timers for each of the workout segments).

[50] The user interface 400 may include one or more additional display elements (e.g., elements 411, 413, 415), which may include one or more biometric indicators, workout metric indicators, auxiliary information indicators, and others. These additional display elements may be configured to provide additional information, such as biometric information (e.g., weight, height, gender, and heart rate), workout metrics (e.g., running total of calories burned, exercise time, a maximum resistance, and an average resistance) and/or additional information such as instructions, program and/or machine status information, to the user.

[51] Fig. 5A shows an embodiment of an exercise system 1000 which may include a user interface in accordance with the present disclosure. Exercise system 1000 includes user interface 500, a processor 610 operatively connected to user interface 500 such as to control operations of user interface 500, and memory 620 communicatively coupled to processor 610. The memory may store user data 624 (e.g., information associated with one or more user profiles, workout metrics, biometrics, and the like), and executable instructions 626. The instructions 626 may include processor-executable instructions for configuring the user interface in accordance with the examples herein and/or for controlling operation of the user interface. For example the executable instructions 626 may include instructions for activating the exercise indicators in accordance with a sequence. The exercise system 1000 may be configured to receive, via the user interface 500, user inputs such as selection of a user profile and a workout program and to provide, via the user interface 500, output such as exercise guidance, displaying of information and/or instructions for operating the user interface and/or the exercise machine.

[52] Fig 5B shows an embodiment of a user interface 500 for an exercise machine, such as exercise machine 100. The various components shown in Figs. 5A and 5B are merely illustrative and other variations, including eliminating components, combining components, rearranging components, and substituting components, are all contemplated. Certain aspects of the user interface 500 may be purely functional, serve both functional and ornamental purpose, or may be purely ornamental.

[53] The user interface 500 may be used to implement the user interface 180 of exercise machine 100. The user interface 500 or components thereof may be used to implement the user interface 400 or components thereof and such components may be indicated using similar reference numbers. For example, the user interface 500 may include a plurality of exercise indicators 510, which may be provided in a display area 502, as well as a timer 508, which may be provided in an information display area 507, and a plurality of user controls (e.g. mode controls 506), which may be provided in a control area 517. The exercise indicators 510 may be used to implement the exercise indicators 410 of the user interface 400. The timer 508 and mode control 506 may be used to implement the timer 408 and mode control 406, respectively, of the user interface 400. The user interface 500 may be configured to guide a user of an exercise machine (e.g., exercise machine 100) through a sequence of exercises. The user interface 500 may be configured to guide the user through any one of a plurality of predetermined sequences of exercises responsive to a selection of an exercise mode, also referred to simply as mode, program, or workout program (e.g., sprint, circuit, and builder mode or program).

[54] A sequence of exercises may be divided into exercise segments (e.g., repetitions and sets). A repetition may involve a same exercise. A single exercise indicator 510 of the user interface 500 may correspond with the instruction to perform the same exercise for a period of time during which the exercise indicator remains active. Thus, a single exercise indicator may be associated with a single repetition. In some examples, a single repetition may involve performing the same exercise (e.g., pulling on both upper handles, performing a squat, a squat jump, a chest press, a bent row, a lunge, a triceps extension, a bicep curl, a deadlift, or virtually any other exercise with or without holding and/or pulling on one or more of the handles) multiple times during the predetermined period of time, also referred to as repetition time. Thus, an individual exercise indicator may function to indicate not only the exercise to be performed during a given repetition but also the repetition time association with that exercise. The duration during which an exercise indicator is active may correspond with the repetition time. Exercise segments may be grouped into a workout segment, which for illustrative purposes may be

referred to as work period. That is, a set of exercises which are associated with a work period may include a grouping of exercises that are performed consecutively, for example without a rest period. The duration of time in a work period may be indicated by the work timer. In some examples, a set may include a plurality of repetitions of a same exercise without a rest period between the repetitions. In some examples, a set may include repetitions of different exercises. One or more repetitions or one or more sets may be grouped into a workout round, which may be separated from other rounds by a break period. A break period may be of different duration, for example longer, than a rest period. The combination and duration of repetitions in a set and the repetitions and/or sets in a round as well as the rest or break periods between may be determined by the selected mode (e.g., responsive to a selection via the mode selector 506). For example, in one mode, the sequence may include four rounds, each separated by a break period of a predetermined duration (e.g., 60 seconds). Each of the four rounds may include four sets, each of which includes a single repetition of two different exercises, the sets separated by a rest period of a predetermined duration (e.g., 10 seconds). The work period for each of the four sets may also be of a predetermined duration (e.g., 20 seconds) with each repetition being half of that predetermined duration (e.g., 10 seconds). Different sequences may be used, additional examples of which will be described further below.

[55] Each of the predetermined sequences may be configured to continue for a predetermined period of total time (e.g., 15 minutes, 20 minutes, 25 minutes, or any other shorter or longer period of time), also referred to as sequence time. In some examples, the sequence times of each of the predetermined sequences may be the same. That is, in some examples, the duration of time which includes all of the repetition times and all of the rest times may be the same regardless of the selected sequence of exercises. In some examples the sequence times of different pre-programmed sequences may differ. In some examples, the user interface may be configured such that the sequence time of any of the pre-programmed sequences is less than a threshold maximum time, for example 25 minute, 30 minutes, 38 minutes, 40 minutes, or other. As described, a sequence of exercises may include one or more sets of exercises. In some examples, a sequence may include one or more first rest periods each having a first duration and one or more second rest periods each having a second duration, which may be different from or the same as the first duration. In some examples, the second rest period may be longer than the first rest period. In some examples, a first rest period may follow a set of exercises, and the second rest period may follow a group of sets (e.g., two or more sets of exercises).

[56] The exercise indicators 510 in the example illustrated in Fig. 5B are implemented using a plurality of lights (e.g., an array 505 of lights 522). For example, the exercise display area 502 may be implemented using an LED panel which includes a plurality of LEDs, two or more of which may be capable of illuminating in a different color. In some examples, differently colored LEDs may be used. In other examples, white LEDs with color silk screen overlay may be used. Other implementations may also be used. The lights 522 are arranged in **m** number of rows and **n** number of columns. In the illustrated example, the lights 522 are arranged in 8 rows by 8 columns. In other examples, a different number of rows and/or a different number of columns may be used. In some examples, the lights 522 may be arranged in different patterns other than a two-dimensional array, such as a triangular, circular, or trapezoidal pattern or an irregular pattern. The numbering for the rows and columns shown in Fig. 5B is provided for illustration. In some examples, numbering of the rows and columns (e.g., 1-8) and/or groups of rows (e.g., sets S1, S2, S3, S4) or columns may not be included in the user interface. In other examples, additional or different numbering or other form of identification, such as letters or symbols, may be provided.

[57] Individual lights 522 in the array 505 correspond to individual exercise indicators 510. The array 505 includes at least two unique exercise indicators (e.g., two uniquely colored lights), and each unique exercise indicator may be associated with a different exercise. Some of the exercise indicators may be the same or similar (e.g., same color lights) and same or similar exercise indicators may be associated with the same exercise. Thus, when activating the exercise indicators, a change from one exercise indicator to a different unique exercise indicator instructs the user to change the exercise which is being performed, while activation of another same exercise indicator instructs the user to continue to perform the same exercise. In the illustrated example, the lights 522 in any given row have the same color and are associated with the same exercise. Each row includes multiple exercise indicators (e.g., lights 522) corresponding to multiple repetitions of the same exercise. In some examples, the user interface 500 may be configured to instruct the user to perform multiple or all repetitions of the same exercise consecutively and/or without a rest period (e.g., by sequentially activating all of the lights in a given row without a rest period) before proceeding to the next exercise. In some examples, the user interface 500 may be configured to instruct the user to perform all of the repetitions associated with multiple rows consecutively and/or without a rest period. In this regard, the lights in any given row or groups of rows may be said to correspond with a set (e.g., S1, S2, S3, and S4).

[58] The lights 522 in any given column have different colors and may thus be associated with different exercises. In some examples, the user interface 500 may be configured to instruct the user to perform a sequence of exercises including a single repetition of different exercises consecutively and/or without a rest period, e.g., by sequentially activating a single light from each row moving down the columns before proceeding to a next column). In this manner, the user interface 500 may be operable to guide the user through a number of different sequences of exercises by activating lights in different patterns.

[59] In some examples, the user interface 500 may be configured to wirelessly connect to another computing device, such as via any known wireless communication protocol (e.g., Wi-Fi, Bluetooth, ZigBee, etc.). The user interface 500 may be provided with one or more status indicators. For example, the user interface 500 may include a connectivity status indicator, which may activate when the user interface 500 is wirelessly connected to or configured to wirelessly pair with another computing device such as the user's smart phone, smart watch, or the like. In one example, the connectivity status indicator may be provided by a Bluetooth icon and/or an LED proximate a Bluetooth graphical element. The Bluetooth icon and/or LED may illuminate to indicate Bluetooth connectivity status. In some examples, the connectivity status indicator may illuminate differently to indicate different states (e.g., continuously illuminated to indicate paired, flashing to indicate available for pairing or in the process of pairing). In other examples, the user interface 500 may include two or more status indicators for different types of wireless communication devices that may be available.

[60] The user interface 500 may include one or more user controls and may be operable to engage one of a plurality of exercise modes (e.g., four modes as in the example in Fig. 5B). As described, the user controls may be implemented using any combination of mechanical and/or soft controls. In the illustrated example, each of the plurality of modes is selectable via a respective mode control (e.g., program buttons 506-1 through 506-4). One or more of the mode controls 506 may be associated with a predetermined sequence of activation of the exercise indicators (e.g., lights 522). In the illustrated example, the user interface includes a first program button 506-1 associated with a first exercise sequence (e.g., sprint program), a second program button 506-2 associated with a second exercise sequence (e.g., circuit program), and a third program button 506-3 associated with a third exercise sequence (e.g., builder program), each of which may differ from one another. For example, selecting the first program button 506-1 may cause the exercise indicators 510 to activate in accordance with the first exercise sequence, selecting the second program button 506-2 may cause the exercise indicators 510 to activate in accordance with the second exercise sequence, and so on. In some examples, the

plurality of modes may include a manual mode in which the display area may not provide guidance and the user may instead perform any desired sequence of exercises. To that end, the user interface 500 may include a MANUAL program button 506-4. Selection of the MANUAL program button 506-4 may deactivate the display area or may display a pattern of lights in the display area for purely ornamental purpose. In some examples, whether or not guidance is provided via the user interface 500, the user interface 500 may not otherwise inhibit the use of the exercise machine in any manner desired (e.g., to perform different exercises than those indicated by the exercise indicators).

[61] The user interface 500 may include one or more timers 508, each of which may be associated with a different type of workout segment (e.g., a rest timer associated with a rest period, a break timer associated with a break period, and a work timer associated with a work period. The timer(s) 508 may be configured to provide an indication of the time elapsed or remaining for the respective exercise segment, such as the time elapsed or remaining for an exercise or group of exercises corresponding to an active exercise indicator or group of exercise indicators (e.g., work timer) or time elapsed or remaining for a rest period following a work period (e.g., rest timer, break timer). One or more of the timer(s) 508 may be configured to count down (e.g., to show a remaining time within a period) or to count up (e.g., to show a running total of elapsed time in a period). For example, the work timer may be configured to count up the period of time elapsed during an exercise segment, also referred to as work period. The rest time, the break timer, or both may be configured to count down a remaining time within a rest period. In some examples, the time count directions for any of the timers may be reversed. In some examples, the break timer may be configured to provide an indication of a manual rest period activated responsive to operation of a user control (e.g., pause/stop button 523), for example by counting up elapsed time following the operation of the user control (e.g., pause/ stop button 523).

[62] In some examples, two or more timers may be implemented in substantially the same physical space within the user interface (UI) and may share UI components. For example, in the illustrated example in Fig. 5B, each of the rest, break and work timers occupy substantially the same physical space in the UI 500 and use the same alphanumeric display element for displaying the time associated with each timer. Each timer may include a timer type indicator 519 configured to provide a visual indication of the timer that is currently active. In the example in Fig. 5B, the timer type indicator 519 is provided by a selectively illuminating track at a perimeter of the timer 508 in combination with selectively illuminating label corresponding to the type of exercise segment. When the timer 508 displays time associated with a work segment,

one of the tracks at the perimeter of the timer 508 and the WORK label may illuminate to provide an indication of the timer that is active. When the timer 508 displays time associated with a rest or break segment, other ones of the tracks at the perimeter of the timer 508 and the REST or BREAK label, respectively, may illuminate to provide an indication of the timer that is active. The tracks may illuminate in different colors (e.g., green for work, orange for rest, red for break, or other combinations) or they may illuminate in the same color (e.g., all tracks may illuminate in white or any other color).

[63] Operations of the user interface 500 will be described further with reference now also to Figs. 6-8. Fig. 6 illustrates a sequence for activation of one or more of the lights 522 in the array 505 in accordance with a first example, e.g., responsive to a selection of a first mode such as via the first mode control 506-1. Figs. 7 and 8 illustrate sequences for activation of one or more of the lights 522 in the array 505 in accordance with additional examples, e.g., responsive to a selection of a second and third mode, respectively, such as via the second and third mode controls 506-2 and 506-3, respectively. The sequences shown in Figs. 6-8 are merely illustrative, and other variations, such as rearranging the sequences or eliminating, adding, or substituting elements of sequences are all contemplated. As described, the sequence may be configured, e.g., by selecting a duration of each repetition, number of repetitions, and rest periods, such that the sequence may be performed within a predetermined period of time (e.g., sequence time). In some examples, the sequence times may be preprogrammed into the exercise system 1000, e.g., by a manufacturer of the exercise system. In some examples, one or more of the pre-programmed sequences may be updated or additional sequences may be added in the field, such as by loading an updated sequence into the memory of the exercise system. In some examples, the sequence time may be user configurable and the exercise system may be operable to adjust the combination of duration and/or number of repetitions and rest periods to accommodate the user selected sequence time. The user interface 500 may improve the user experience, by assisting the user to perform a complete workout in a predetermined period of time with minimal distractions or planning as may result from having to think about or plan which exercise to perform or how many repetitions of an exercise to perform.

[64] In some examples, a sequence may begin by illuminating a plurality of lights in the array 505. For example, all lights corresponding to the exercises in a given sequence or part of a sequence may be illuminated prior to the start of the sequence and individual lights may be turned Off as exercises are completed in a countdown manner. Activation of a particular exercise indicator (e.g., light 522) may involve the periodic illumination (i.e., blinking) of the light 522 to inform the user which exercise the user should be performing. The exercise indicator

(e.g., light 522) may remain active (e.g., blinking) for a predetermined duration of time to indicate the duration of time that the user should be performing that exercise. In some example, the sequence may instead begin with all lights being turned Off and upon start of the sequence, individual lights may be illuminated in accordance with the sequence. Lights corresponding to exercise segments (e.g., a repetition or a set) that have been completed may remain On or be turned Off upon completion of that exercise segment.

[65] In some examples, the user interface 500 may be configured, e.g., responsive to a selection of a first mode, to activate all of the lights in one row before activating any lights in a next row. For example, and referring to Fig. 6, a first sequence may involve the activation of lights 522 along rows of the array 505. That is, all lights in a first row (e.g., m1) may be sequentially activated first before any of the lights in a second row (e.g., m2) are activated. Similarly, all lights in a second row (e.g., m2) may be sequentially activated before any lights in a third row (e.g., m3) are activated, and so on. In some examples, the sequential activation of lights along rows need not start with the first row nor does it need to continue through all of the rows in the array, for example to accommodate shorter sequence times. In some examples, the activation of lights may begin at the second, third, or any other row or it may terminate before reaching the last row. As described, all of the lights in each row may have the same color and may thus correspond with the same exercise. Thus, a user may be guided through a sequence in which he or she performs multiple repetitions of the same exercise before proceeding to another exercise.

[66] In some examples, the sequence may include one or more rest periods. For example, the user interface 500 may be configured to sequentially activate all of the lights in one row followed by a rest period before continuing to the next row. In some examples, the user interface 500 may be configured to sequentially activate all of the lights in multiples rows before initiating of a rest period. In yet further examples, the user interface 500 may be configured to initiate a first rest period having a shorter duration following the sequential activation of one row and to initiate a second rest period having a longer duration following the sequential activation of a second row in a set (e.g., S1). During an exercise segment, the work timer may be operative to indicate a running total of all of the repetitions in the segment. At the completion of the segment, the rest timer may be operative to indicate a remaining time in a rest period. The lights which have already been activated in a given sequence may remain illuminated or may be turned off upon the completion of the exercise segment (e.g., during the indication of rest period and/or during activation of lights of a subsequent exercise segment). This pattern may be repeated for some or all of the remaining sets (e.g., S2-S4) to complete the sequence. At any

time during the sequence, the user interface 500 may be configured to temporarily suspend the sequence responsive to an indication of a manual rest period such as may be received via operation of a user control (e.g., pause/stop button 523). During the sequence, the user interface 500 may be configured to display, for example in an information display area 507 of the user interface 500, certain information including but not limited to biometric information. The user interface 500 may include a plurality of display elements (e.g., display elements 511 and 515-1 through 515-4), one or more of which may be configured to display information such as biometric information, workout metrics, messages, prompts, instructions, or other information. In some examples, the display elements may be provided via one or more alphanumeric LED panels. In some examples, the display elements may be provided via one or more LCD displays. Other display technology may be used.

[67] In some examples, the user interface 500 may be configured, e.g., responsive to a selection of a second mode, to activate all of the lights in one column before activating lights in a next column. For example, and referring to Fig. 7, a second sequence may involve the activation of lights 522 along columns of the array 505. That is, all lights in a first column (e.g., n1) may be sequentially activated first before any of the lights in a second column (e.g., n2) are activated. Similarly, all lights in a second column (e.g., n2) may be sequentially activated before any lights in a third column (e.g., n3) are activated, and so on. In some examples, the sequential activation of lights along columns need not start with the first column nor does it need to continue through all of the columns in the array, for example to accommodate shorter sequence times. In some examples, the activation of lights may begin at the second, third, or any other column or it may terminate before reaching the last column. As described, individual lights in a column may be differently colored and thus correspond with different exercises. Thus, a user may be guided through a sequence in which the user performs one repetition of each exercise before proceeding with a second repetition of the first exercise.

[68] As with the example in Fig. 6, the sequence in Fig. 7 may include one or more rest periods. For example, the user interface 500 may be configured to initiate (e.g., by activating a rest timer) a first rest period after the sequential activation of all of the lights in a given column. In some examples, the user interface 500 may be configured to initiate another rest period of different duration than the first rest period (e.g., by activating a break timer) after activating all of the lights in multiple consecutive columns sequentially without any rest period therebetween. In yet further examples, the user interface 500 may be configured to initiate a rest period only after activating of all of the lights in multiple consecutive columns sequentially without any rest period therebetween. In some examples, the successive rest periods in a sequence may vary in

duration. For example, successive rest periods may increase in duration, decrease in duration, or may first increase then decrease in duration before the end of the sequence. The pattern illustrated in Fig. 7 may be repeated for some or all of the columns in the array 505.

[69] In some examples, the user interface 500 may be configured to activate all of the lights in one row followed by less than all of the lights in a next row, e.g., responsive to a selection of a third mode. For example, and referring to Fig. 8, a third sequence may involve the activation of lights 522 along a triangular pattern, in this case defined by rows of the array 505. In other examples, the triangular pattern may be defined by columns of the array.

[70] In the example illustrated in Fig. 8, all lights in a first row (e.g., m1) may be sequentially activated first before any of the lights in a second column (e.g., m2) are activated. Following the activation of lights in a given row, the same number of lights minus one is activated in a next row. This pattern is repeated until the last row of the sequence is reached, which in some examples may be the last row of the array. As with the other examples, the user interface 500 may be configured to initiate a rest period after the activation of all lights in a row or in multiple consecutive rows.

[71] Referring back to Fig. 5B, the exercise system 1000 may include an exercise machine, (e.g., exercise machine 100), which include a cable a pulley system and a resistance motor (e.g., resistance assembly 130). The user interface 500 may be operatively associated with the exercise machine, e.g., provided on a console 108 of the exercise machine, and may guide the user through a sequence of exercises. The user interface 500 may include a plurality of unique exercise indicators (a plurality of differently colored lights 522). Individual ones of the unique exercise indicators may be associated with a particular type of exercise (e.g., pulling down both upper handles together, pulling down a single upper handle, pulling one or both lower handles, pulling on an upper and a lower handle together in cross-body manner, etc.). The activation of any given unique indicator may instruct the user to perform that particular exercise.

[72] The user interface 500 may be configured to receive user input for changing the resistance provided by the resistance motor, e.g., responsive to operation of a resistance control 520 of the user interface 500. The resistance control 520 may be implemented using a mechanical control (e.g., a knob, a dial) or soft control (e.g., a touch sensitive switch), or combinations thereof. In the illustrated example in Fig. 5B, the resistance control 520 is implemented using a dial button, which provides functionality both for selecting a resistance level by turning the dial and making or confirming a selection by pressing the dial. The resistance control 520 may be interchangeably referred to as resistance dial 520. The

resistance provided by resistance motor 130 may be varied responsive to the user input, for example by adjusting a position of an eddy current brake 135 associated with flywheel 133.

[73] The user interface 500 may include additional user controls, such as a user button 516, a start button 525, a pause/stop button 523, an add time button 527, a volume button 529, and others. The user button 516 may be operable to select a preloaded user profile and/or make changes to a user profile, which may include a default resistance level, a default mode, and/or additional user information such as weight, age, and gender, that may be used by the exercise system 1000 to generate workout metrics (e.g., total work done, total calories burned, etc.). The start button 525 may be operable to initiate a selected sequence and/or re-start a paused sequence. The volume button 529 may be operable to control a volume of a speaker, which may be configured to provide audible instructions or other audible sounds such as single, double, or multiple-tone feedback to indicate a start, a rest, a break, or generally any change in the workout sequence).

