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(54) AEROBIC RAMP

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(57) ABSTRACT

A step exercising system for an aerobic step workout is constructed as a portable inclined step ramp. The ramp is sloped towards a user such that the user can step up onto the ramp at various heights, thereby regulating the degree of intensity of the workout without having to suspend the workout to adjust the step height, as is the case when using a conventional aerobic step having a raised level platform.

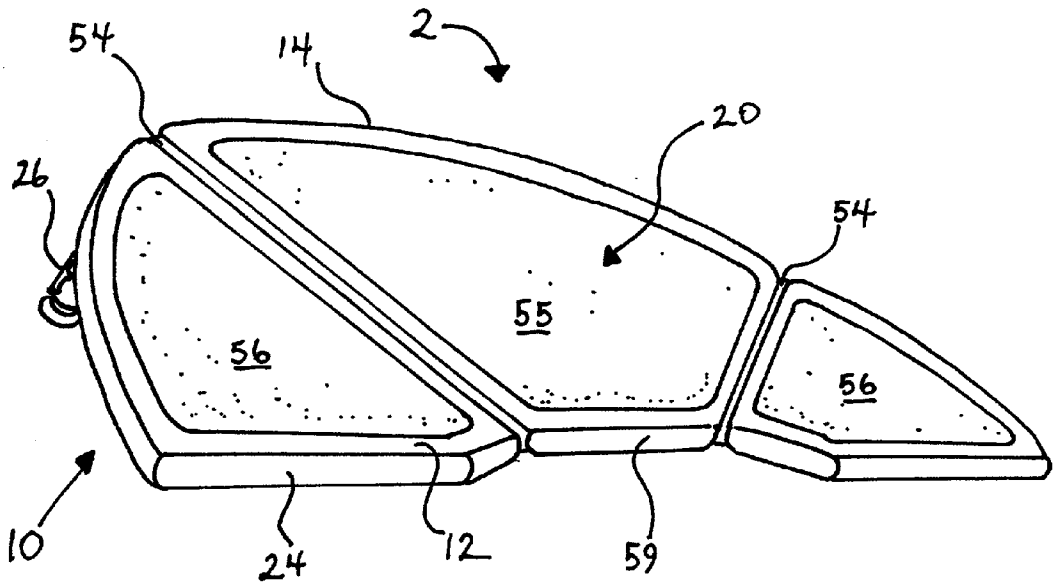


FIG. 1

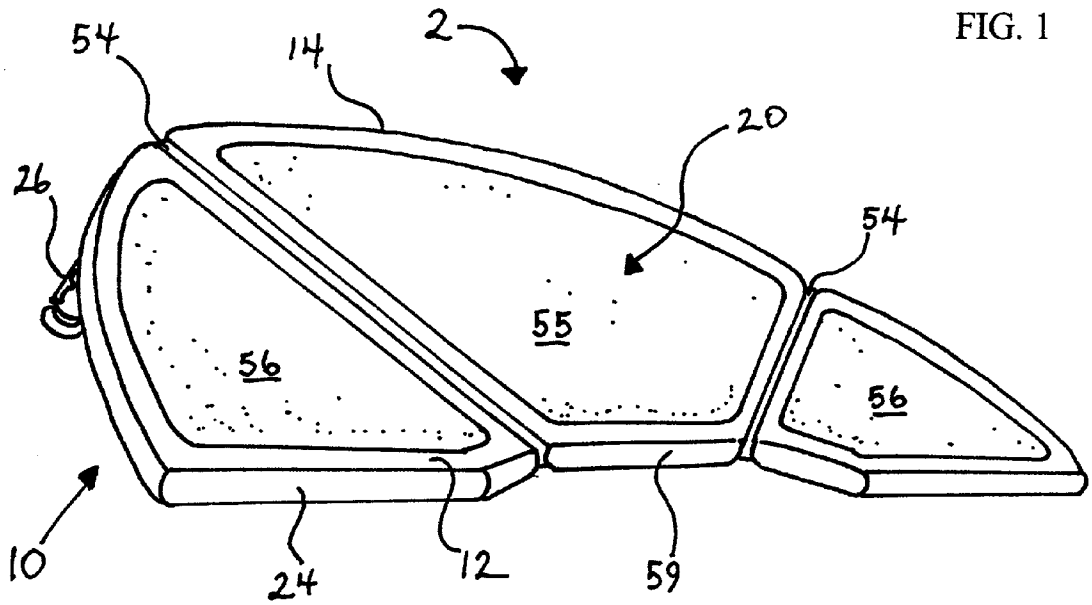


FIG. 2

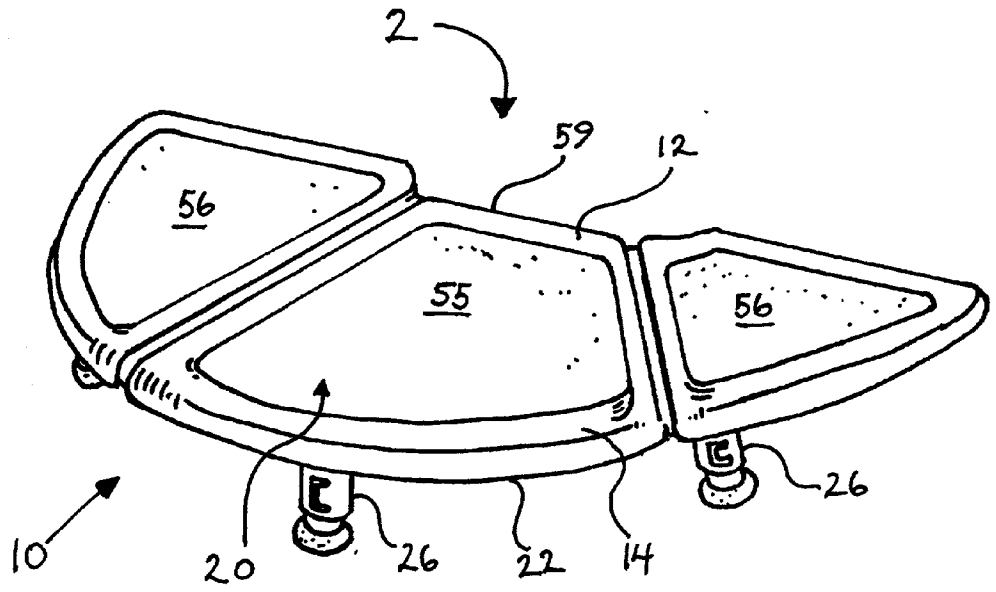


FIG. 3