[74] The add time button 527 may be operable to add additional time to an exercise sequence, for example by adding one or more additional repetitions, sets, and/or rounds to the sequence. In some examples, the type and/or number of exercise segments that are added responsive to pressing the add time button may be based on the selected exercise mode. For example, pressing the add button may add one round of the selected mode and/or one or more rest periods as may be appropriate. In some examples, the type and/or number of exercise segments that are added responsive to pressing the add time button may be controlled by the number and/or manner in which the add time button is operated. For example, pressing the add button once may add a single repetition, pressing the add button twice may add a set, and pressing the add button three times (or pressing and holding the add button) may add a round. Other combinations for controlling the add button functionality may be used. In this manner, the add time button 527 may be operable to increase, responsive to user input, the duration of an exercise sequence beyond the pre-programmed sequence time. The add time button 527 may be operable to add time before or during a workout and the user interface may be configured to provide a visual indication of the total adjusted sequence time (i.e., pre-programmed sequence time plus additional sequence time corresponding to the added segments).

[75] Before, during, and after a workout, one or more of the user interface elements (e.g., user controls, display elements, exercise indicators) may be illuminated or otherwise activated to indicate that the interface element is active or enabled for user operation. One or more of the user controls may be provided in a control area 517 (e.g., control panel) of the user interface 500. In some examples the exercise display area 502, the information display area 507, and

the control area 517 may all be provided on a single panel (e.g., console 108 or a display unit associated with exercise machine 100). In some examples, any of the exercise display area 502, the information display area 507, and the control area 517 may all be provided on separate panels (e.g., separate consoles or displays operatively associated with exercise machine 100). In some examples, the one or more panels that include components of user interface 500 may be movably connected to the exercise machine 100 (e.g., via an articulating arm extending from the frame 102). In yet further examples, components of the user interface 500 may be implemented on a mobile device 1020, such as a mobile phone, a smart phone, a tablet, a smart watch, or another portable computing device, e.g., as shown in Fig. 10.

[76] Referring now to Fig. 9, a user interface 900 in accordance with another embodiment is described. The user interface 900 may include one or more of the components of the user interfaces 400, 500 and similar components may be indicated using similar reference numbers. For example, the user interface 900 may include a plurality of exercise indicators 910. The exercise indicators 910 are implemented using multi-colored lights 922 arranged in an array 905 having 8 rows and 8 columns. The user interface 900 is operable to activate one or more of the exercise indicators 910 in accordance with a predetermined sequence to guide a user through a sequence of exercises. The user interface 900 may include user controls such as mode controls 906 (e.g., FIT, LEAN, POWER, and MANUAL buttons 906-1 through 906-4, respectively), a resistance control 920, user button 916, volume 929, start button 925 and pause/stop button 923. A user may select a mode via one of the mode selectors 906 and the user interface 900 may activate the one or more of the exercise indicators 910 (e.g., lights 922) in accordance with the selected sequence. The various components shown in Fig. 9 are merely illustrative, and other variations, including eliminating components, combining components, rearranging components, and substituting components are all contemplated.

[77] A user interface in accordance with the present disclosure (e.g., user interface 500 or 900) may be configured to activate one or more exercise indicators in accordance with a variety of sequences, such as described herein. Non-limiting examples of sequences according to further examples are described below.

[78] Example 1

[79] An example sequence, which may be associated with a first selected mode, starts by illuminating at least one full row of lights, and in some examples all rows, in the array. Individual lights are sequentially activated (by flashing or blinking) from left to right for a period of time (e.g., repetition time) after which a flashing light is turned off. The repetition time may be 20 seconds. A work timer counts the repetition time down to zero. When the work timer reaches

zero, the flashing light is turned off and the work timer is turned off, while a rest time turns on and begins to count a rest period down to zero. The rest period may be 10 seconds. When the rest period reaches zero, the next light in the same row of lights is activated (e.g., begins flashing) and the work timer begins to count down another period of time (e.g., repletion time), which may also be 20 seconds. When the work timer reaches zero, the flashing light is turned off and the rest timer is again turned on for another rest period, which may also be 10 seconds. This is repeated for all 8 lights in the first row. After the last light in the first row is turned off, all lights in the first row would have been deactivated and instead of a rest period, a break timer turns on, which counts a break period (up or down). The break period may be 30 seconds. After the break period has elapsed, the first light in the second row is activated (e.g., begins flashing) and the work timer begins to count down another repletion time, which may again be 20 seconds. The same pattern is repeated for the entire second row, at the completion of which a break timer is again activated to count another break period, which may again be 30 seconds. After the last light in the second row has been turned off, all of the lights in both the first and second row will remain off. The sequence will end after all of the lights in the array have been turned off. This exemplary sequence may be completed in less than 35 minutes, accounting for all repetition times and all rest and break periods.

[80] Example 2

[81] Another example sequence, which may be associated with a first selected mode, starts by illuminating at least one full row of lights, and in some examples all rows, in the array. Individual lights are sequentially activated (by flashing or blinking) from left to right for a period of time (e.g., repetition time) after which the flashing light is turned off. The repetition time may be 10 seconds. A work timer counts the repetition time down to zero. When the work timer reaches zero, the flashing light is turned off, the counter resets for a new repetition (which may also be 10 seconds) and the next light in the same row begins to flash. When the work timer again reaches zero, this second flashing light is turned off, the counter resets again for the next repetition (which may also be 10 seconds) and the next light in the same row begins to flash. This is repeated for all lights in the same row. When the work timer for the last light in the row reaches zero the last light in the row is turned off and a rest timer is activated and counts down a rest period, which may be 20 seconds. After the rest period ends, the first light in the second row begins to flash and the work timer begins to count down a new repetition time, which may again be 10 seconds. The same pattern as described for the first row is repeated for the second row, with each of the eight lights sequentially flashing for 10 seconds each. And the counter counting down the work time associated with each light. Alternatively, the counter may

count up or down the total time for a row of lights without resetting between repetitions. At the completion of the second row (e.g., end of set S1), another rest period, in some cases a longer rest period of 30 seconds is initiated. A break timer may count the period of 30 seconds down and during this time no lights are flashing. When the break timer reaches zero, the break timer turns off and a new work timer begins to count a new repetition associated with the first light of the next row (e.g., third row). The third and fourth rows of lights are activated in this manner with a shorter rest period of 20 seconds between the lights in the third and fourth rows and a break period of 30 seconds is initiated upon the completion of the second set S2. This pattern of light activation and rest periods is repeated for all four sets and the sequence ends at the completion of fourth set S4, at which time all lights would be turned off. This sequence may be completed in less than 15 minutes, assuming the user does not activate a manual rest period during the sequence. The total work time of any given sequence may be displayed via the user interface.

[82] Example 3

[83] An example sequence, which may be associated with a second selected mode, starts by illuminating at least one full column of lights, and in some examples all columns, in the array. Individual lights are sequentially activated (by flashing or blinking) from top to bottom for a period of time (e.g., repetition time) after which a flashing light is turned off. The repetition time may be 20 seconds. A work timer counts the repetition time down to zero. When the work timer reaches zero, the flashing light is turned off, the work timer is reset to the start of a new repetition time (e.g., 20 seconds) and the next light down along the column is activated (e.g., begins flashing) for the duration of the repetition time. This is repeated for all lights in a single column. When the work timer for the last light in a column reaches zero, the last light in the column is turned off, the work timer is turned off and the rest timer is activated for a rest period, which may be 20 seconds. In some cases, the rest period between columns may be longer, for example 30 seconds, or the rest periods may alternate between 20 seconds between columns in a set and 30 seconds between sets (e.g., two consecutive columns). At the completion of the sequence, all lights have been deactivated (e.g., turned off) and the work timer is turned off. A sum total of worked time may be displayed e.g., via a total timer of the user interface. This sequence may be completed in less than 25 minutes depending on the combination and duration of rest periods between sets.

[84] Example 4

[85] An example sequence, which may be associated with a third selected mode, starts by illuminating all of the lights in a triangular pattern defined by a full first row or column and partial

subsequent rows or columns of the array (e.g., as in the sequence shown in Fig. 8). Individual lights are sequentially activated (by flashing or blinking) from left to right for a period of time (e.g., repetition time) after which a flashing light is turned off. The repetition time may be 10 seconds. A work timer counts the repetition time down to zero. When the work timer reaches zero, the flashing light is turned off, the work timer resets to the start of a new repetition time (e.g., 10 seconds) and the next light along the same row is activated (e.g., begins flashing) for the duration of the repetition time. This is repeated for all lights in a single row. When the work timer for the last light in a row reaches zero, the last light in the row is turned off, the work timer is turned off and a rest timer is activated for a rest period, which may be 20 seconds. At the end of the first rest period, the lights are again illuminated according to the starting pattern (e.g., all lights of the first row, all but one light in the second row, all but two lights in the third row and so on, are re-illuminated). The activation pattern of the first row is repeated and then the sequence moves to the next partial row without a rest period in between. The partial row is completed by sequentially activating each light in the partial row for a work period (e.g., 10 seconds) each. At the end of the partial row, a new rest period is activated, by activating a rest timer which counts the rest period (e.g., 10 seconds) up or down. At the completion of this rest period, the lights are again re-illuminated in accordance with the starting pattern. The sequence returns to the first row and all of the lights in the first row are sequentially activated (e.g., all 8 lights are activated for 10 seconds each) followed by all of the lights in the next row (e.g., 7 of the 8 lights in the second row are activated for 10 seconds each) followed by all of the lights in the next partial row (e.g., 6 of the 8 lights in the third row are activated for 10 seconds each) without any rest periods in between. A new rest period (e.g., 20 seconds) is provided after the completion of this set, at the end of which the sequence returns to the first row and the activation of lights is repeated starting from the first row through the fourth row, and so on until all of the lights have been stepped through in this pyramid manner. As will be appreciated, in this example, a total of 7 rest periods are provided between 8 sets, which would include 8, 15, 21, 26, 30, 33, 35, and 36 repetitions consecutively (e.g., set 1 includes 8 repetition, set 2 includes 15 repetitions, and so on). This sequence may be completed in slightly over 36 minutes.

[86] Example 5

[87] Another example sequence, which may be associated with a third selected mode, may include the activation of lights in a pyramid manner as described above in Example 4 with the difference being that the triangular pattern of lights is instead defined along columns of the array. That is at the start of the sequence, all lights in the first column, all but one light in the second column, all but two lights in the third column, and so on are illuminated. The lights are

sequentially activated in accordance with a pyramid step through pattern similar to that described above except that the activation sequence moves from top to bottom along the columns and from left to right from full to partial columns. The work period for each repetition may again be 10 seconds, or in some cases 20 seconds. The rest periods between sets may be 20 seconds, or in some cases 30 seconds. As in Example 4, the sequence would include a total of 7 rest periods and 8 sets including 8, 15, 21, 26, 30, 33, 35, and 36 repetitions consecutively. Alternatively, the sequence may begin with none of the lights being illuminated and the lights being sequentially turned on and remaining on after sequential activation (e.g., after each step of the pyramid is completed).

[88] The specific examples of work periods, rest periods, and sequence of activation of lights described are provided for illustration only and other combinations of work periods, rest periods, and sequences of activation of lights may be implemented with a user interface in accordance with the present examples.

[89] Fig. 10 illustrates an exercise system 1000' that includes an exercise machine (e.g., exercise machine 100), which may be configured to communicate wirelessly with a mobile device. The exercise machine 100 may include a wireless communication interface (e.g., a Bluetooth or Wi-Fi communication device) for communicatively coupling the exercise machine 100 with the portable computing device 1020 (e.g., smart phone). The portable computing device may include executable instructions for providing a user interface 1500 (e.g., user interface 400, 500, or 900), or components thereof, on a display 1024 of the portable computing device. In some examples, one or more components of the user interface may be provided on the console 108 of the exercise machine, on the display 1024 of the portable computing device, or a combination thereof. In some examples, the user interface or components thereof may be duplicated on both the console 108 and the display 1024. In some examples, a part of the user interface may be provided on the console 108 and a part of the user interface may be provided on the display 1024. In some examples, one or more components of the user interface provided on console 108 may be controllable via the portable computing device 1020 (e.g., via user interface elements on display 1024). The various components shown in Fig. 10 are merely illustrative, and other variations, including eliminating components, combining components, rearranging components, and substituting components are all contemplated.

[90] With continued reference to Figs. 1 and 10, the exercise machine 100 may include other features to provide a desired aesthetic and/or functional characteristic. For example, in some embodiments, the base 106, handles 110, or other surfaces of the machine may include a non-slip contact surface, e.g., to reduce the risk of slipping of a user's hands and/or feet while

performing a given exercise. In some embodiments, the tower 104 may include one or more openings or access points, e.g., for airflow to the resistance assembly and/or maintenance purposes. The tower 104 may otherwise enclose some or all of the internal components of the machine (e.g., cable and pulley system 120, biasing assembly 140) so as to hide them from view and provide a more aesthetic appearance of the exercise machine 100. Any of the components of the machine (e.g., base, tower, handles, and console) may include design features that to provide an overall aesthetically pleasing look. In some examples, one or more elements of the user interface 180 may serve aesthetic and/or functional purpose.

[91] The exercise machine 100 and/or components thereof may be formed from a variety of materials and means. For instance, the frame 102 and the handles, among others, may be formed from metal, plastic, or other suitable material with sufficient strength. Metals may include aluminum, steel, titanium, or any other suitable metal, alloy, or composite. Plastics may include a thermoplastic material (self-reinforced or fiber reinforced), nylon, LDPE, ABS, polycarbonate, polypropylene, polystyrene, PVC, polyamide, and/or PTFE, among others, and may be formed or molded in any suitable manner, such as by plug molding, blow molding, injection molding, extrusion, or the like. The cables 121 may be formed of nylon or steel wire, braided or otherwise, and may be coated with a vinyl or other coating for increased durability.

[92] Fig. 11 is a flow diagram illustrating a user flow associated with a user interface in accordance with some examples herein. Although the user flow in Fig. 11 is described here with reference to exercise system 1000 and user interface 500, one or more aspects of the user flow may be applicable to other exercise systems and user interfaces according to the present disclosure. The user flow 1100 is described with reference also to Figs. 12-17, which illustrate user interface elements associated with various processes according to the present disclosure. The various elements shown in Figs. 11-17 are merely illustrative, and other variations, including eliminating, combining, rearranging, and substituting elements are all contemplated

[93] The user interface may be operable to enable a user to configure certain functions of the exercise system, such as certain aspect of the user interface or settings of the exercise machine. The exercise system 1000 may be configured to store user data such as one or more user profiles. A user profile may include user information (e.g., weight, age, gender, burned-calories target, stored workouts which may include totals of time, work, and burned calories for previous completed workouts, and other information). The user profile may also include default settings that may be applied before or during a workout. For example, a default program may be selected if a user initiates a workout (e.g., presses the start button or pulls on a cable) without selecting a program. Default settings may also be applied automatically by the exercise

system during a workout, for example to automatically adjust the resistance during one or more segments of the workout. Manipulating one or more of the user controls of user interface 500 may enable a user to create and/or edit a user profile, select one of a plurality of stored user profiles, select, start, pause, restart and/or terminate a workout program and/or adjust settings during a workout program.

[94] A user profile may be updated by the user, such as via a user profile edit process, or automatically by the system during a workout. For example, if a user modifies the resistance during the workout, the system may update the user profile to store the modified resistance as the default resistance for that segment in the workout program. If a user adds time to a selected sequence, the default sequence in the user's profile may be updated to correspond to the modified sequence (e.g., to include the additional time), such that next time the user defaults are invoked, the user's default sequence already includes the additional time. Of course, one or more of these default settings may be overridden by the user during a workout e.g., via operation of one or more user controls of the user interface.

[95] As shown in block 1102, when the exercise machine is powered up for the first time, the system (e.g., exercise system 1000) may enter a setup state 1001. The system may automatically execute a setup process (see Fig. 12, which illustrates user interface elements associated with an example setup process 1200). During the setup process the user interface may prompt the user to create a user profile. At the end of the setup process, the system may enter a pre-workout state 1003, in which the system may automatically select a default workout such that the user can begin to work out without having to make any further selections. During the pre-workout state 1003, the user can select another workout or initiate the default workout. The user may also select another user, assuming multiple user profiles have already been created and stored. After the initial set-up, the exercise system may enter the pre-workout state 1003 when the system powered up. When a workout program is initiated, the system may enter a workout state 1005. During the workout state 1005, the system may provide exercise guidance and record user data. Buffered user data (e.g., workout metrics, biometrics, etc.) may be automatically stored in memory periodically (e.g., every 1 minute, every 2 or more minutes) depending on user profile setting. Following the completion of a workout, the system may provide a workout summary and then return to the pre-workout state 1003.

[96] Referring now also to Fig 12, an example setup process 1200 is described. An example setup process 1200 may include the steps of activating one or more user interface elements which may include displaying a welcome message and displaying a profile setup prompt, receiving user input to the profile setup prompt, proceeding to user profile edit process

responsive to a confirmatory user input, and exiting the setup process responsive to a non-confirmatory user input.

[97] During the setup process 1200, one or more of the user interface elements may activate for an aesthetic purpose, such as to display an aesthetic light pattern with the lights 522, and/or for a functional purpose, such as to guide the user through the setup process. In some examples, one or more of the display elements (e.g., display element 511) may active to display one or more welcome messages 1202-1, 1202-2 (e.g., “Thank you for choosing...”, or “Welcome to...”), which may be followed by one or more instructions or prompts 1204, for example for setting up a user profile. Messages and/or instructions may be provided via visual and/or audible elements of the user interface. In some examples, prompts 1204 may be displayed along with a default selection and the user may provide user input by operating one or more user controls. For example, the user may confirm the default selection such as by pressing button, or scroll to another of a plurality of available selections and then confirm the user specified selection. In other examples, the user interface may be configured to receive direct user input, such as via a text input UI element, or through speech recognition of audible input.

[98] As shown in block 1208, the setup process 1200 may terminate without performing a user profile edit process 1210, in which case the user flow 1100 may proceed to a workout program selection process, which may start at block 1130. The system may be configured to terminate the setup process responsive to receiving an indication to terminate setup, as shown in block 1207. For example, the system may be configured to terminate the setup process 1200 responsive to a selection of a predetermined user control such as the pause/stop button 523, or another button such as an EXIT, CANCEL, or END button (not shown), at any time during the setup process. In some examples, the user interface may display a profile setup prompt 1204-1 and the system may be configured to terminate the setup process responsive to a non-confirmatory user input. For example, the user interface may be configured to receive a user input responsive to the profile setup prompt, such as a confirmation to proceed with profile setup. In some example, the system may be configured to terminate the setup process 1200 responsive to lack of user input for a predetermined period of time (e.g., 2 seconds, 3 seconds, 4 seconds, or other period of time). The user interface 500 may display a message 1206-1 indicating that setup has been completed.

[99] A user profile edit process may be initiated during the setup process 1200 as described above, or at a later time, such as during a user selection process, which may start a block 1116. As described, the user interface 500 may be configured to enable the user to select

one of the stored user profiles. For example, as shown in block 1118, the user may press the user button 516, or operate another type of user control, to select one of a plurality of stored user profiles as shown in blocks 1120. After selecting one of the stored profiles, the user may initiate a user profile edit process by operating one or more user controls in a predetermined manner. As shown in block 1104, the user profile edit process 1210 may be initiated responsive to pressing and holding the user button for a period of time (e.g., 2 seconds, 3 seconds, or other). To that end, the user interface 500 may be configured to display a prompt 1204-8 to inform the user how to initiate the user profile edit process in order to edit the selected profile. Responsive to user input corresponding to the instruction 1204-8, the work flow may proceed to the user profile edit process. The user may edit any of the stored profiles by scrolling to that profile (or selecting the profile via dedicated one of a plurality of user buttons) and initiating the user profile edit process.

[100] During a user profile edit process, the user interface 500 may display a plurality of prompts (e.g., prompts 1204-2, 1204-3, 1204-4, and 1204-5) and receive user input to the prompts. The user input may confirm a default value or specify a modified value for one or more of the profile parameters (e.g., units as shown in block 1106, user weight as shown in block 1108, auto-adjust resistance function enabled as shown in block 1110, save workouts function enabled as shown in block 1112, etc.). The user may confirm a selection (e.g., a default value, a modified value) by pressing a button (e.g., pressing the resistance dial as shown in blocks 1114). The user profile edit process may be terminated at any time during the process by operating a predetermined user control (e.g., pressing the pause/stop button 523, an EXIT button, a CANCEL button, an END button, or operating another user control).

[101] During a pre-workout state of the exercise system, the user interface may enable to user to select a workout program and/or make modifications to the selected workout program. Figs. 13A and 13B show user interface elements associated with a program selection process which may start at block 1130 of the user flow 1100. An example program selection process may include the step of displaying a default workout program (e.g., manufacturing default program or a user profile default program), which may include displaying a preview of the default program. The program selection process may include receiving a user selection of a different workout program, displaying a preview of the selected workout program, and displaying a prompt to initiate the workout program. In some examples, the process may include receiving user input to modify the selected program (e.g., add time or change resistance).

[102] The program selection process may start with displaying a default workout program, For example, as shown in block 1310 of FIG. 13A, the exercise indicators for all segments in the

selected sequence may be activated, such that the user may visualize the full workout. Additionally or alternatively, a name of the selected sequence may be displayed on the user interface (e.g., via display element 1315) and the sequence time may be displayed (e.g., via display element 1311). The default workout program may be a manufacturing default program (e.g., a default sequence provided by the manufacturer). The default workout program may be based on the selected user profile (e.g., a sequence selected as a default sequence by a user or the last performed sequence by that user). In some examples, displaying a default workout program may include displaying a preview of the default workout program. As shown in block 1320 and 1330, the user interface may be configured to display a preview of the default workout program by cycling through the timers associated with the workout program. For example, for the illustrated default program Sprint, the user interface may illuminate the pattern of lights in block 1320 (i.e., all eight rows of the first four columns are illuminated while the remaining lights are not illuminated). The user interface may also display the timers associated with the Sprint program starting with a work timer of 20 seconds, cycling to a rest timer of 10 seconds and then to a break timer of 60 seconds as shown in block 1330. The user interface may cycle through the timers at a predetermined frequency (e.g., every 2 seconds, every 3 seconds, or another). The user interface may be configured to display a preview until the user makes a selection or initiates the program.

[103] The user interface may be configured to enable the user to select any of a plurality of workout programs 1140, such as by pressing the program button corresponding to a desired program. Responsive to a selection of another program (e.g., Circuit, Builder, or Manual program as shown in block 1340), the user interface may display a preview of the selected program, in a similar manner as described above, such as by illuminating the lights associated with all segments in the sequence and cycling through the timers associated with a respective sequence.

[104] During the program selection process, the user may modify the selected program, for example by adding time to the selected program by pressing the add time button (block 1142) or changing the resistance by operating the resistance dial (block 1144). The user may initiate the selected program by pressing the start button (block 1146). The user interface may be configured to enable the user to select an unguided workout program (i.e., manual program) by pressing the manual program button or operating another user control. As shown in user flow 1100, the user may adjust the resistance for a manual program but may not add time as the manual program typically is not associated with a predetermined sequence time. In some examples, the user interface may be configured to display a prompt to the user to initiate the

workout program. For example, the user interface may cycle through displaying the name of the selected program with a message (e.g., “Press start to begin your workout”) in display element 515.

[105] Fig 13B illustrates user interface elements for four exemplary programs, overlaid for illustration only, with an arrow pattern showing path of the sequence of activation of lights. In the examples illustrated in Fig. 13B, the Sprint workout program (block 1350) includes 4 rounds, each round including 4 reps of a pair of exercises. Each rep lasts 20 seconds and a 10 second rest period is provided between each rep with a break period of 60 seconds between rounds, for a total workout time of about 18 minutes and 20 seconds. The lights in this sequence are activated in a zig-zag pattern within each round, with each rep, as indicated by each light, followed by a rest period and each round followed by a break period. The Circuit workout program (block 1352) includes 4 rounds, each round including 1 rep of each of the eight unique exercises each rep lasting 25 seconds, a rest period of 15 seconds is provided between each rep and a break period of 20 seconds is provided between rounds, for a total work time of about 21 minutes. In this sequence, the lights are activated sequentially from top to bottom until all lights in a column have been activated which corresponds to the completion of each round.

[106] The Builder workout program (block 1354) includes 8 rounds, starting with the first round in which the user is guided to perform one 30 sec rep of the first exercise (as indicated by the single light in the left most column) followed by a break of 30 seconds. The first round is followed by a second round which includes one 30 second rep of the first exercise (1 first row) followed by one 30 second rep of a second exercise (as indicated by the two lights in the second column) without a rest period between reps. A 30 second break is provided after the second round which is followed by a third round that starts again with a 30 rep of first exercise in the first row followed by reps for each of the exercises in the second and third rows, without a rest period in between. A 30 second break is provided again after the third round and the sequence continues by adding one new exercise to the pyramid in each subsequent round until all 8 rounds have been performed. Rest periods are not provided between reps while 30 second breaks are provided between each round, for a total workout time of about 21.5 minutes. In this sequence, the lights are activated in a step pattern from left to right, with each round building up an additional exercise until all eight rounds have been completed.

[107] The Manual workout program (block 1356), may be an unguided workout in which the user is not provided guidance of exercises to perform and the user interface may function to simply track the workout metrics for the duration that the user elects to work out. The user interface may be configured to track a Manual work out of up to 99:59 minutes, in some

examples. In the Manual mode, the exercise indicators may activate randomly or in a predetermined manner purely for ornamental reasons. Examples of user interface elements associated with a Manual program are illustrated in Fig. 15. As shown in block 1510, initially the exercise display area may be inactive (e.g., it may not be illuminated), while one or more elements of the information display area may be active so as to display workout metrics as the user progresses through the workout. A work timer (block 1520) may be active while the user is performing exercises. In some examples, the work timer activation and deactivation may be automatic based on detected cable motion. In some examples, the activation and deactivation of the work timer may be controlled by the user such as by pressing the start button to activate the work timer and pressing the pause/stop button to deactivate the work timer. When the work timer is deactivated, a rest timer (block 1530) is activated and remains active until the next work period. During the workout, continuously or periodically (e.g., every 3, 4, 5 minutes or other), one or more lights in the array may illuminate in a pattern which may be pleasing to the user. The pattern may illuminate in regular intervals, which may enable the user to track time without referring to the timers. In some examples, the lights may illuminate in the same pattern or different patterns over time. In some examples, the illumination of lights may be accompanied, preceded or followed by one or more sounds.

[108] Referring back to Fig. 14, after initiating a workout program, the system may enter a workout state during which the user interface may guide the user through the selected exercise program. Fig. 14 illustrates user interface elements at various stages during an exercise program according to one embodiment. In the example in Fig. 14, a Sprint program is selected and the user interface operates to activate and deactivate exercise indicators 510 in accordance with the selected program. For example, at the initiation of the program all of the exercise indicators associated with the selected program may be illuminated (see block 1410). The user interface may provide visual feedback about selected settings. For example, the user button may be illuminated to indicate which user profile is active. In some examples, the program button corresponding to the selected program may be illuminated to indicate which workout program has been selected. Alternatively or additionally, a display element (e.g., display element 1415) may indicate the selected program.

[109] The user interface may indicate user controls that are operable to modify the selected program during the workout. For example, the resistance dial may be illuminated to indicate that the user can change resistance during the workout. However, the active user controls need not be illuminated in some examples. That is, one or more of the user controls (e.g., pause/stop button, add time button, volume button) may not be illuminated and may nevertheless be

operable to effect a change during a workout. As one or more segments are completed, the user interface deactivates the corresponding lights (see blocks 1420, 1430, 1440). For example, block 1420 shows a snapshot in time of the user interface at the start of a work period (interchangeably referred to as work interval). As shown, the work timer is active and shows the full amount of time remaining for the work period, which will be counted down as the user performs the exercises, block 1430 shows a snapshot in time of the user interface at the start of the rest period that follows the work interval in block 1420. As shown, the rest timer is active and shows the amount of time associated with the rest period, Block 1440 shows a snapshot in time of the user interface at the start of the break period that follows the first round of the program. As shown, the break timer is active and shows the amount of remaining time associated with the break period,

[110] Referring back to Fig. 11, the user interface may enable the user to change the resistance as shown in block 1152, to modify the workout program (e.g., add time as shown in block 1154), or to pause the workout program or end the program prior to its completion. As shown in the user flow 1100, the program may be paused (see block 1160) responsive to pressing the pause/stop button once (see block 1150) during the workout (see block 1148). The paused program may be re-started responsive to pressing the start button (see block 1156), or another button such as pressing the selected program button, or the resistance dial. In some examples, the system may be configured to receive an indication of movement of any of the cables and may automatically re-start the program responsive to a pull of a cable (see block 1156). In some examples, the system may be configured to end the program responsive to pressing the pause/stop button a second time (block 1162).

[111] The system may be configured to automatically save the user's workout metrics, as shown in block 1164. In some examples, the system may be configured to automatically save the user's workout metrics only if the workout duration exceeds a predetermined workout length (e.g., workout metrics for workouts longer than 1 minute are automatically saved while workout metrics for workouts shorter than 1 minute are not automatically saved). The auto-save function may be user-configurable. The user interface may be configured to display a workout summary, as shown in block 1170. The system may return to the pre-workout state 1003 responsive to user input (e.g., pressing the pause/stop button) or responsive to lack of user input for a predetermined duration of time (e.g., 3 minutes, 4 minutes, 5 minutes, or other duration of time). In the pre-workout state, the user interface may remain active (e.g., displaying information and/or being operable to receive user input) for a period of time (e.g., 4 minutes, 5 minutes, 6 minutes, or other period of time), after which the user interface may enter a standby mode for

example to preserve power by deactivating (e.g., turning off) one or more UI elements, as shown in blocks 1130, 1132, and 1134. As shown in block 1136, operating a specific user control, or in some examples, any of the user controls may return the user interface to active mode. In some examples, a detected movement of a cable may re-activate the user interface. The user flow may return to block 1130 from any function after inactivity (e.g., lack of user inputs) for a predetermined period of time (e.g., 4 minutes, 5 minutes, 6 minutes, or other period of time).

[112] Fig. 16 is an illustration of user interface elements associated with a paused workout program. The user interface may enable the user to manually pause a workout program for example by pressing the pause/stop button. Responsive to pressing the pause/stop button during a workout program (as shown in block 1610), the user interface may be configured to provide a mid-program summary. For example, instead of displaying the remaining exercise segments (e.g., lights for remaining reps), the user interface may activate the lights associated with the segments (see block 1620). Additionally, or alternatively, the user interface may display total workout metrics for the completed portion of the workout program.

[113] The user interface may be configured to enable a user to reset the user interface by operating one or more user controls in a predetermined manner. Referring back to the example in Fig. 11, a reset process may be initiated by pressing and holding the pause/stop button 523 together with the add time button 527 for a period of time (e.g., 2 seconds, 3 seconds, 4 seconds, or more), as shown in block 1184. During the reset process, the user interface may display a reset menu (block 1180) which may display machine, software, and/or firmware information and a prompt for confirmation to proceed with the reset. The user interface may receive confirmation responsive to the user operating a predetermined user control (e.g., pressing the dial as in block 1182) and complete the reset process. At the completion of the reset process, all user configured settings may be deleted and the system returned to its manufacturing settings. For example, any user profiles previously created and stored may be deleted. Thus, on startup of the system following a reset process, the system may proceed to the setup process 1200 previously described.

[114] Fig. 17 is a front view of an exercise machine 1700 according to an embodiment. The exercise machine 1700 may include some or all of the components of the exercise machine 100 in Fig. 1. For example, the exercise machine 1700 includes a frame 1702 and a cable and pulley system (e.g., cable and pulley system 120), which is operatively associated with the frame 1702. The exercise machine 1700 includes handles 1710, which may be removably connected to one or more connection points of the cable and pulley system to enable a user to apply a pull force on one or more of the cables. The exercise machine 1700 includes a

resistance assembly (not shown in this view) which is operatively associated with the frame 1702 and the cable and pulley system to apply resistance to movement of the cables. The resistance assembly and the cable and pulley system may be at least partially enclosed by an enclosure 1750.

[115] The frame 1702 may include a tower 1704 and a base 1706 adjacent to the tower 1704. In some examples, the base 1706 may adjoin a side of the tower 1704. In other examples, the base 1706 may at least partially extend below and support the tower 1704. The tower 1704 may extend vertically from the base 1706. In some examples, the tower 1704 may be substantially perpendicular to the base 1706. The base 1706 may be configured to provide a support surface for a user.

[116] The exercise machine 1700 may include one or more hand grips 1746, which may extend from the tower 1704. In some examples, one or more oblique handle bars 1748 may extend between the tower 1704 and base 1706. The hand grips and/or handle bars may be implemented using tubular members. The tubular members may be arranged at suitable locations along the tower and/or base to provide a convenient location for a user to grasp e.g., to stabilize himself while performing an exercise. In some embodiments, the handle bars 1748 may be equipped with one or more handle clips 1749 for securing the handles 1710 when not in use. Additionally or optionally, handle clips may be provided elsewhere, such as on the base 1706, the tower 1704, or arms (not numbered) extending from the tower.

[117] Fig. 17 illustrates an embodiment of a media holder, which can be incorporated in an exercise machine such as exercise machine 1700. Figs. 18A and 18B are partial isometric views of the exercise machine in Fig. 17 and show close up views of the media holder 1800. Figs. 19A and 19B show partial cross-sectional views of the media holder 1800. The media holder 1800 is configured to secure an object (e.g., a multi-media device such as a smart phone, a tablet computer, or a printed media object such as a book, an instruction manual, or other types of electronic or printed media, collectively referred to as media devices) to the exercise machine 1700. In this illustrated embodiment, the exercise machine 1700 includes a console 1780, which may be operable to change one or more settings (e.g., resistance, exercise mode, etc.) of the exercise machine 1700. The media holder 1800 in this embodiment is located next to the console 1780, specifically above the console 1780. In other embodiments, the media holder 1800 may be located elsewhere, such as below the console, adjacent to a side of the console, or elsewhere on the tower irrespective of whether the exercise machine includes a console. In further embodiments, the media holder 1800 may be provided on an extension arm, which may be articulating and/or proximate to the console.

[118] In some embodiments, the media device may complement the functionality of the console. For example, the media device may be a printed media object (e.g., an instruction manual), which may include exercise information that supplements information that is displayed via the console. In yet further embodiments, the media device may provide some or all of the functionality in place of a console. For example, the media device may be an electronic media device (e.g., a tablet), which may be configured to be communicatively coupled to the exercise machine and operable to execute a user interface as described herein. In such examples, the exercise machine may not include a console and certain functions of the exercise machine may be controlled, in part, by the electronic media device. The media holder 1800 may be adjustable to accommodate different types of media devices. In some embodiments, the media holder may be configurable into a first configuration for securing an electronic media device and further configurable into a second configuration for securing printed media (e.g., a spiral bound booklet as shown in Fig. 18B).

[119] The media holder 1800 includes a support structure, which is configured to at least partially support the media device (e.g., spiral bound booklet 1801) at a desired location on the exercise machine. The media holder 1800 further includes a securing structure, which is configured to retain the media device at the desired location such as to reduce or prevent movement of the media device during use of the exercise machine and/or the media device. In some embodiments, the securing structure may include one or more components which are movably coupled to the support structure to enable the media holder to accommodate devices of different shapes or sizes. The media holder may include a track which is associated with the support structure and the one or more components of the securing structure may be movably connected to the support structure via the track. In some embodiments the track may be in the form of one or more slots, rails, or combinations thereof.

[120] In the embodiment in Figs. 18-19 the media holder 1800 includes a support structure in the form of a media tray 1810. A base 1812 of the media tray 1810 provides a bottom support surface of the support structure and a back support member 1814 of the media tray 1810 provides a rear support surface of the support structure for supporting the media device in a desired location and orientation. The base 1812 and/or back support member 1814 may be integrally formed with the enclosure or they may be joined to the enclosure 1750 using known techniques. The media tray 1810 is generally vertically arranged such that the media device is supported in a generally upright orientation. By generally vertically arranged it is implied that the back 1814 of the media tray is generally perpendicular to the base 1812 or slightly inclined (e.g., up to about 35 degrees) from the perpendicular. In other embodiments greater incline

maybe used depending on the location of the media tray on the frame 1702 and/or based on the expected position of the user during use of the machine.

[121] In some embodiments, the media tray 1810, or a portion thereof, may be part of the enclosure 1750. For example, the base 1812 and/or the back support member 1814 may be provided by one or more surfaces of the enclosure (e.g., surfaces defining a recess in a portion of the enclosure 1750 such as above console 1780). In other embodiments, the media tray 1810, or a portion thereof, may be joined to the enclosure 1750. In some embodiments, the media tray 1810, or a portion thereof, may be movably joined to the enclosure 1750.

[122] In the illustrated embodiment, the back support member 1814 is provided by a movable cover plate 1826. The movable cover plate 1826 may be movably and in some cases pivotally connected to the frame 1702 to provide access to a storage compartment 1752 located behind the back support member 1814. In the illustrated embodiment, the cover plate 1826 is pivotally connected to the enclosure 1750 along a top edge of the cover plate 1826, as shown in FIG. 19. The cover plate 1826 is hingedly connected to the enclosure at hinge 1828 and is securable in a closed position via closure mechanism 1833 (e.g., one or more tabs received in one or more recesses along the bottom edge). In some embodiments, the cover plate 1826 may be removably connected to the frame, for example using one or more tabs along one end of the cover which are inserted into one or more recesses in the enclosure 1750, and a spring member at an opposite side of the cover to bias the tabs towards the recesses. The cover plate 1826, which may be made from a rigid plastic, metallic or composite material, may include a friction layer 1827, which may be provided as a coating of friction increasing material (e.g., a rubber coating) or a sheet of friction increasing material (e.g., a rubberized sheet) attached to the exposed side of the cover plate 1826. The friction layer 1827 may further reduce the risk of the media device falling from exercise machine by increasing the friction between the media device and the back support member 1814.

[123] A wall 1816 extends from the base 1812. The wall 1816 may be arranged generally vertically (e.g., perpendicular to the base 1812 or inclined from the perpendicular for example by the same or similar angle as the back support member 1814). In some examples, the wall 1816 and the back support member 1814 may be substantially parallel to one another. Spacing between the wall 1816 and back support member 1814 is selected to allow a media device to be positioned behind the wall 1816 (i.e., between the wall 1816 and the back support member 1814). The wall 1816 is set back from the front end of the base 1812 to allow a media device, or a portion thereof, to be positioned in front of the wall 1816. In some examples, the wall 1816 may be configured to support a media device at least partially on the wall itself (e.g., on a lip

extending from the wall), or straddling the wall. In some embodiments, the wall 1816 may include spaced apart wall portions (e.g., left and right wall portion 1816-1, 1816-2) in order to accommodate the spine or spiral binding of printed media. A base spike 1817 may be positioned in the gap between the wall portions 1816-1, 1816-2 for securing e.g., the spiral binding of a spiral-bound booklet 1801 as shown in FIG. 18B.

[124] The media holder 1800 includes a securing structure in the form of a movable member 1840. In the illustrated embodiment, the movable member 1840 is slidably engaged with the support structure and is thus interchangeably referred to as slider 1840. The slider 1840 is slidable within a slot 1830 formed in the movable cover plate 1826. Instead of a slot, the slider may be slidable along a rail provided on the support structure in other embodiments. Other mechanisms (e.g., magnetic, spring loaded, latched) may be used for the securing structure of the media holder.

[125] Referring now also to Figs. 20A and 20B, components and operation of an embodiment of a slider is described. Slider 1840 includes first and second flanges 1842, 1844, respectively, spaced apart and connected by a post 1846. A knob 1850 is connected to the second flange 1844. The knob 1850 includes a knob clip 1852 and knob spike 1854 extending from opposite sides of a knob shaft 1856. The knob spike 1854 is sized such that it can be inserted, at least partially, into the aperture defined by spiral binding 1803 of a spiral-bound booklet 1801. One or both of the spikes 1817 and 1854 may be tapered. The thickness of the knob spike 1854, and similarly of the base spike 1817, may be different along the length of each spike in order to accommodate spiral bindings of different diameter. That is, the thickness of each spike may be narrower at the free end and thus be insertable into a narrower binding, and wider at the attached end for securing wider bindings. The knob clip 1852 is configured to bias a media device towards the media tray 1810. The knob clip 1852 may include an end portion 1853 which is configured to resiliently deform (e.g., as shown by arrow 1851) to bias the media device towards the media tray 1810.

[126] The slider can be made (e.g., molded) from a plastic material, such as rubber. The slider may be frictionally retained in the slot 1830. When inserted into slot 1830 (see cross-sectional view in Fig. 21), the first and second flanges 1842, 1844 are positioned on opposite sides of the cover plate with the post 1846 passing through the slot 1830. The spacing between the flanges 1842, 1844 (i.e., the length of the post 1846) may be slightly less than the thickness of the plate 1826 (i.e., the depth of the slot) such that the flanges 1842, 1844 press against the portion of the cover plate 1826 which defines the slot 1830 and thereby frictionally retain the slider 1840 in the slot 1830. Additionally or alternatively, the post 1846 may be sized for an

interference fit within the slot 1830. For example, the post 1846 may have a diameter which is slightly greater than the width of the slot thereby resulting in friction between the walls of the slot 1830 and the post 1846. The friction applied by the flanges and/or post is low enough to allow the user to slide the slider 1840 along the slot 1830 but is sufficient to prevent the slider 1840 from moving absent user applied force. In this manner, the slider is frictionally retained in a desired position along the slot without the use of any biasing components (e.g., springs), which may provide a simpler, lower cost, and/or lower maintenance solution.

[127] In some embodiments, the movable member (e.g., slider 1840) may be removably connected to the support structure of the media holder, such as to enable replacement or interchangeability with differently shaped or sized movable members. Referring back to Figs. 18A and 19, the slot 1830 may include an opening 1832, for example at the bottom end of the slot. The opening 1832 may have a larger diameter than the diameter of the first flange 1842 to allow the slider 1840 to be pulled out of the slot 1830 when positioned at the location of the opening 1832. In other embodiments, the top and bottom flanges may instead be separable to allow removal of the slider 1840 from the slot 1830. The slider 1840 is operatively associated with the media tray 1810 of the media holder to enable re-configuration of the media holder 1810 between the first and second configurations. The slider 1840 may include markings to indicate the appropriate orientation of the slider associated with each of the configurations. For example, the top surface of the knob 1850 may include a first marking 1858-1 which is associated with the first configuration of the media holder 1800.

[128] During normal use, the user may grasp the knob 1850 to rotate the slider 1840 within the slot 1830 and to orient the slider 1840 in accordance with the first marking 1858-1 (e.g., to point the arrow of the first marking downward towards the base of the support structure) in order to provide the media holder in the first configuration for securing a first type of media device (e.g., an electronic media device). A second marking 1858-2, which may be associated with the second configuration, may be provided opposite the first marking 1858-1. During normal use, the user may rotate the slider 1840 within the slot 1830 to orient the slider 1840 in accordance with the second marking 1858-2 (e.g., to point the arrow of the second marking downward) in order to provide the media holder 1800 in the second configuration for securing a second type of media device (e.g., printed media). In some embodiments, the media holder 1800 may be configured to secure additional types of media devices and the slider 1840 may thus include additional markings. For example, a third marking may be provided which instructs the user to orient the slider in a third orientation with respect to the support structure (e.g., orthogonal to the

first and second orientations) to secure yet another type of a media device. Additional securing features for such configurations may be provided along other sides of the knob.