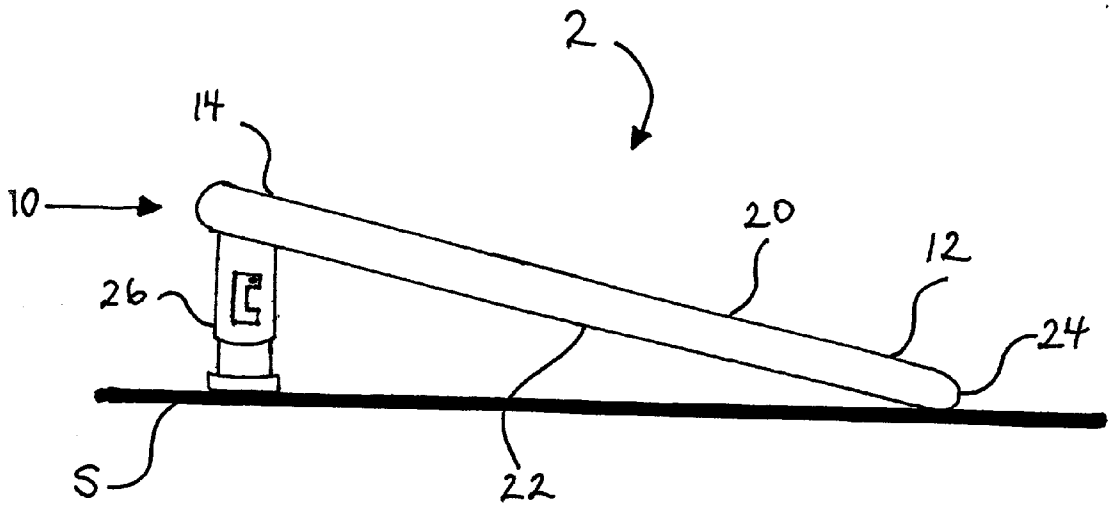


FIG. 4

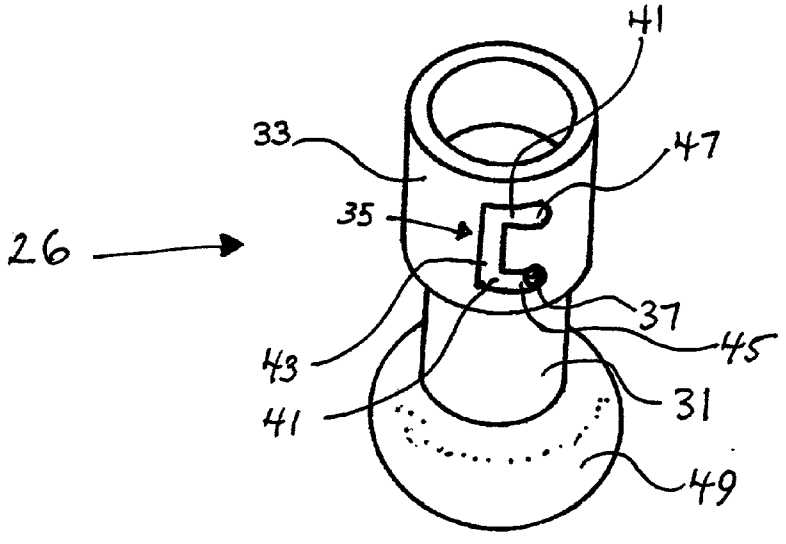


FIG. 5

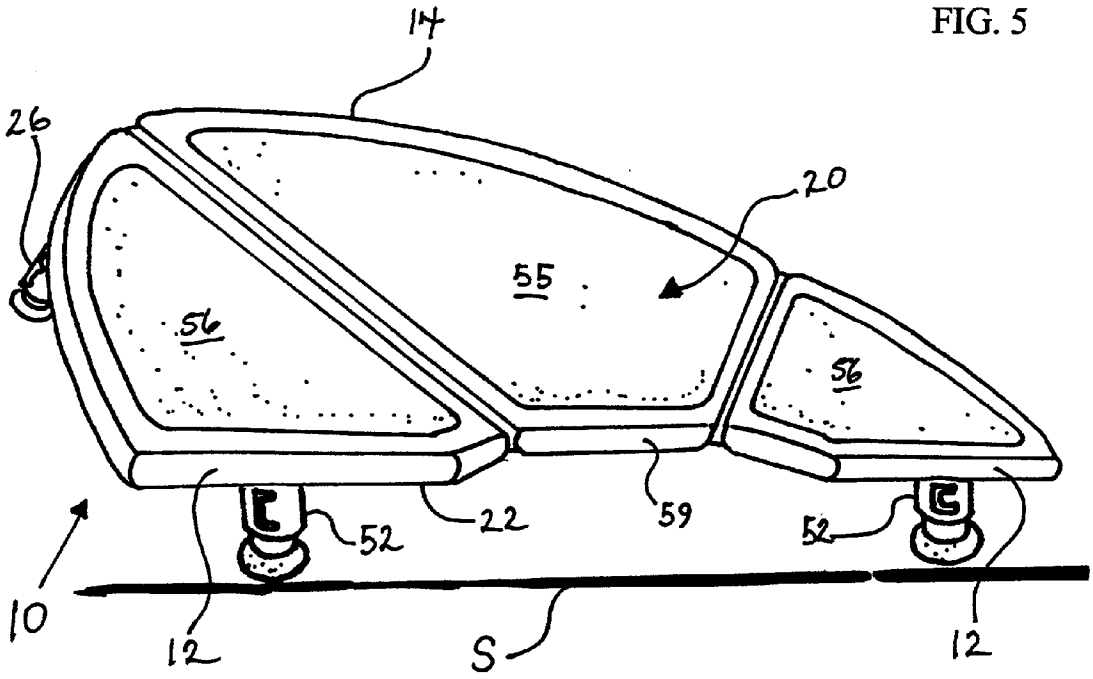


FIG. 6

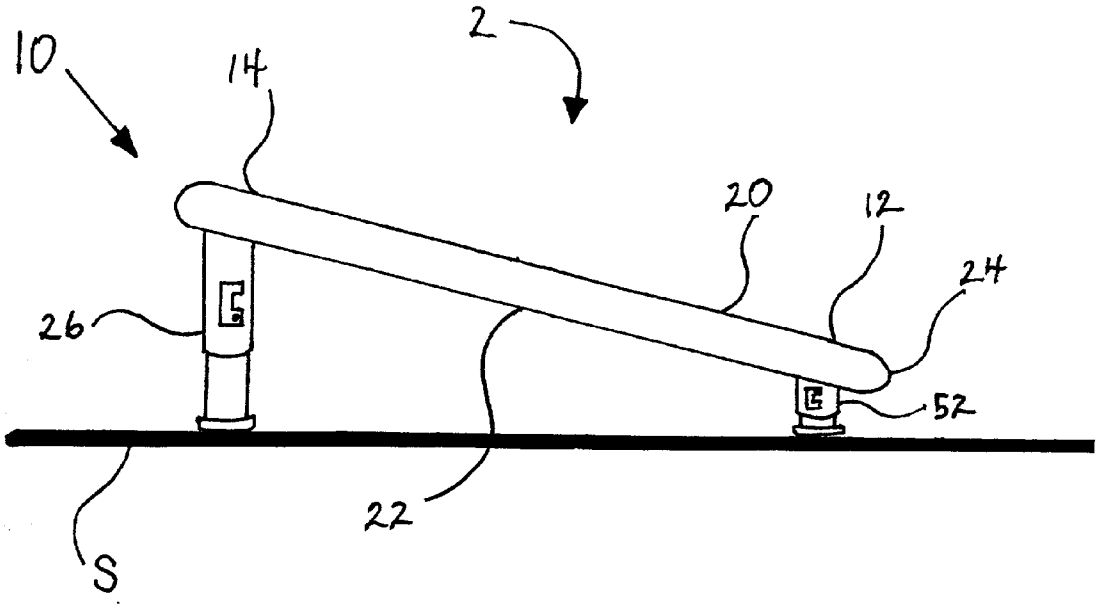
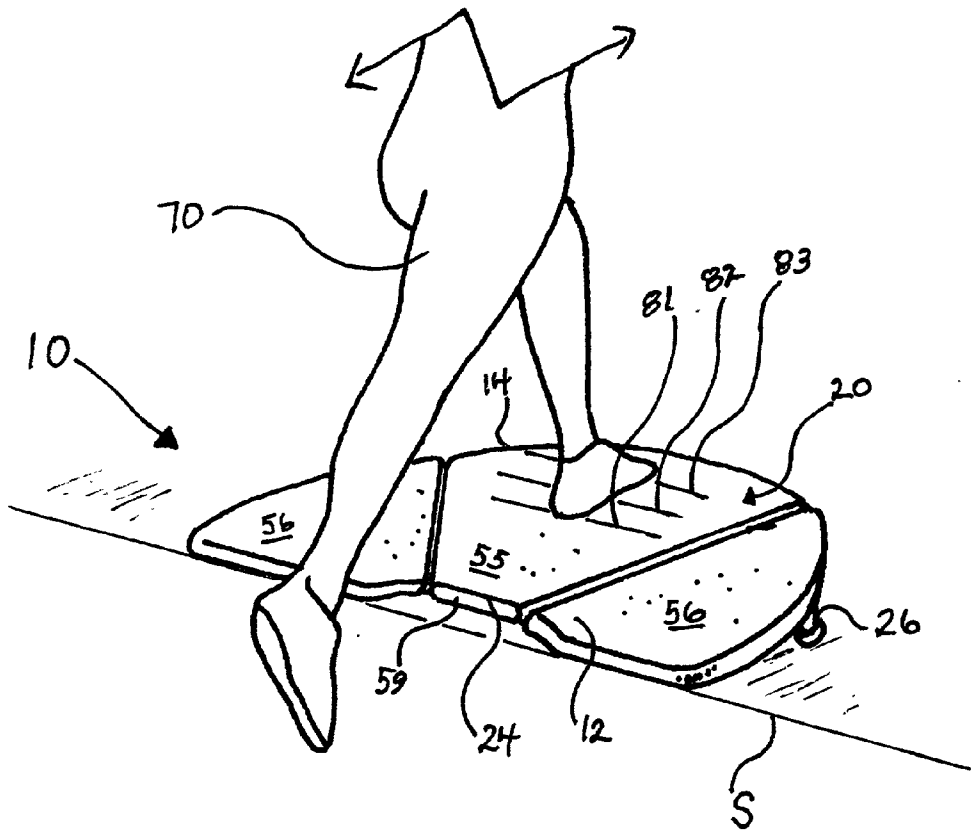