[129] To secure a first type of media device, for example electronic media device, the slider 1840 is rotated such that the clip 1852 points down towards the base 1812 of the media tray 1810. The media device is placed in the media tray e.g., resting against the base 1812 and back support member 1814. The media device may be placed behind the wall 1816 to reduce movement of the bottom end of the media device and thereby reduce the risk of the media device falling from the exercise machine. The slider 1840 is then moved downward along the slot to position at least part of the clip 1852 over a top portion of the media device securing the media device in the media holder. For a relatively thinner media device, the slider may be moved downward until the knob shaft 1856 substantially abuts the media device. For a relatively thicker media device, the clip 1852 may deform to bias the media device towards the back support member 1814 but the top of the media device need not contact the knob shaft 1856 to secure the media device.

[130] To secure a second type of media device, for example printed media object in the form of a spiral-bound booklet 1801 (as shown in Fig. 18B), the slider 1840 is rotated with the knob spike 1854 pointing down towards the base 1812. The spiral-bound booklet 1801 is placed in the media tray e.g., with the spiral-bound booklet 1810 resting on the base 1812 and the base spike 1817 inserted into the bottom opening defined by the spiral binding 1803 of the booklet. The pages of the spiral-bound booklet 1801 may be positioned in front of the wall 1816 to enable the user to turn the pages without having to remove the booklet from the media holder. The slider 1840 is then moved downward along the slot 1830 to secure the spiral-bound booklet 1801 in the media holder 1800. The slider 1840 is moved down until the knob spike 1854 is inserted into the top opening defined by the spiral binding 1803 of the booklet thus securing the booklet in place. Printed media without spiral binding may also be secured in the media holder, for example by inserting the base and media spikes between the cover and the spine of a book or by placing the spikes in front of the book at the fold between the pages of the book.

[131] As previously described, the base 1706 may be configured to provide a support surface for a user. In one embodiment (see Fig. 22), the support surface is provided by a platform 1760. The platform 1760 may include a plurality of interlocking slats 1900. The platform 1760 may be movably connected to the frame 1702. In other words, the platform 1760 and/or individual slats 1900 may not be rigidly connected to the frame but may instead be allowed to move slightly (e.g., side to side or forward and aft) when the machine is in use. In

the illustrated embodiment, the platform 1760 is designed to rest on a platform ledge 1762 of the base 1706. The base 1706 may include a plurality of beams 1705 joined together to form a support structure for the platform 1760 (also referred to as peripheral beam assembly). The peripheral beam assembly defines an opening that is sized to accommodate the platform 1760. The platform may be substantially flush with or sit slightly below the upper surface of the peripheral beam assembly. The platform ledge 1762 may be provided by shaping of the beams themselves, for example by a L-shaped depression extending along an inner side of one or more of the beams in the peripheral beam assembly. In other embodiments, an L-shaped bracket may be attached to the inner side of the beams to serve as the platform ledge 1762.

[132] In the illustrated embodiment, eight individual slats are joined in an interlocking manner to form the platform 1760. In other embodiments, a different number of slats may be used. In the illustrated embodiment, each slat 1900 has a generally trapezoidal shape, and the plurality of slats 1900 assemble into a platform 1760 having an irregular hexagonal shape. The individual slats may have different shapes in other embodiments depending on the overall shape of the platform 1760.

[133] Fig. 23 shows an isometric view of an individual slat 1900. The slat 1900 has first and second major sides 1902 and 1904, respectively. The first major sides 1902 of the assembled slats provide the support surface of the exercise machine. The first major side 1902 may include surface features 1903 (e.g., ribs, grooves, diamond tread) and/or a coating to improve traction. The second major sides 1904 may include features for attaching supports (e.g., rubber posts) to minimize deflection of the slats during use of the machine (e.g., when a user is standing on the platform). The slat 1900 includes first and second opposing minor sides 1906 and 1908, respectively, which include the interlocking features for assembling the slats 1900 into platform 1760. In this embodiment, the interlocking features include a lengthwise groove 1920 along one of the opposing minor sides 1906 and 1908, and a lengthwise projection 1922 along the other one of the opposing minor sides 1906 and 1908. The projection and groove are configured such that the projection of one slat fits within the groove of an adjacent slat. The projection and groove may be sized for an interference fit such that the slats 1900 may be held together frictionally to allow the platform 1760 to be assembled before joining the platform 1760 to the frame 1702. In other embodiments, the projection and groove may be sized for a clearance or tolerance fit and the platform may be assembled directly on the base by placing the slats individually and interlocking them to slats already on the base. In some embodiments that slats are configured such that with the platform assembled, the individual slats are movable relative to one another and the frame. In further embodiment, the interlocking features may

instead be upper and lower halves of a lap joint, which may or may not be securing by additional fasteners.

[134] The slats 1900 may have a substantially hollow interior provided by lengthwise channels 1916 which extend between the minor sides 1912 and 1914. The channels 1916 are defined by vertical ribs 1918, which provide structural support and reduce deflection of the upper major surface (e.g., surface 1902). The slats may be manufactured from a plastic or composite material (e.g., fiber reinforced plastic (FRP)) for example by known casting, molding, extrusion, or pultrusion processes. For example, the slats can molded or cast to their nearly final individual shapes and sizes. In other examples, individual slats may be cut to size from a larger extruded or pultruded part.

[135] All relative and directional references (including: upper, lower, upward, downward, left, right, leftward, rightward, top, bottom, side, above, below, front, middle, back, vertical, horizontal, and so forth) are given by way of example to aid the reader's understanding of the particular embodiments described herein. They should not be read to be requirements or limitations, particularly as to the position, orientation, or use unless specifically set forth in the claims. Connection references (e.g., attached, coupled, connected, joined, and the like) are to be construed broadly and may include intermediate members between a connection of elements and relative movement between elements. As such, connection references do not necessarily infer that two elements are directly connected and in fixed relation to each other, unless specifically set forth in the claims.

[136] Those skilled in the art will appreciate that the presently disclosed embodiments teach by way of example and not by limitation. Therefore, the matter contained in the above description or shown in the accompanying drawings should be interpreted as illustrative and not in a limiting sense. The following claims are intended to cover all generic and specific features described herein, as well as all statements of the scope of the present method and system, which, as a matter of language, might be said to fall there between.

CLAIMS

What is claimed is:

1. An exercise system including a user interface for an exercise machine, the user interface comprising:
 - an exercise display area configured to display an exercise sequence by activating one or more exercise indicators of a plurality of exercise indicators in a predetermined sequence; and
 - a control area comprising at least one mode control operable to change a sequence of activation of the one or more exercise indicators.
2. The exercise system of claim 1, wherein the exercise display area comprises a plurality of lights, each of which correspond to an exercise indicator of the plurality of exercise indicators.
3. The exercise system of claim 2, wherein the plurality of lights comprises at least two uniquely colored lights, each uniquely colored light associated with a same type of exercise.
4. The exercise system of claim 2 or 3, wherein the exercise display area comprises an array of lights arranged in m rows and n columns.
5. The exercise system of claim 4, wherein the exercise display area comprises a same number of rows and columns of lights.
6. The exercise system of claim 4 or 5, wherein the lights in each row have a same color.
7. The exercise system of any of claims 4-6, wherein the lights in each column have a different color.
8. The exercise system of any of claims 4-7, wherein the user interface is configured, responsive to a selection of a first mode, to activate all of the lights in one row before activating any lights in another row.
9. The exercise system of any of claims 4-8, wherein the user interface is configured, responsive to a selection of a second mode, to activate all of the lights in one column before activating any lights in another column.

10. The exercise system of any of claims 4-9, wherein the user interface is configured to activate all of the lights in one row followed by less than all of the lights in another row responsive to a selection of a third mode.
11. The exercise system of any of claims 1-10, wherein the user interface is configured to activate the plurality of exercise indicators in accordance with a plurality of predetermined sequences, each of which is configured to continue for a predetermined period of time.
12. The exercise system of claim 11, wherein all of the sequences of the plurality of predetermined sequences are configured to continue for a same period of time.
13. The exercise system of any of claims 1-12, wherein the user interface further comprises a pause control configured to temporarily suspend the sequence.
14. The exercise system of any of claims 1-13, wherein the user interface further comprises a timer configured to provide an indication of time associated with an exercise or a group of exercises, an indication of a rest period following the exercise or the group of exercises, or both.
15. The exercise system of claim 14, wherein the timer is a first timer configured to provide the indication of time associated with an exercise or a group of exercises, the user interface further comprising a second timer configured to provide the indication of the rest period following the exercise or the group of exercises.
16. The exercise system of any of claims 1-15, wherein the user interface is configured to activate one or more exercise indicators in accordance with a first sequence responsive to a selection of one of a plurality of modes, the user interface further configured to disengage the exercise display area responsive to a selection of another of a plurality of modes.
17. The exercise system of any of claims 1-16, wherein the user interface is associated with an exercise machine comprising a tower enclosing, at least partially, a cable and pulley system.

18. The exercise system of claim 17, further comprising the exercise machine, wherein the exercise machine further comprises a resistance motor operatively coupled to the cable and pulley system.
19. The exercise system of claim 18, wherein the exercise machine is configured to change a resistance provided by the resistance motor responsive to input received via the user interface.
20. The exercise system of claim 18 or 19, wherein the resistance motor comprises a fan and a flywheel driven by a common shaft.
21. The exercise system of claim 20, wherein the user interface further comprises a resistance control configured to select a level of resistance provided by the flywheel.
22. The exercise system of claim 17-21, further comprising the exercise machine, and wherein the user interface is provided on a console of the exercise machine.
23. The exercise system of claim 17-22, further comprising the exercise machine, and wherein the exercise display area, the control area, or both are located on the tower.
24. The exercise system of claim 17-23, further comprising the exercise machine, and wherein the user interface is provided, at least partially, on a console movably connected to the tower.
25. The exercise system of claim 1-16, further comprising:
 - an exercise machine comprising:
 - a cable and pulley system;
 - a resistance motor operatively engaged with the cable and pulley system;
 - and
 - a wireless communication interface for communicatively coupling the exercise machine to a portable computing device; and
 - non-transitory computer readable medium comprising executable instructions for providing the user interface on the portable computing device.
26. An exercise machine comprising:
 - a tower enclosing a cable and pulley system;
 - a base positioned adjacent to the tower;

a plurality of handles operatively coupled to the cable and pulley system and configured to extend from the tower; and

a resistance motor operatively coupled to the cable and pulley system and including a fan and a flywheel driven by a common shaft.

27. The exercise machine of claim 26, wherein the flywheel comprises an eddy current brake.
28. The exercise machine of claim 26 or 27, wherein the fan and the flywheel are coaxially aligned.
29. The exercise machine of any of claims 26-28, wherein the fan and the flywheel are coupled to the common shaft via respective one way clutches.
30. The exercise machine of any of claims 26-29, wherein at least one cable of the cable and pulley system is connected to a biasing system configured to return the plurality of handles to retracted positions in the absence of application of pulling force on the handles.
31. The exercise machine of any of claims 26-30, wherein the cable and pulley system comprises a plurality of cables routed through a plurality of pulleys to the resistance motor.
32. The exercise machine of any of claims 26-31, wherein the a plurality of handles includes left and right lower handles, left and right upper handles, each located above respective ones of the left and right lower handles, and left and right middle handles, each located between respective ones of the left and right upper and lower handles.
33. The exercise machine of claim 32, wherein the cable and pulley system comprises a first left cable connecting the left upper and middle handles, and a first right cable connecting the right upper and middle handles.
34. The exercise machine of claim 33, wherein the cable and pulley system further comprises a second left cable connecting the left lower handle to a fixed frame and a second right cable connecting the right lower handle to the fixed frame.

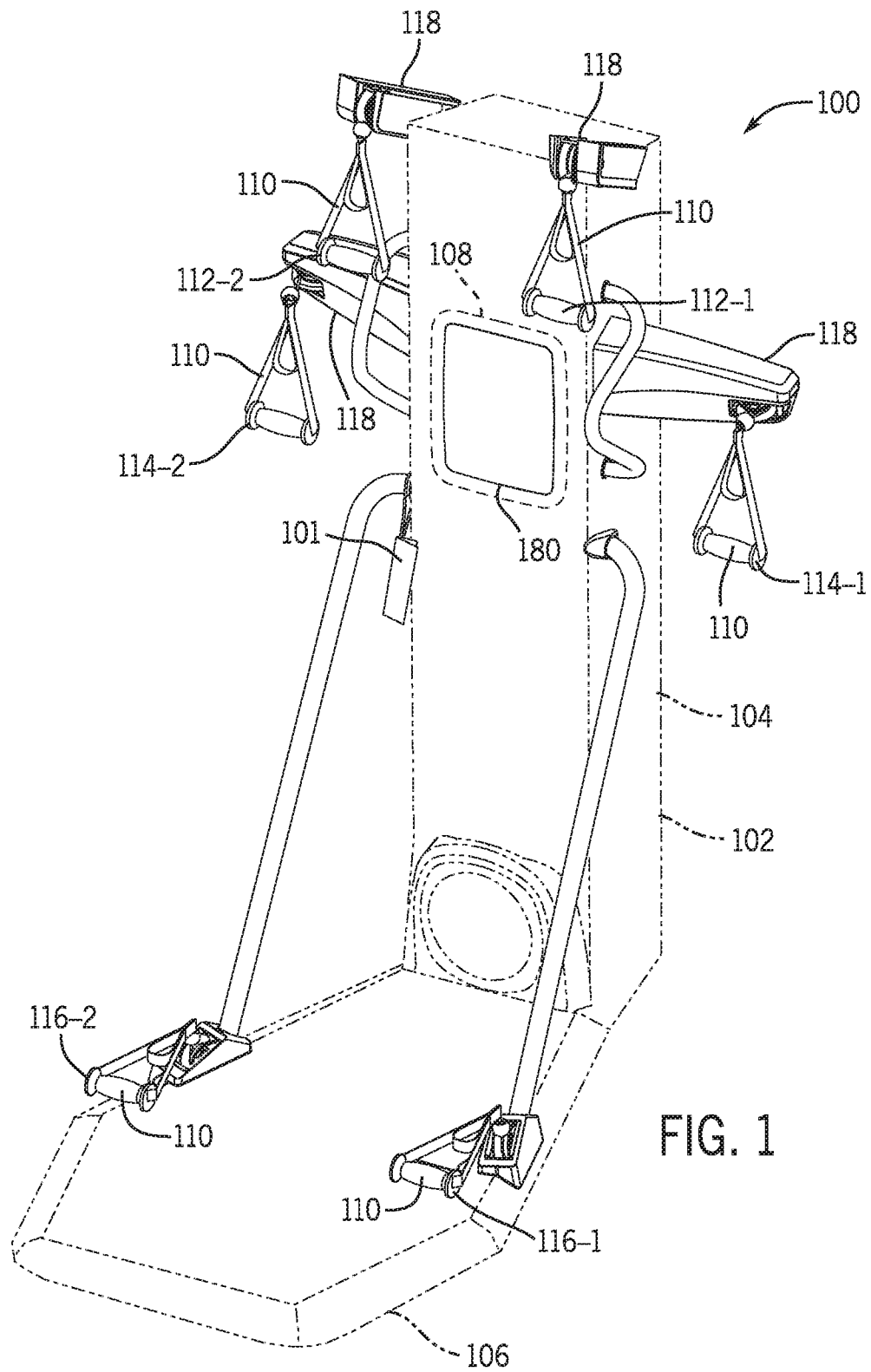
35. The exercise machine of claim 34, wherein the first and second cables are connected using floating pulleys.
36. The exercise machine of claim 34 or 35, wherein the second left and right cables are routed through the resistance motor.
37. The exercise machine of any of claims 34-36, further comprising at least one axially extendable member connected to the left and right second cables and the fixed frame.
38. The exercise machine of claim 37, wherein the at least one axially extendable member comprises a bungee cord connected to the second cables using floating pulleys.
39. The exercise machine of claim 37, wherein the axially extendable member is connected to each of the second cables at a location along the second cables between the resistance motor and respective anchor points of the second cables.
40. The exercise machine of any of claims 26-39, further comprising a user interface comprising:
 - an exercise display area configured to display an exercise sequence by activating one or more exercise indicators of a plurality of exercise indicators in a predetermined sequence; and
 - a control area comprising at least one mode control operable to change a sequence of activation of the one or more exercise indicators.
41. An exercise machine comprising:
 - a frame including a tower;
 - a resistance mechanism coupled to the frame;
 - a cable and pulley system coupled to the frame and operatively associated with the resistance mechanism; and
 - a media holder configured to secure a media device to the frame, wherein the media holder comprises a support structure, a track associated with the support structure, and a slider movably connected to the support structure via the track, wherein the slider is adjustable to multiple positions along a length of the track, and wherein the slider is configured to remain at any of the multiple positions by frictional force between the slider and the track.

42. The exercise machine of claim 41, wherein the support structure comprises a base and a back support member angled to the base, and
the slider is operatively coupled to the back support member to vary a distance between the slider and the base.
43. The exercise machine of claim 42, wherein the track is a vertical slot extending along a length of the back support member.
44. The exercise machine of claim 42, wherein the support structure includes a wall extending from the base.
45. The exercise machine of claim 42, wherein the slider includes a knob spike and wherein the media holder includes a base spike extending from the base and arranged in a same vertical plane as the knob spike.
46. The exercise machine of claim 45, wherein the support structure includes a wall extending from the base and wherein the base spike is located in a gap between left and right portions of the wall.
47. The exercise machine of claim 41, wherein the back support member is movably coupled to the frame.
48. The exercise machine of claim 47, wherein the back support member is pivotally coupled to the frame.
49. The exercise machine of claim 42, wherein the frame includes a storage compartment, and the back support member covers an opening of the storage compartment.
50. The exercise machine of claim 41, wherein the media holder is configurable in a first configuration for securing an electronic media device to the exercise machine and in a second configuration for securing a printed media to the exercise machine.
51. The exercise machine of claim 41, further comprising a console incorporated into the tower and wherein the media holder is adjacent the console.
52. An exercise machine comprising:
a frame including:
a tower; and

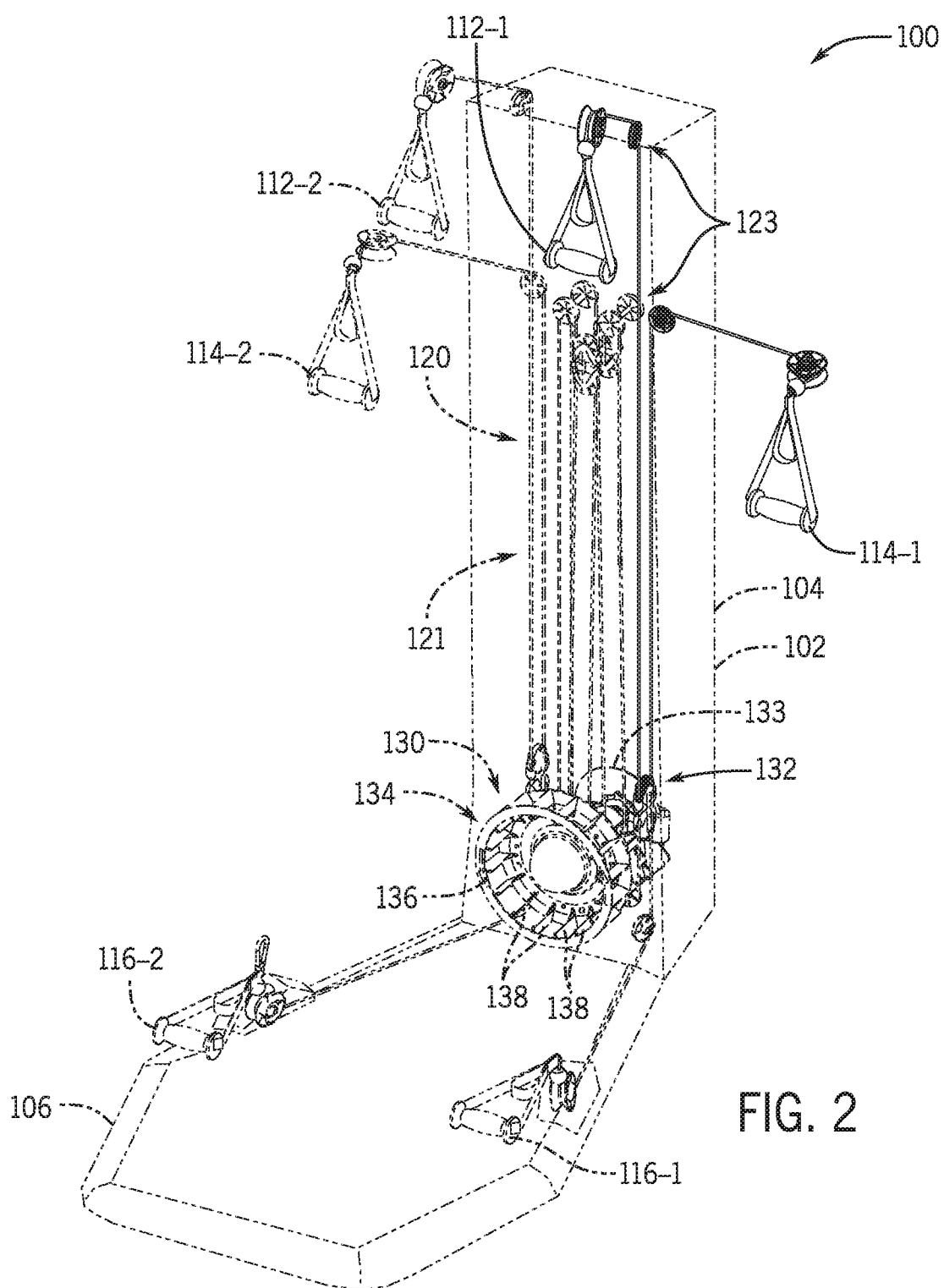
a base positioned adjacent to the tower;
a resistance mechanism coupled to the frame;
a cable and pulley system coupled to the frame and operatively associated with the resistance mechanism; and
a platform coupled to the base, the platform comprising a plurality of interlocking slats.

53. The exercise machine of claim 52, wherein the platform is supported within a recess defined by the base.
54. The exercise machine of claim 52, wherein the platform is laterally slidable relative to the base.
55. The exercise machine of claim 52, wherein the platform rests on a wall extending at least partially along an inner periphery of the base.
56. The exercise machine of claim 52, wherein the slats are movably coupled to the base.
57. The exercise machine of claim 52, wherein each of the slats has a hollow interior.
58. The exercise machine of claim 52, wherein each of the slats comprises a plurality of lengthwise channels.
59. The exercise machine of claim 52, wherein each of the slats is trapezoidal in shape.
60. The exercise machine of claim 52, wherein each of the interlocking slats comprises a protrusion extending lengthwise along one side of the slat and further comprises a groove extending lengthwise along an opposite side of the slat, the protrusion configured to fit in a groove of an adjacent slat.
61. The exercise machine of claim 52, wherein the upper surface of the slats, the lower surface of the slats, or both comprise surface features configured to increase friction.

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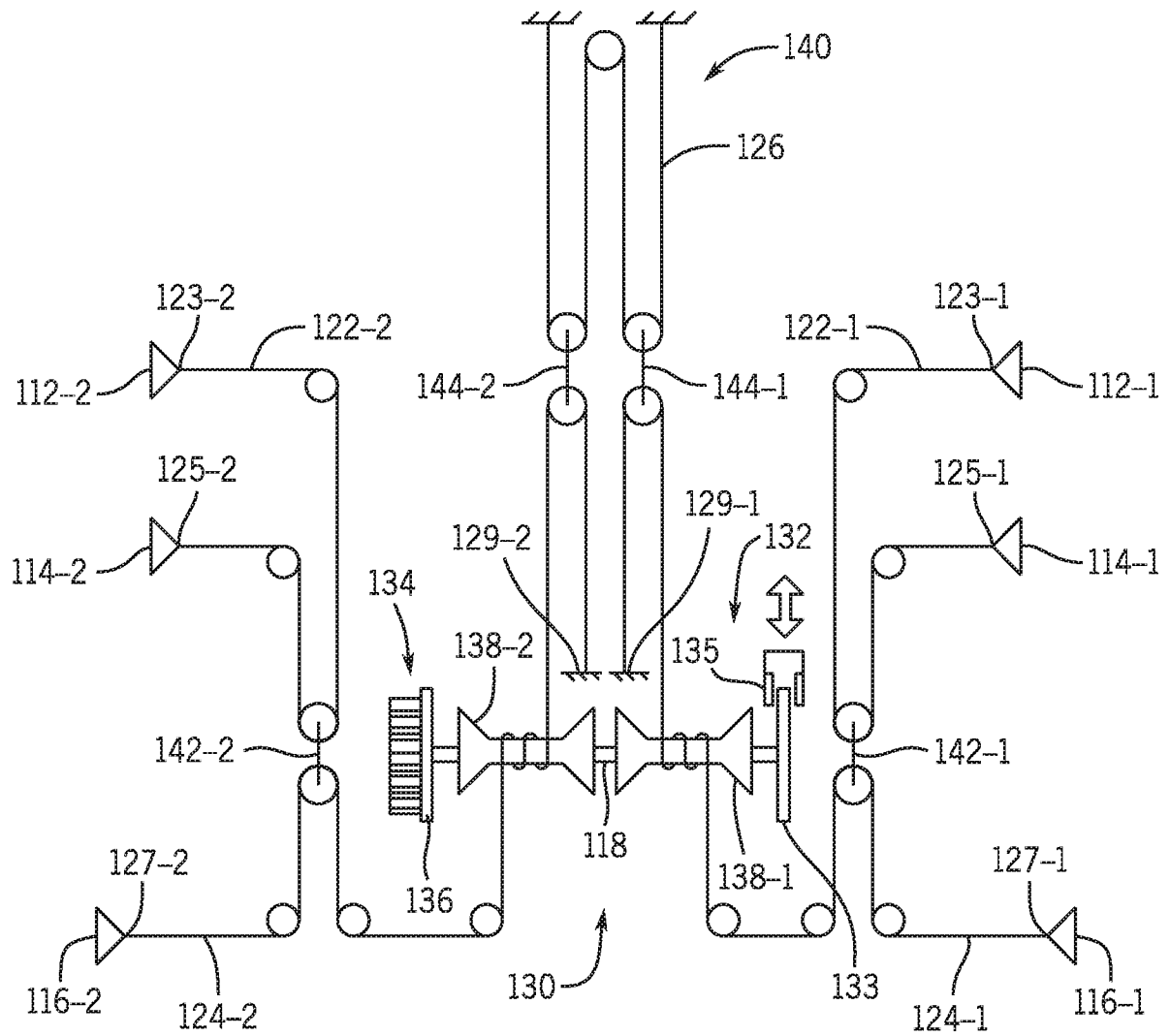


FIG. 3

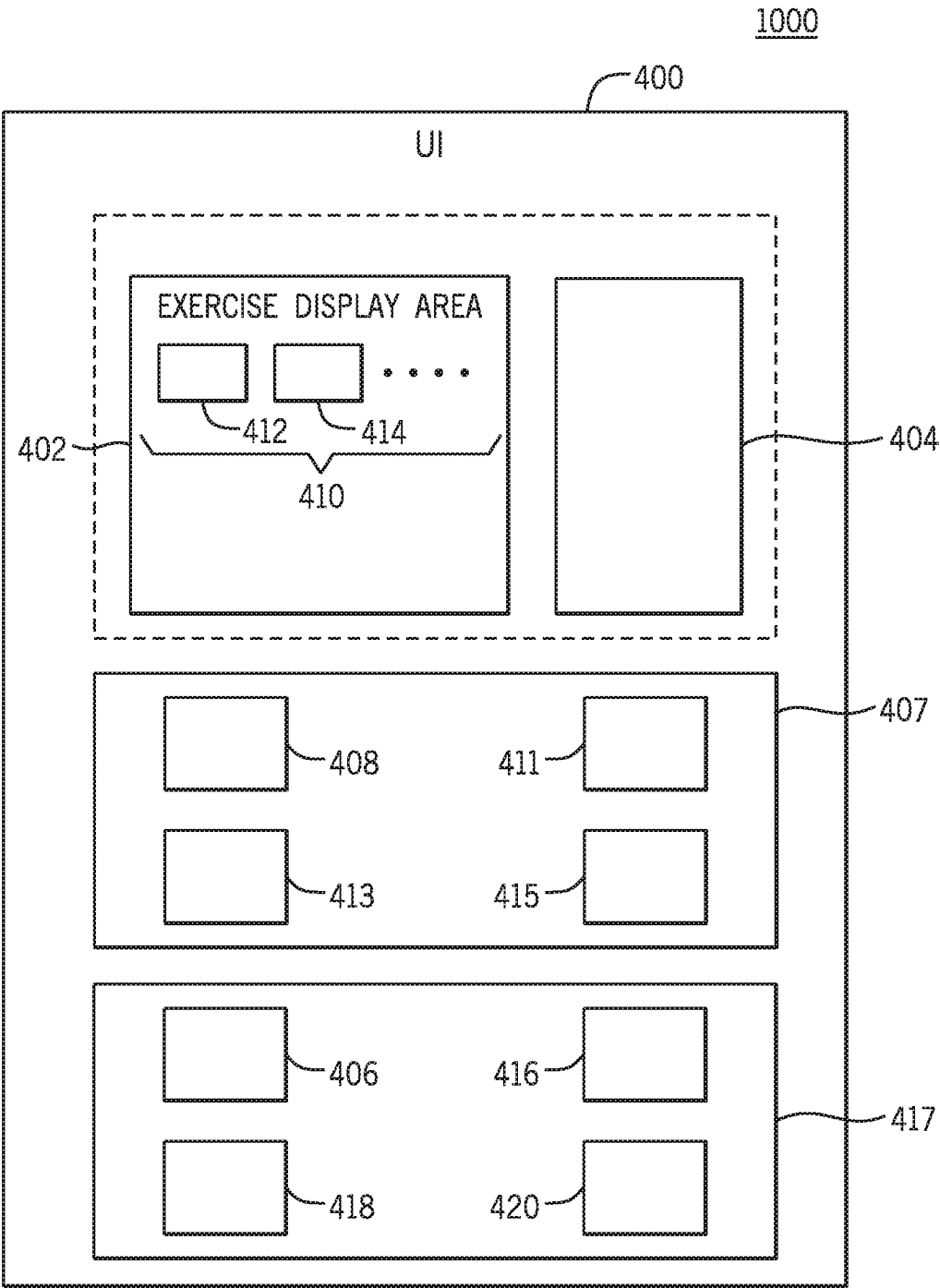


FIG. 4

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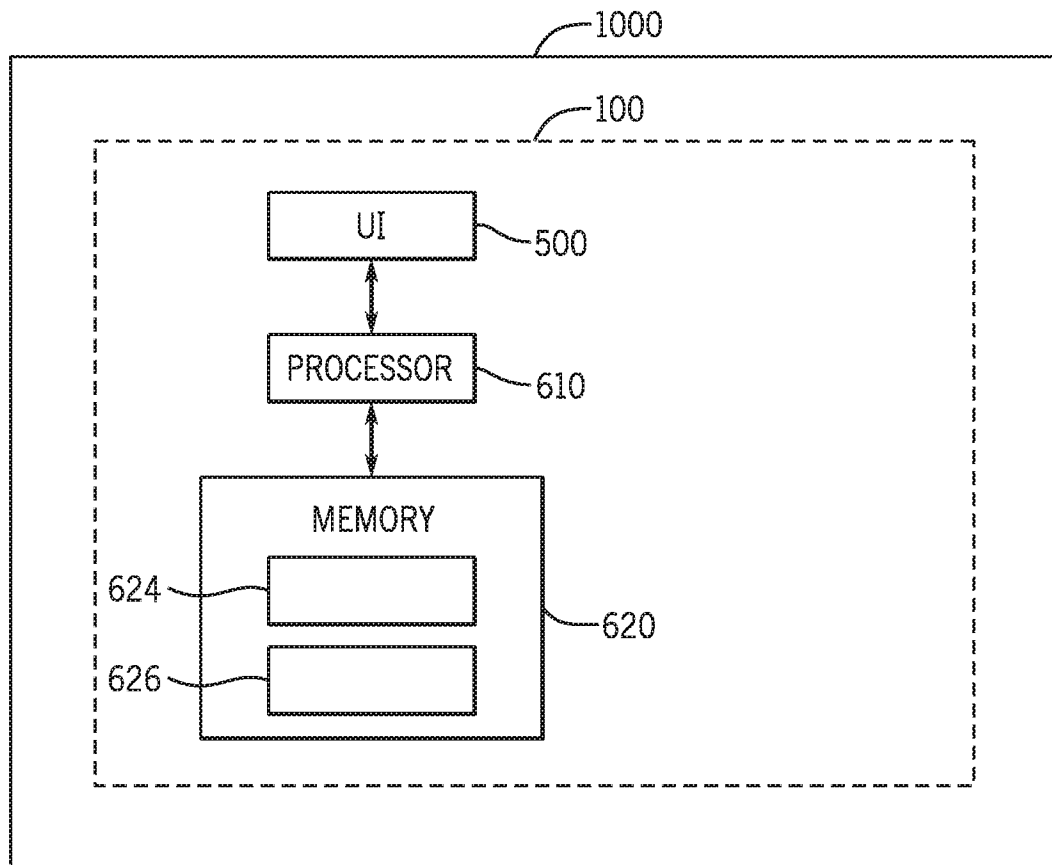


FIG. 5A

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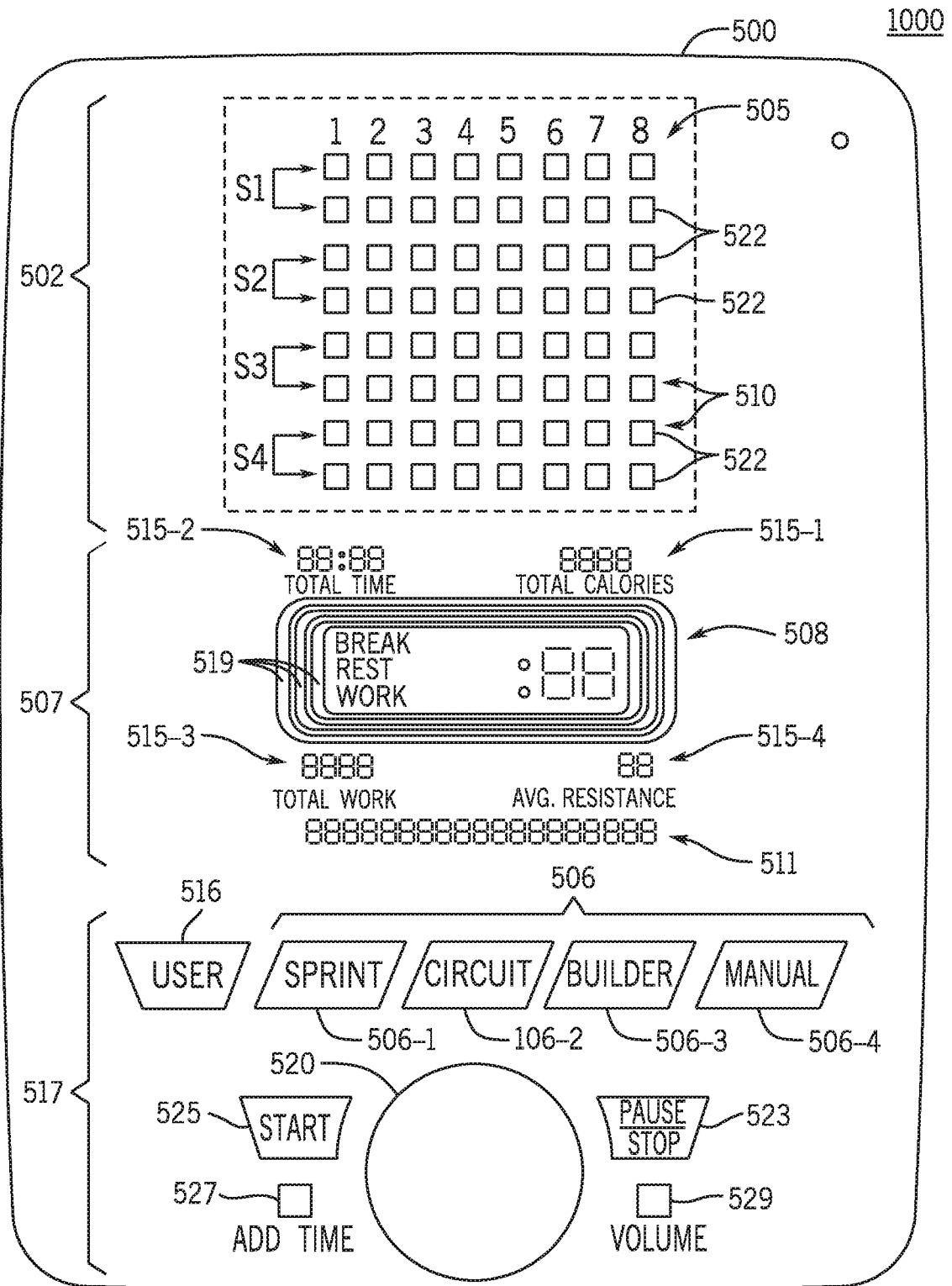


FIG. 5B

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FIG. 6

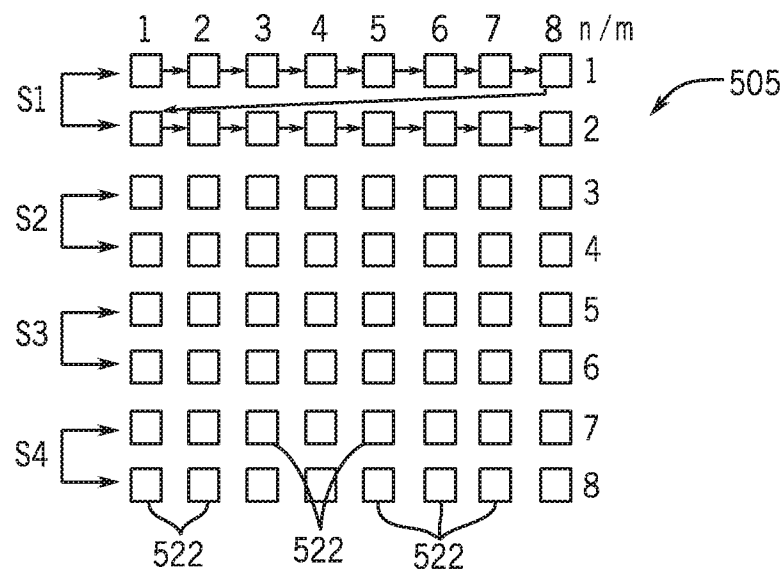


FIG. 7

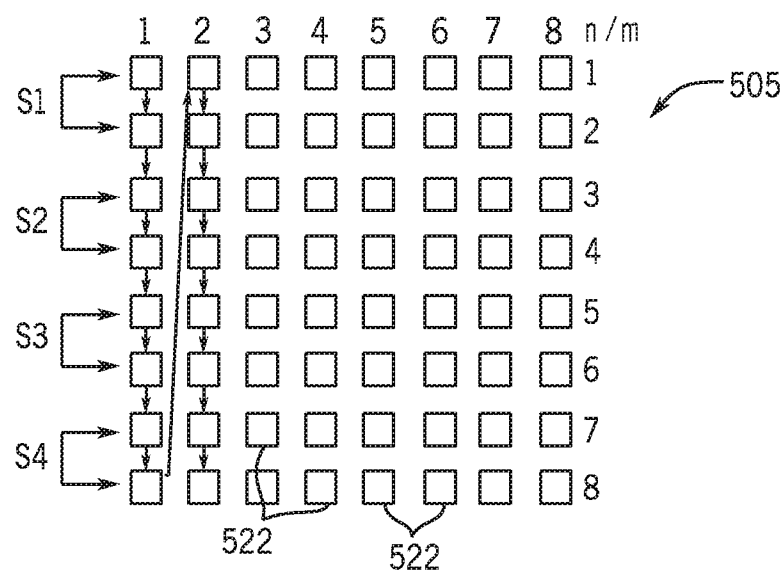
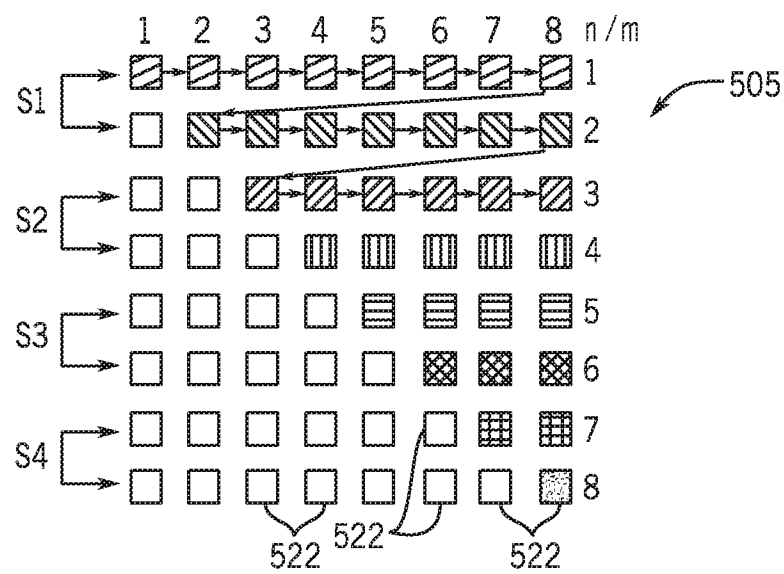