FIG. 7



AEROBIC RAMP

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] Not Applicable

STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT

[0002] Not Applicable

BACKGROUND OF THE INVENTION

[0003] 1. Field of the Invention

[0004] This invention relates to step systems for aerobic and cardiovascular activities.

[0005] 2. Description of the Prior Art

[0006] By way of background, a popular form of cardiovascular training is aerobic stepping. An aerobic step workout is performed by stepping on and off a raised, level step platform. The steps are choreographed, usually performed to music, and leader-driven by an instructor in a class setting or on videotape for home exercise. Workout intensity is largely dependent on the step platform height. Presently, step platforms require a user to suspend the workout while an adjustment to height is made. This is disruptive. Additionally, a user who is becoming fatigued and who should probably lower the step height will not do so, and instead will continue the workout, allowing for the possibility of over fatigue and potential miss-step. Another drawback of existing level step platforms is the great amount of load placed on the knee joint while performing the step up to the level platform. To step up on a level platform, the leg is moved forward by hip flexion. At the same time, the foot is brought up to a position above the level platform by knee flexion. Once the foot is on the platform it has a surface from which to push off. The hip and knee joints go into extension to move the body up against gravity. This places the knee joint under a substantial compression load. Further, most aerobic or cardiovascular activity such as stepping will cause the participants to perspire. This perspiration has a tendency to pool on the level step platform, creating the potential for injury by slipping on the surface.

SUMMARY OF THE INVENTION

[0007] The foregoing problems are solved and an advance in the art is obtained by a novel step exercising system for an aerobic step workout comprising a portable inclined step ramp. The ramp is sloped towards a user such that the user can step onto the ramp at various height levels, thereby easily regulating the degree of intensity of the workout. There is no need to suspend the workout to perform a height adjustment, as is the case when using a level aerobic step platform. There is also reduced stress on the knee joint.

[0008] In exemplary embodiments of the invention, the ramp is configured to define a front portion, a back portion, an upper workout surface portion, and an underside portion. The incline of the ramp can be provided in various ways, with adjustable legs or other incline members being preferred so that the incline of the ramp can be altered. The legs can be permanently or removably attached to the underside portion of the ramp proximate to the back portion thereof. In addition, adjustable legs can also be mounted to the front portion of the ramp so as to allow the overall height of the ramp to be varied. The ramp can also have one or more additional features, such as a radiussed leading edge on the ramp's front portion for contacting an independent support surface. Further, the ramp can be formed with grooves that channel perspiration from the upper work surface portion of the ramp and serve to visually divide the ramp into multiple workout areas, such as a central workout area and two lateral workout areas. Each workout area can be color-coded so as to allow a user to follow a choreographed routine. The front of the center workout area may be recessed relative to the lateral workout areas so as to facilitate easier access to all workout areas by the user. The upper workout surface portion is preferably configured with a non-slip surface.