FIG. 8



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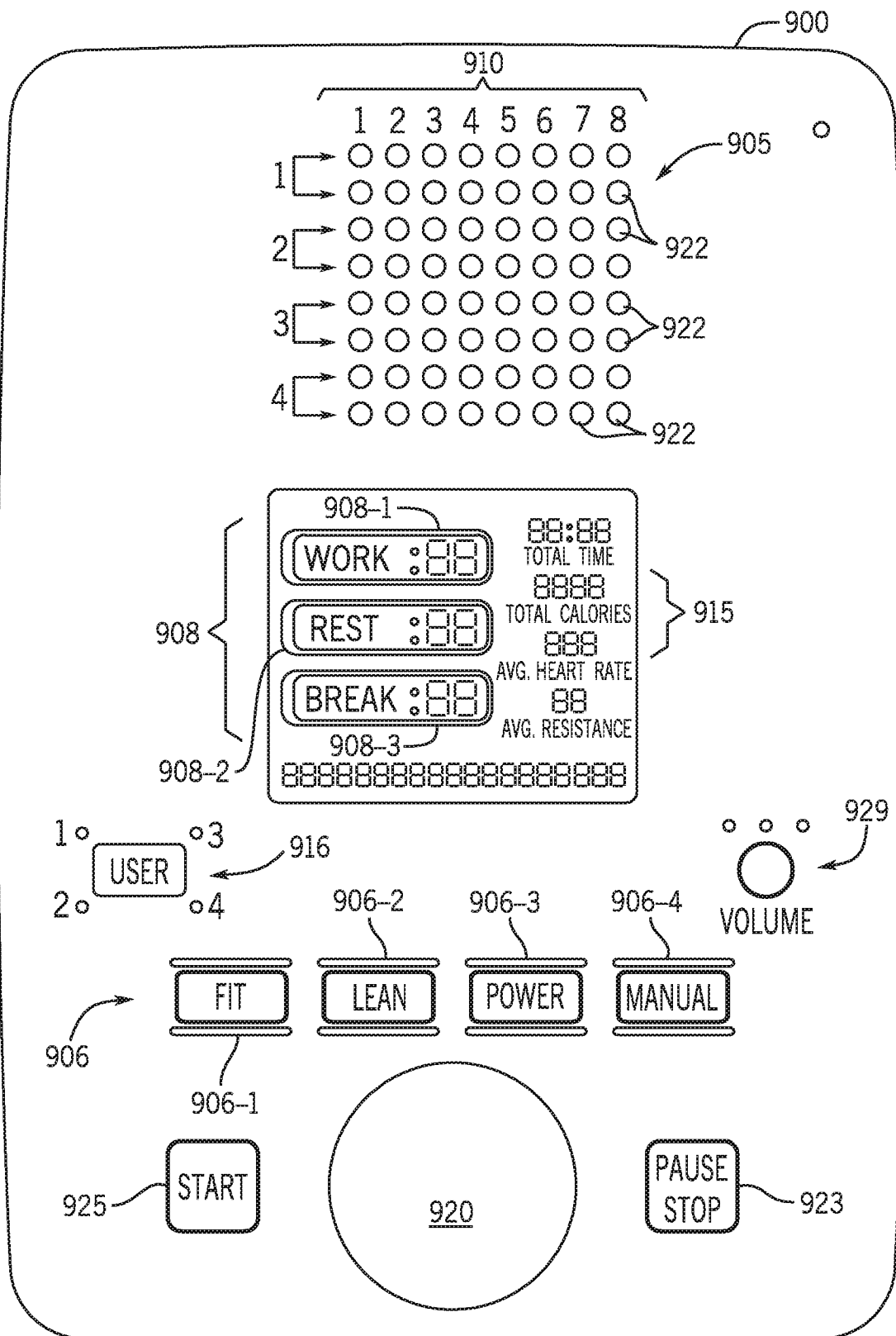


FIG. 9

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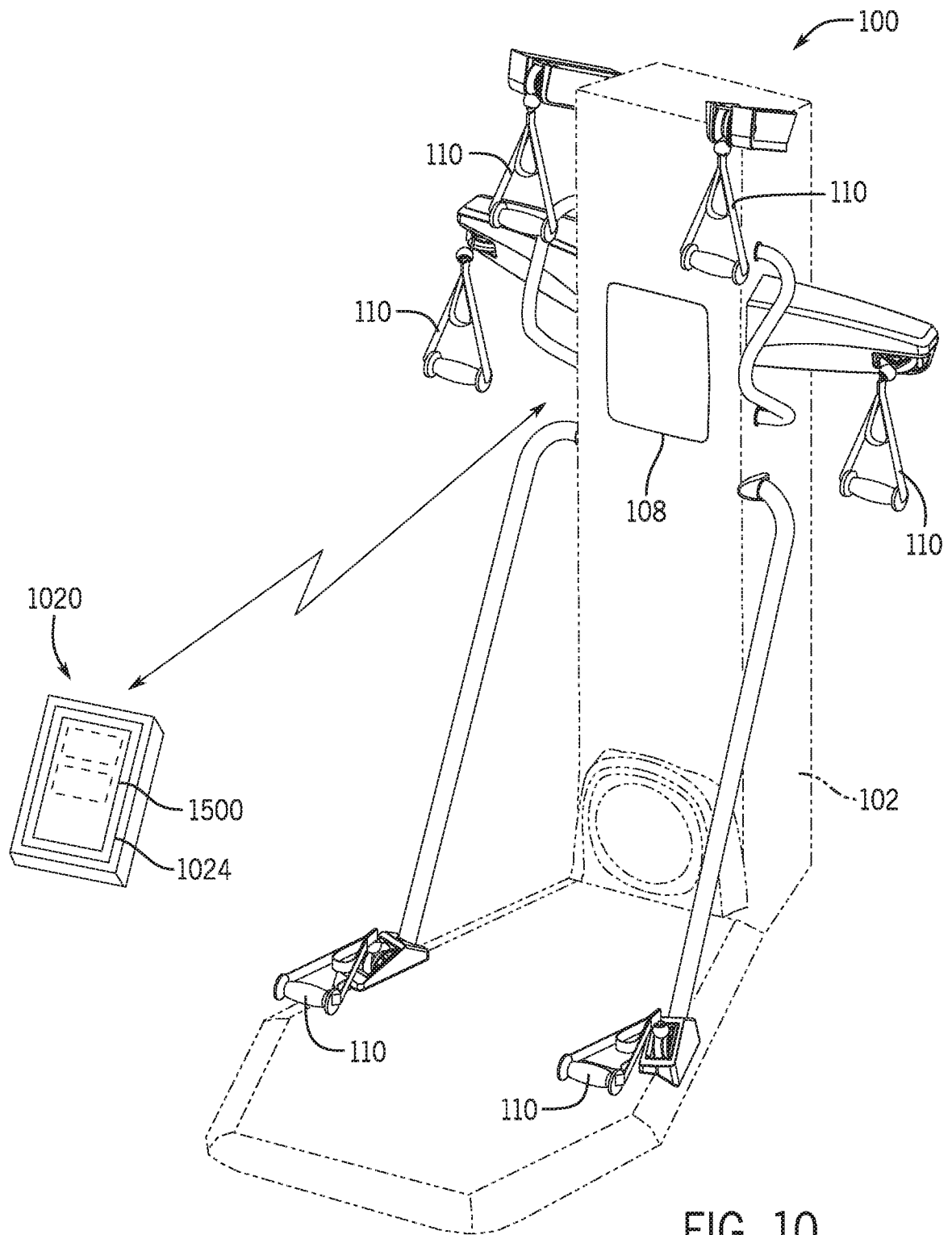
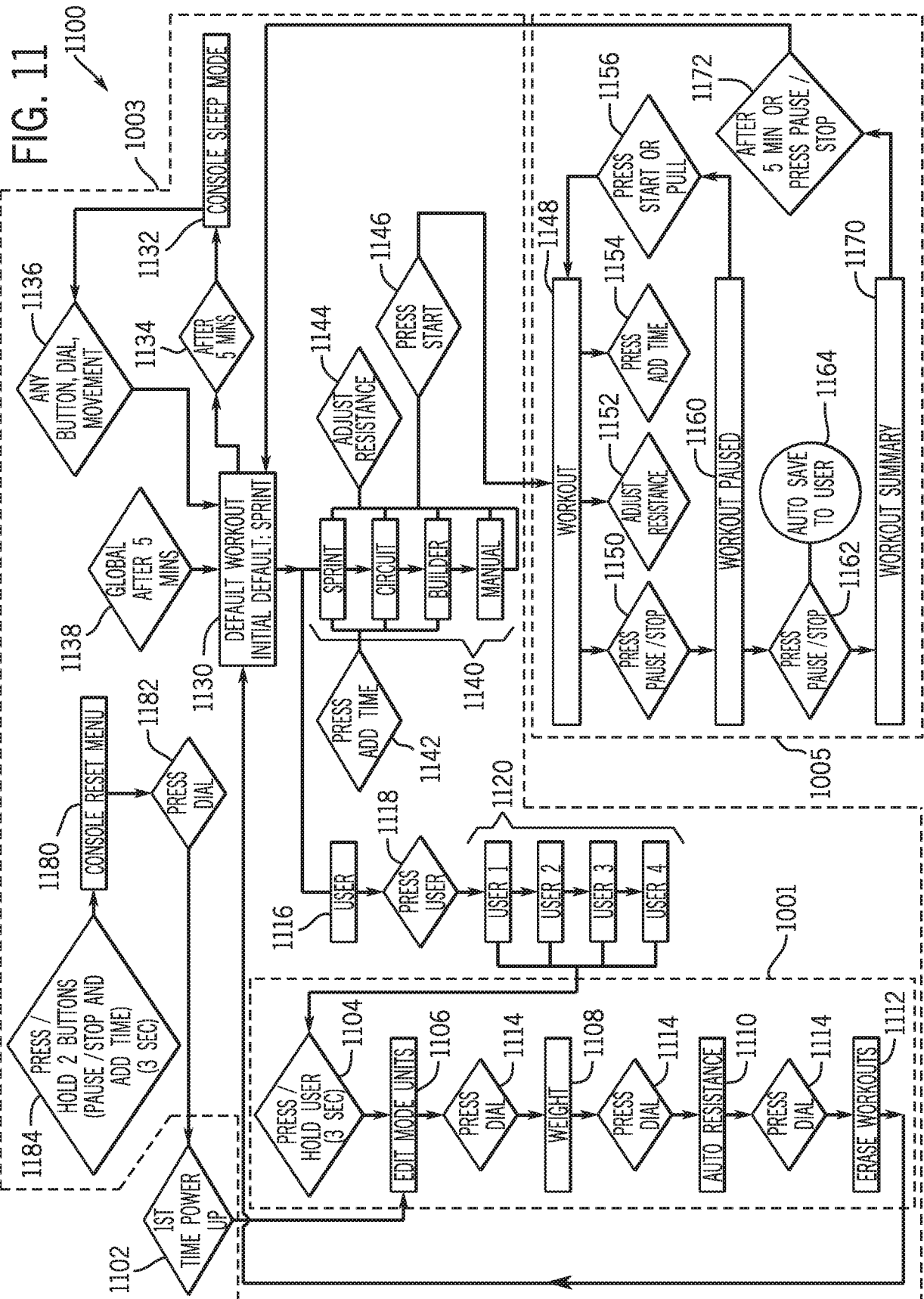


FIG. 10



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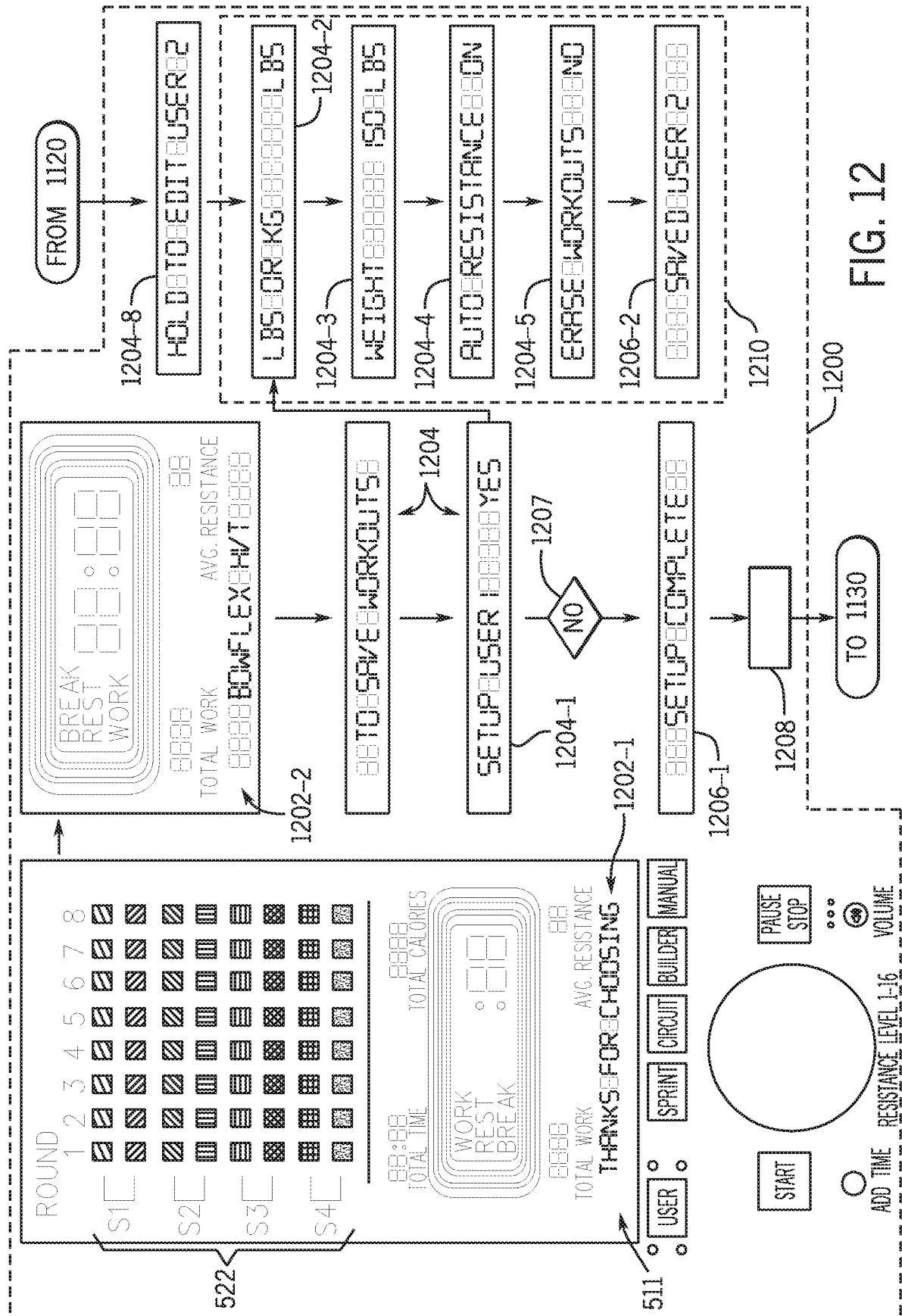


FIG. 12

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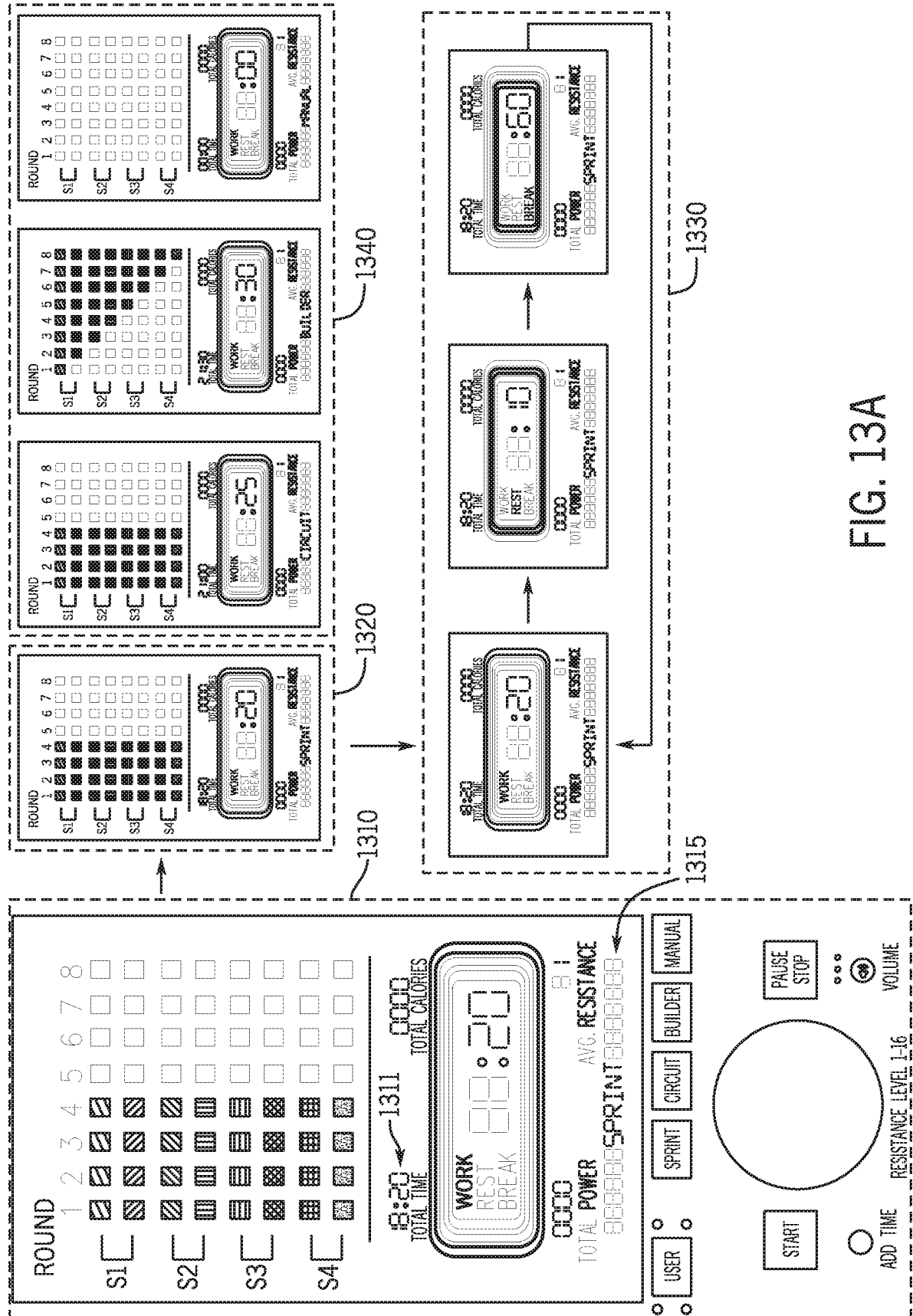


FIG. 13A

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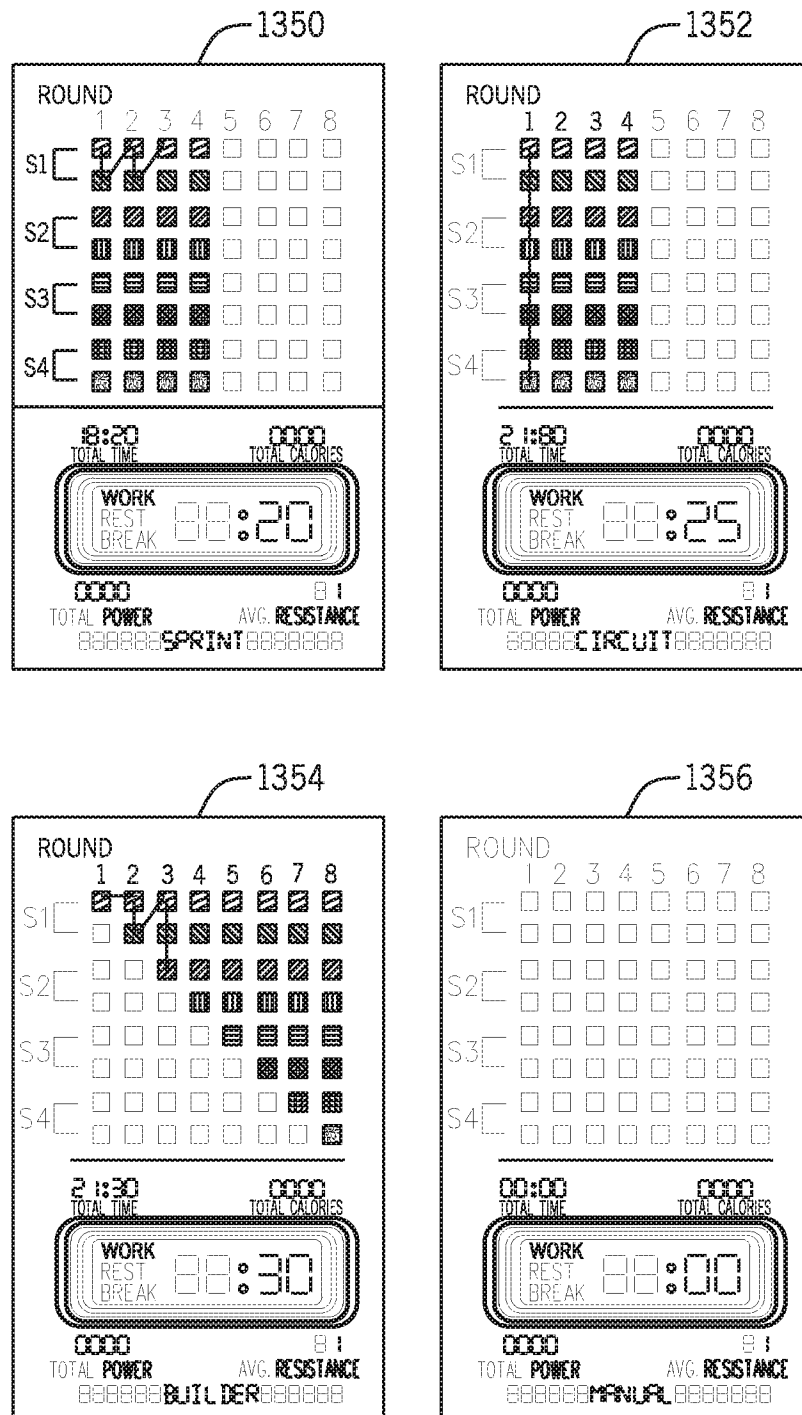


FIG. 13B

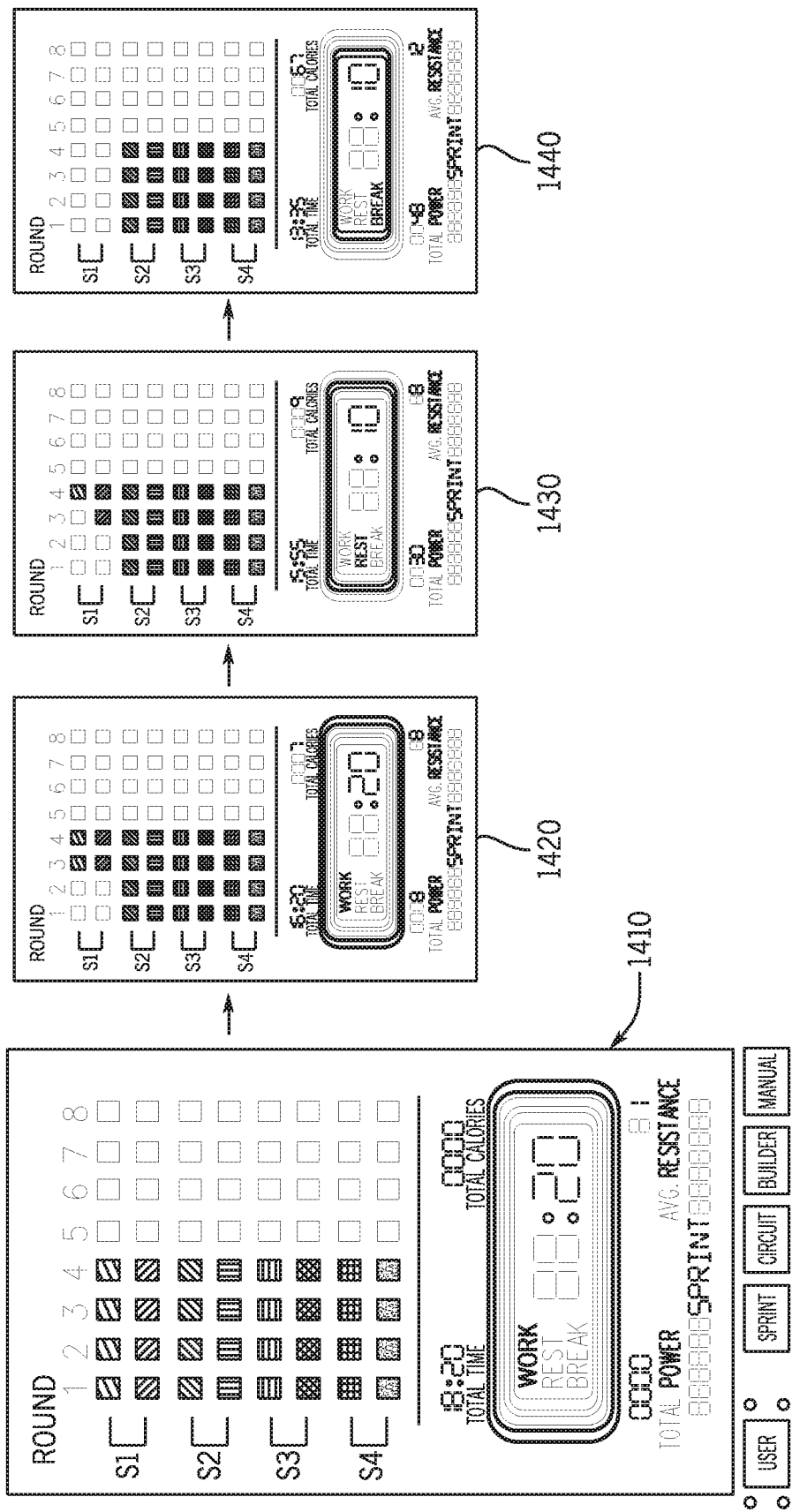
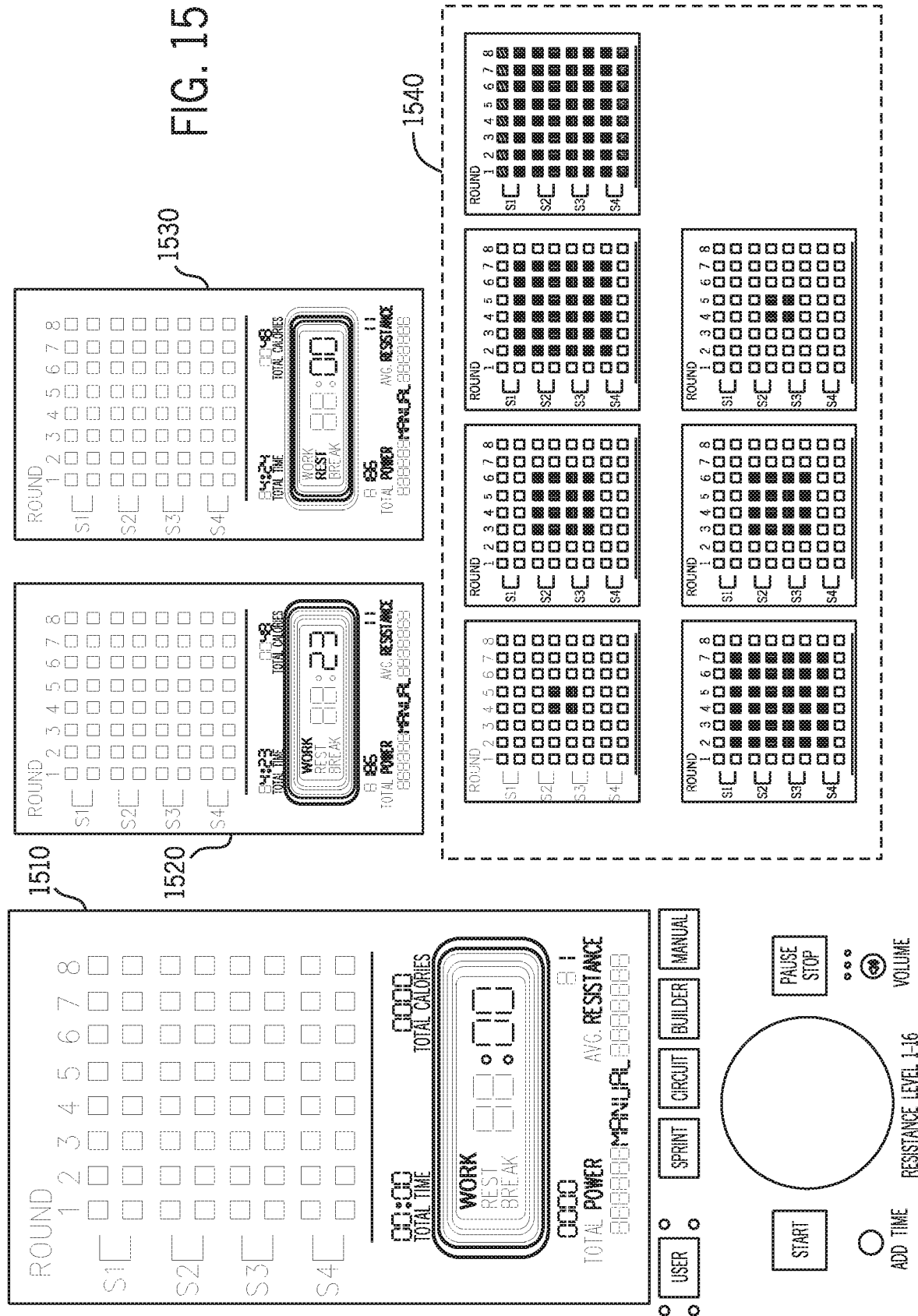
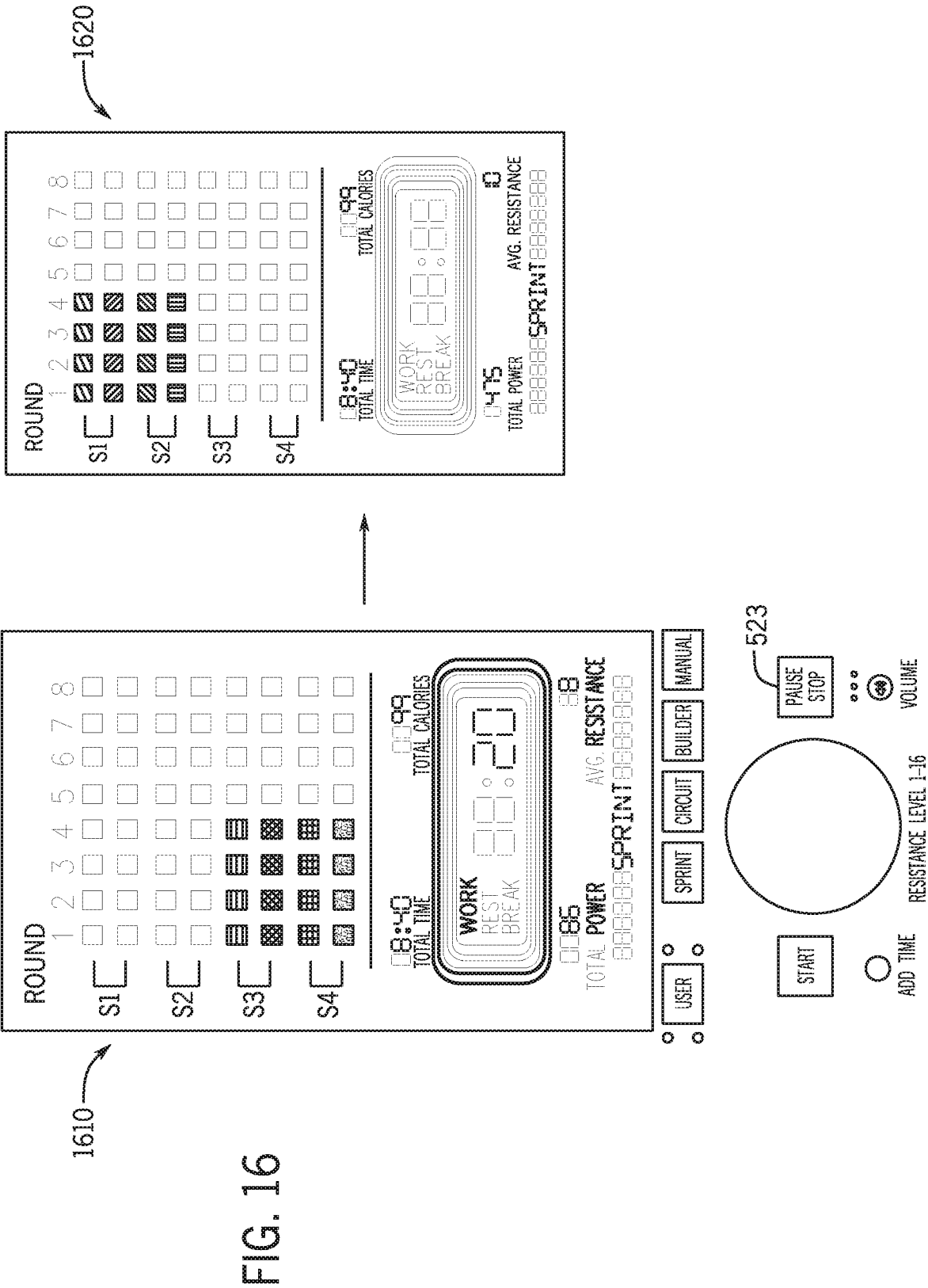


FIG. 14





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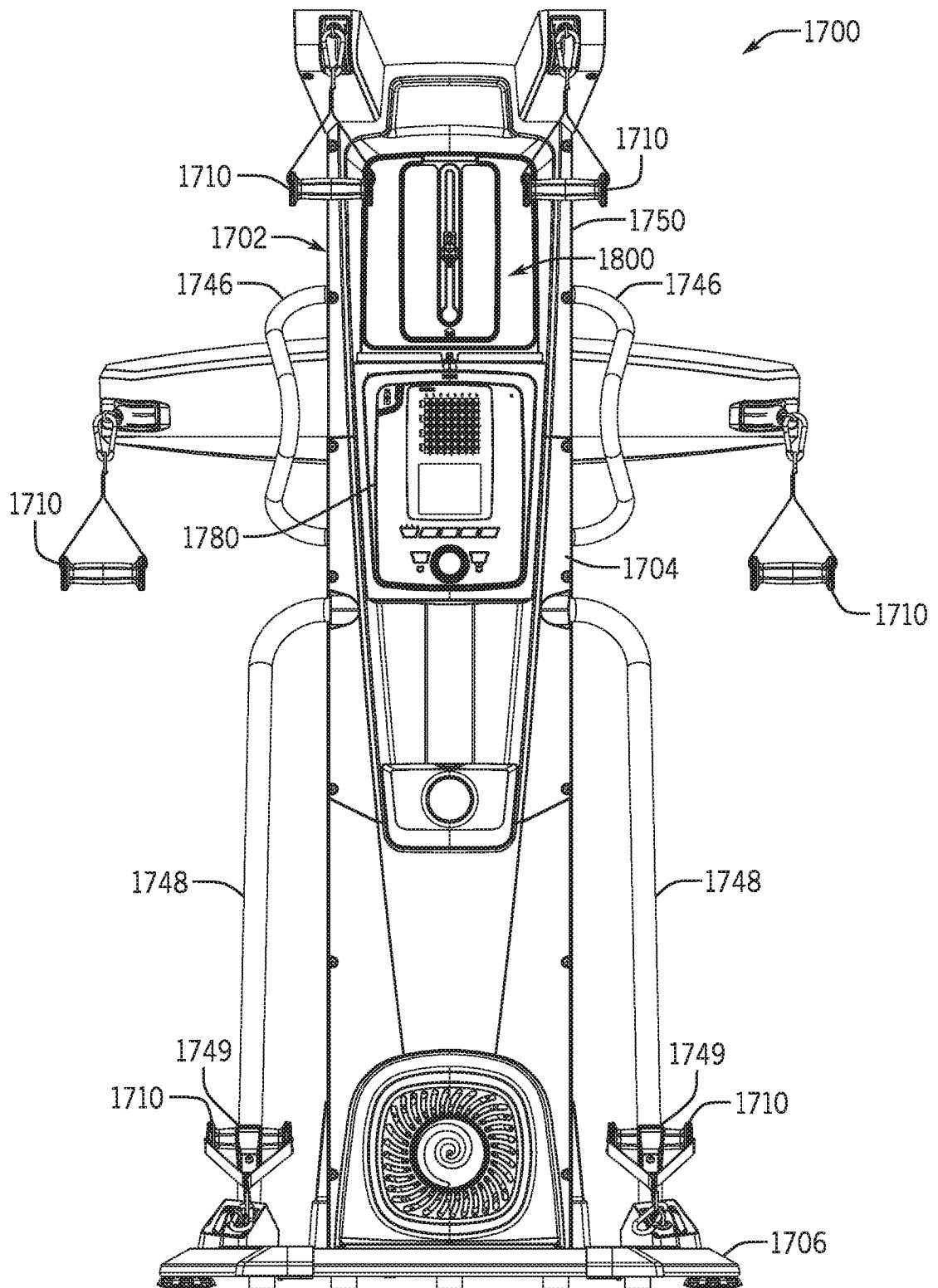
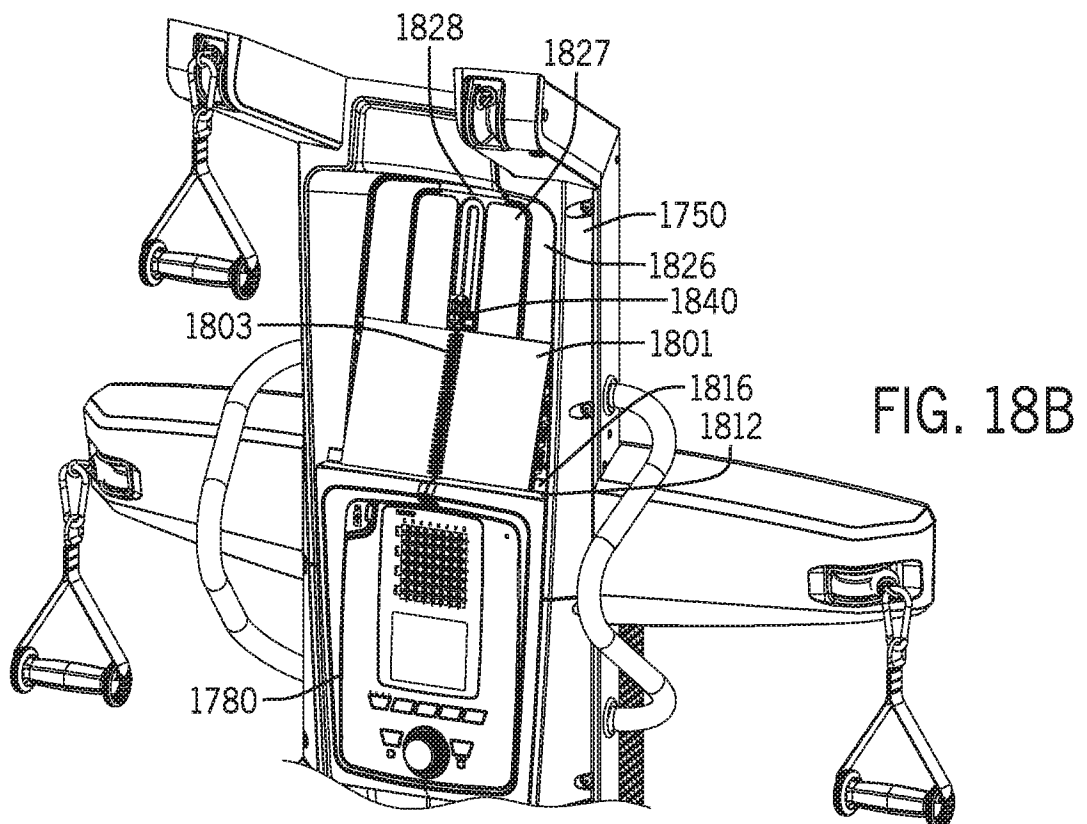
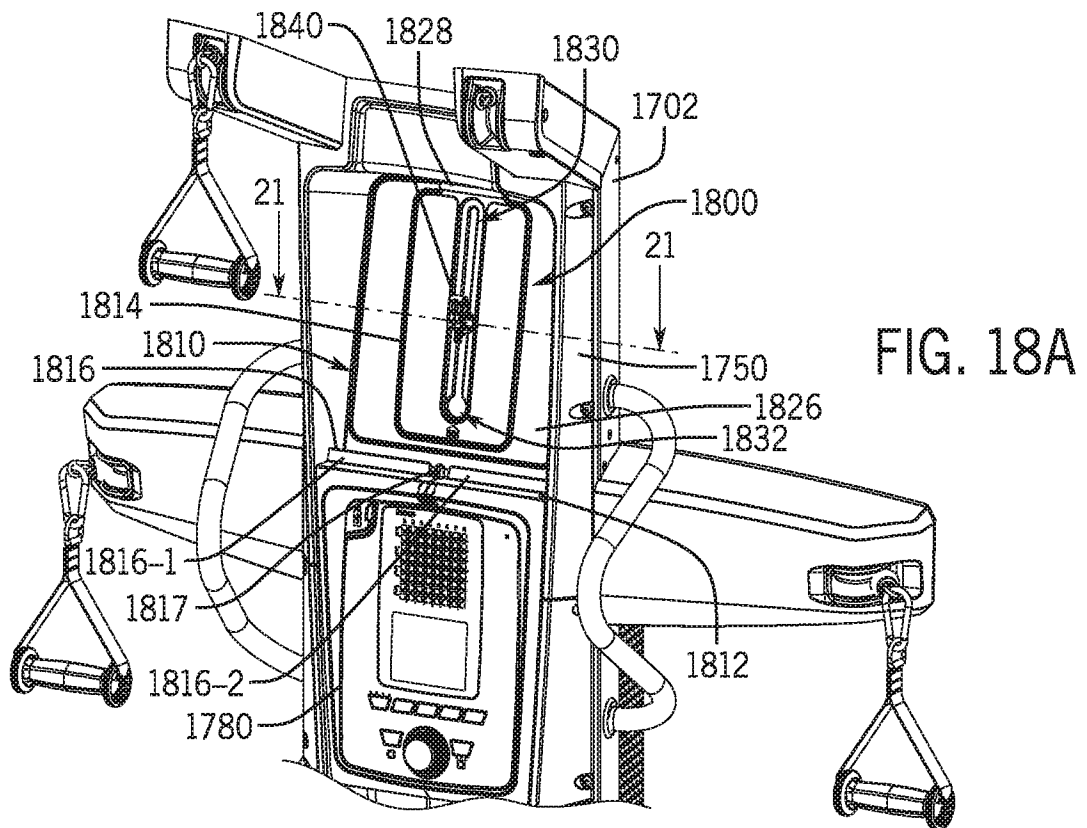


FIG. 17

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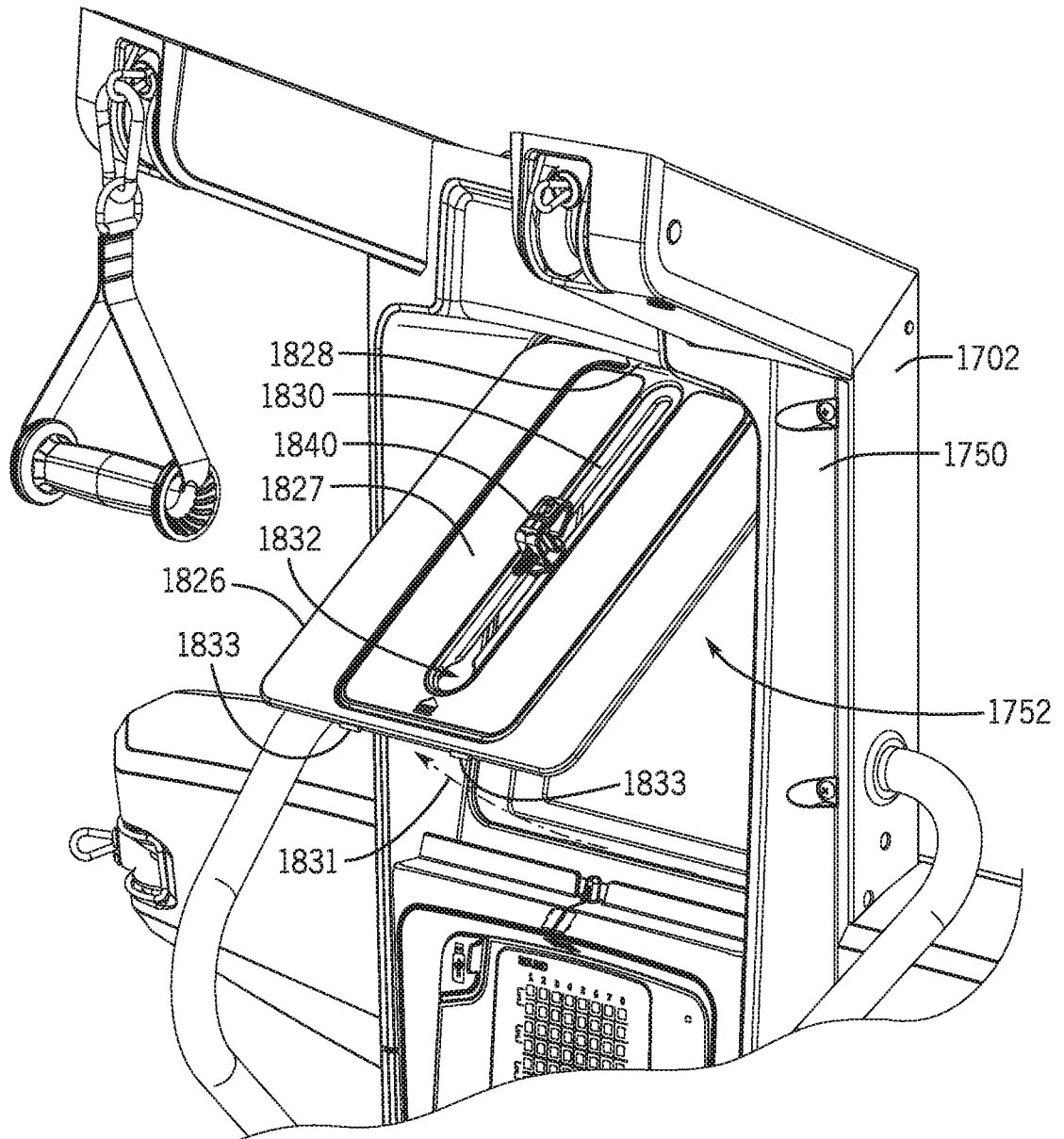


FIG. 19

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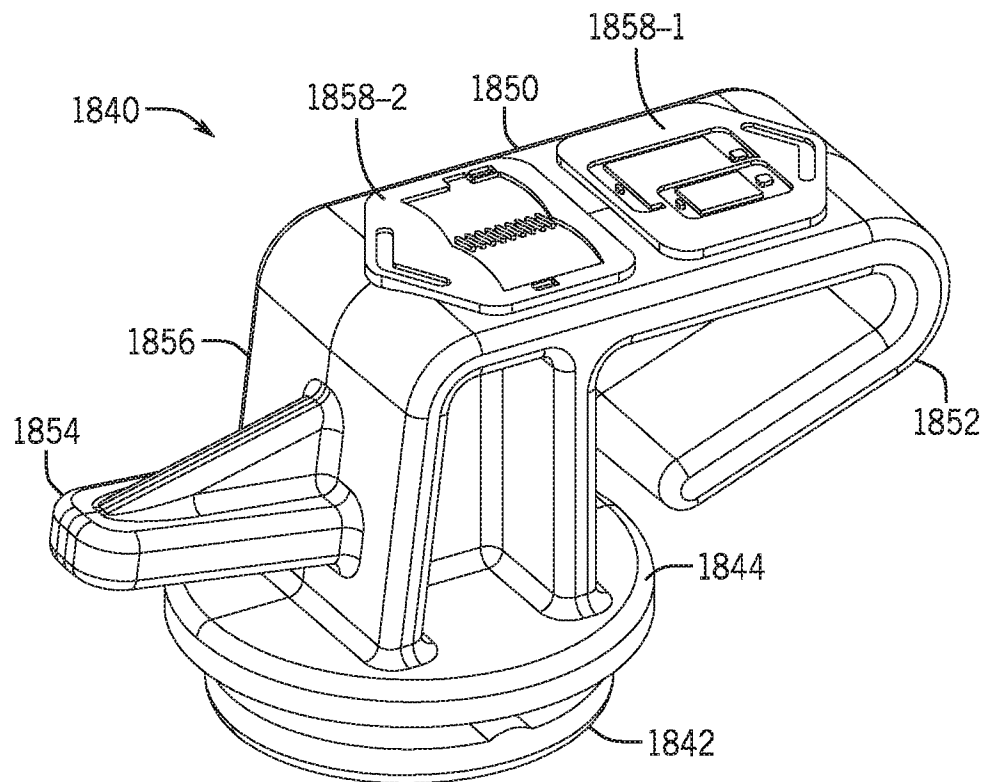


FIG. 20A

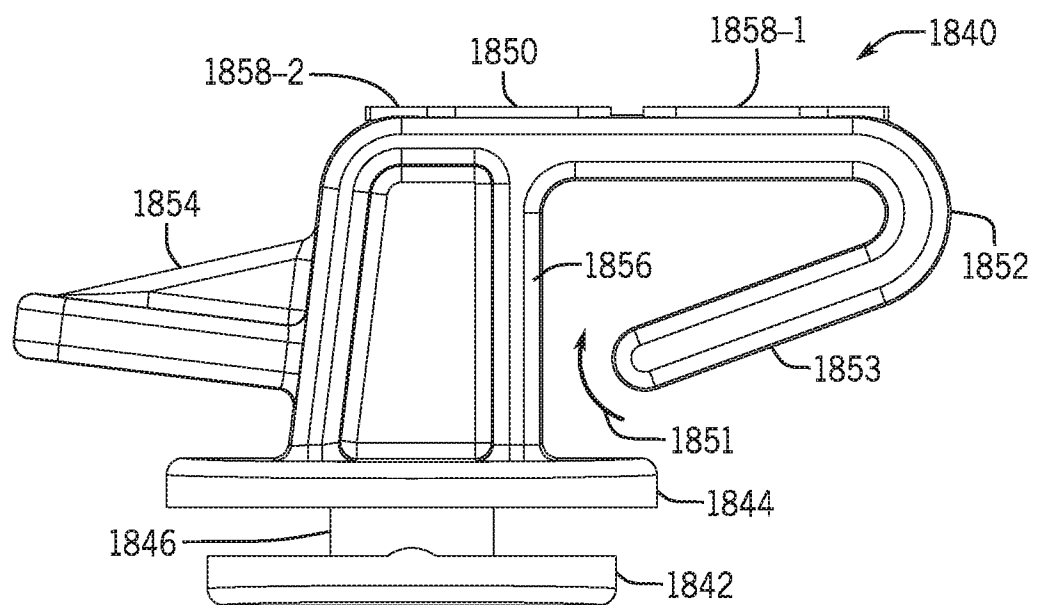


FIG. 20B

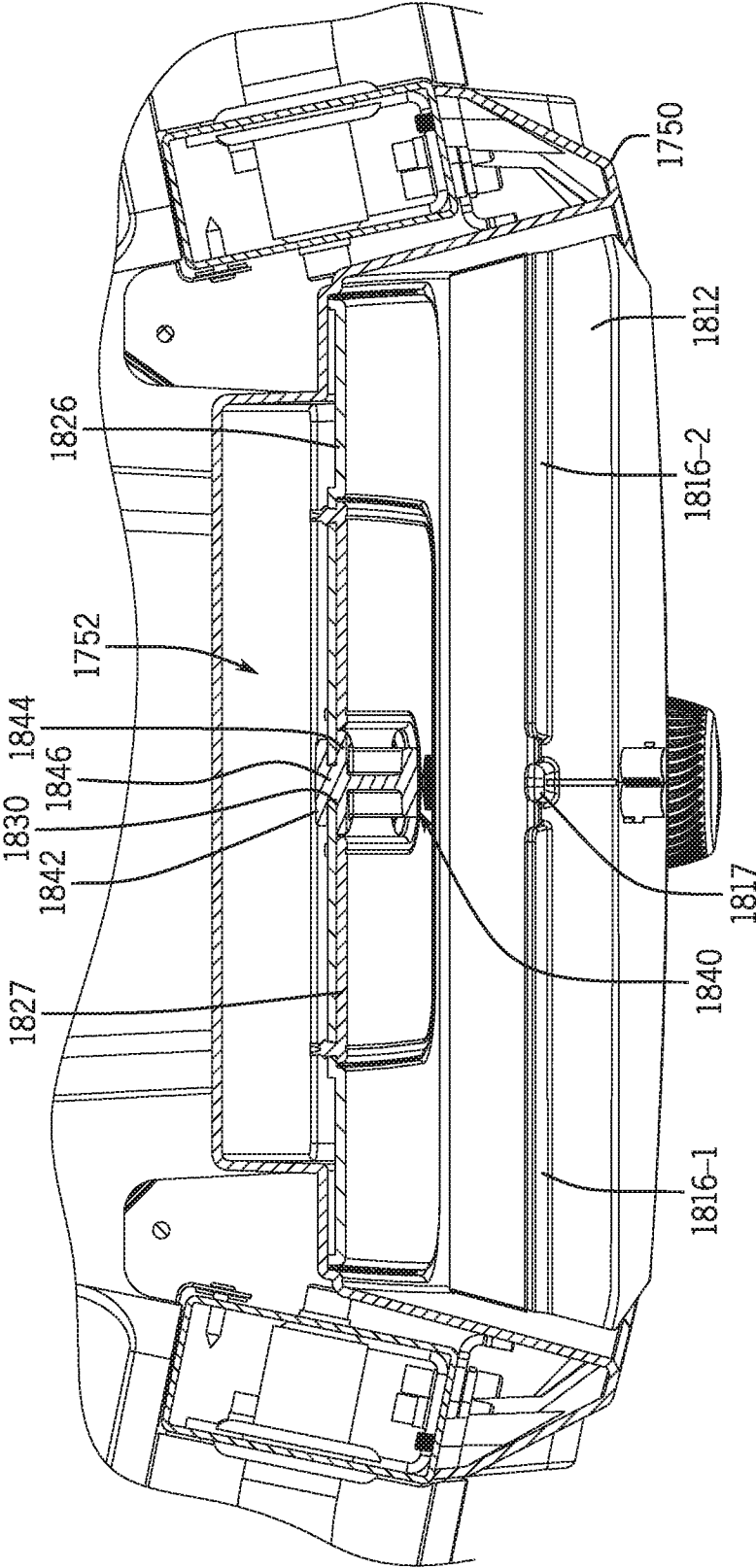
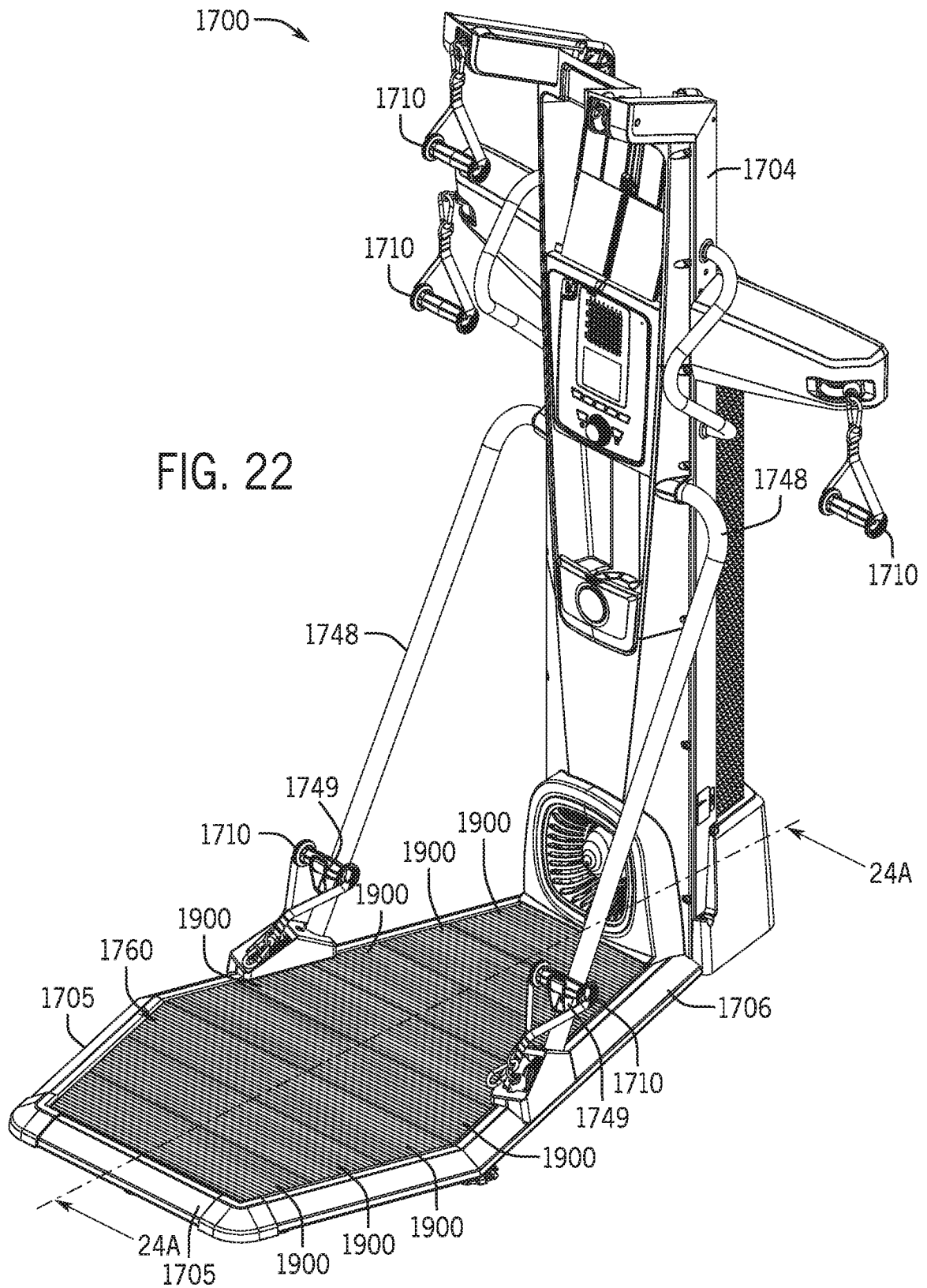
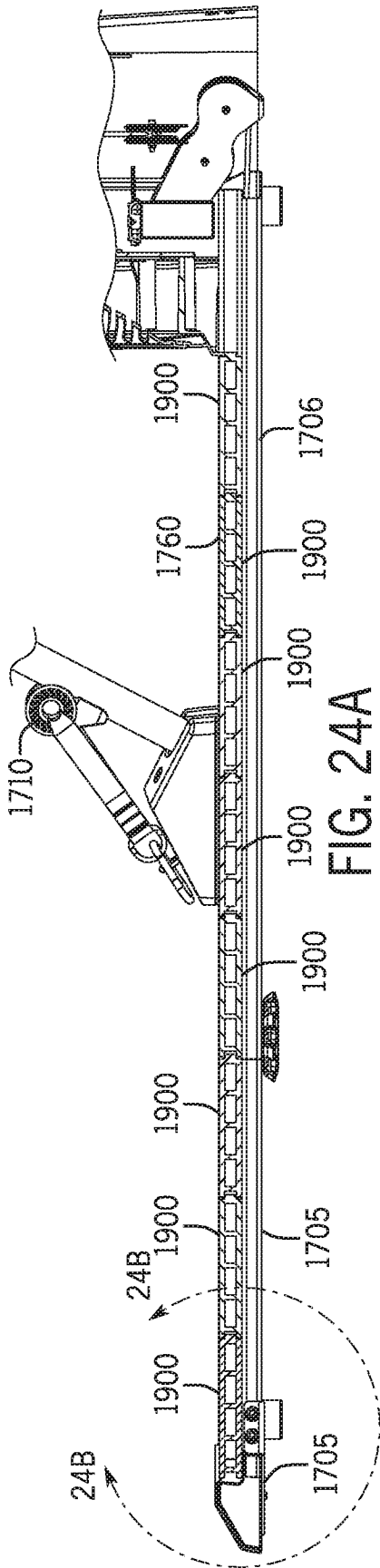
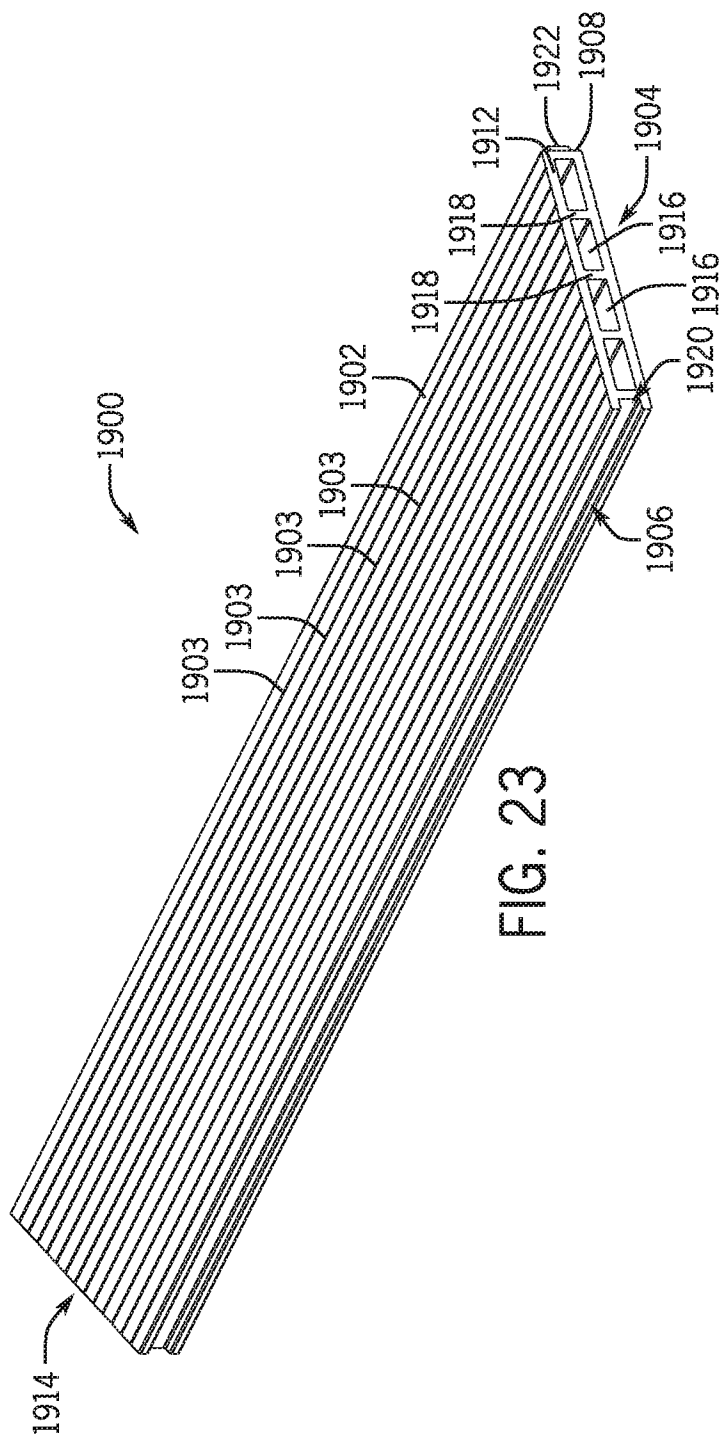


FIG. 21

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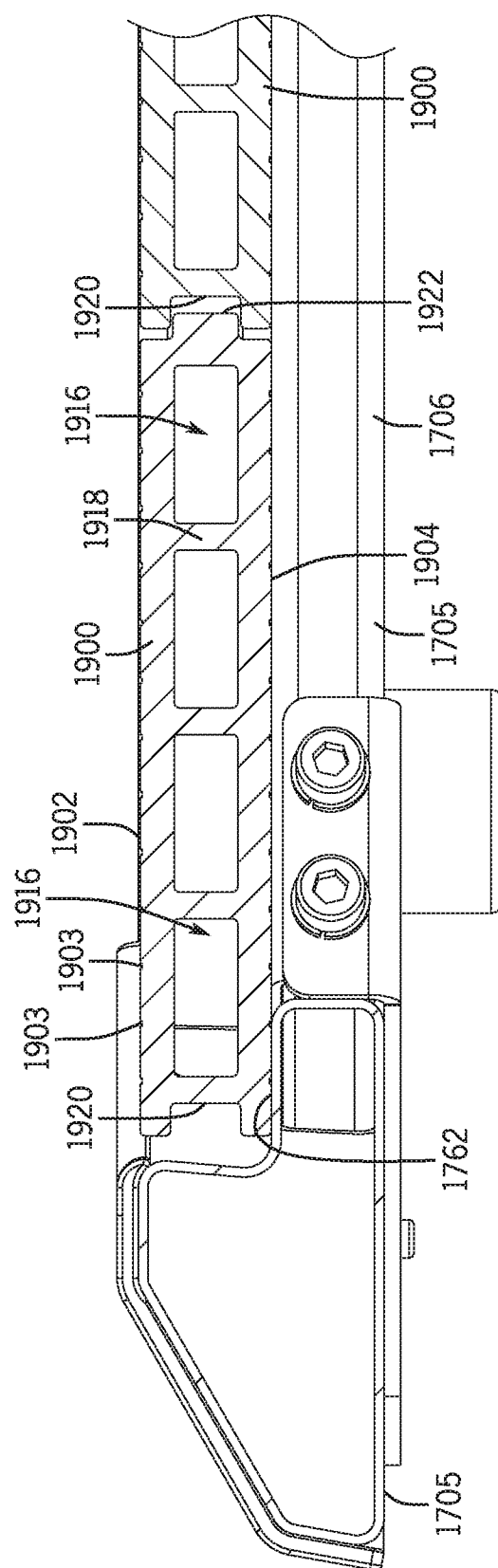


FIG. 24B