BRIEF DESCRIPTION OF THE DRAWINGS

[0009] The foregoing and other features and advantages of the invention will be apparent from the following more particular description of preferred embodiments of the invention, as illustrated in the accompanying Drawings, in which:

[0010] **FIG. 1** is a front perspective view showing a step exercising system constructed in accordance with the invention;

[0011] **FIG. 2** is a rear perspective view of the step exercising system of **FIG. 1**;

[0012] **FIG. 3** is a side elevational view of the step exercising system of **FIG. 1**;

[0013] **FIG. 4** is a detailed perspective view of an exemplary height adjustable incline member for the step exercising system of **FIG. 1**;

[0014] **FIG. 5** is a front perspective view showing a modification of the step exercising system of **FIG. 1**;

[0015] **FIG. 6** is a side elevational view showing the modified step exercising system of **FIG. 5**;

[0016] **FIG. 7** is a front perspective view of the step exercising system of **FIG. 1** as it is intended to be used during an aerobic step workout;

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0017] A step exercising system for an aerobic workout will now be described by way of exemplary embodiments shown by the drawing figures, in which like reference numerals indicate like elements in all of the several views.

[0018] Turning to FIGS. **1-3**, a step exercising system **2** in accordance with a first exemplary embodiment of the invention is shown at rest on a support surface S (see **FIG. 3**), such as a floor. The step exercising system **2** includes a portable inclined aerobic step ramp **10**, whose overall configuration is best shown in **FIGS. 1 and 2**. It will be appreciated that the ramp **10** can be made of any suitable material capable of supporting a person stepping thereon. Examples include but are not limited to plastics such as ABS (acetyl butyl stylrene), polyethylene or the like. The ramp **10** can be formed with such materials using a blow mold technique, pressure forming, or injection molding. As an alternative to plastic, other material such as metal (e.g. aluminum) could be used to form the ramp **10**.

[0019] Although shown as being semi-circular in shape, the ramp **10** may be constructed in various configurations, depending on design preferences. Such shape variations notwithstanding, the ramp will generally define a front portion **12** adapted to face a user and a back portion **14** that lies away from the user. The ramp **10** will further define an upper workout surface portion **20** and an underside portion **22**. As can been seen in FIG. **3**, the back portion **14** is positioned at a height which is above the front portion **12** relative to the support surface S, such that the upper workout surface portion **20** is inclined toward the person at a constant angle during use. Moreover, the leading edge **24** of the front portion **12** preferably rests on the support surface S, so as to facilitate easy stepping onto the ramp **10**. The ramp **10** will preferably be constructed such that the incline of the upper workout surface portion **20** has about a 10-30 degree angle relative to the support surface S. An angle of incline less than about 10 degrees will be too small to facilitate an adequate workout, and an angle greater than about 30 degrees will be too large to enable the user to step securely up onto the ramp **10** and will tend to hyper extend the achilles tendon. It will be appreciated that the inclined configuration of the ramp can be provided in various ways. In FIGS. **1-3**, the incline is provided by mounting incline members in the form of adjustable legs **26** to the underside portion **22**, proximate to the back portion **14**. Other types of incline members could also be used, such as non-adjustable legs, frames, blocks, or otherwise. Another alternative would be to form the ramp **10** as a wedge-shaped structure in which the back portion **14** is thicker than the front portion **12**.

[0020] The legs **26** in the ramp embodiment of FIGS. **1-3** can be made of any suitable material capable of supporting a person, including plastics as described above, and metals. The legs **26** can be attached to the underside portion **22** in any suitable fashion. For example, if the ramp **10** is molded, the legs **26**, or a portion thereof, could be integrally formed with the ramp **10** during the molding process so as to be built-in to the ramp **10**. Other alternatives include attachment by welding, bolting, threading or the like, depending on whether the legs are to be permanently or removably attached to the ramp **10**.

[0021] The legs **26** are constructed with a height adjustable feature so that the incline angle of the ramp **10** can be altered. **FIG. 4** illustrates one example of a leg **26** having height adjustment capability. As shown in **FIG. 4**, the leg **26** comprises an inner tubular member **31** that is slidably disposed within, and surrounded by, an independent outer tubular member **33** that is attached to the ramp **10**. The inner tubular member **31** is thus capable of telescoping from the outer structure **33**, allowing for a change in length of the leg **26**. The inner tubular member **31** may be secured in position relative to the outer tubular member **33** in various ways.

[0022] In **FIG. 4**, the outer tubular member **33** is constructed with a slotted opening **35** and the inner tubular member **31** is constructed with a protruding pin member **37** that is received in the slotted opening **35**. The slotted opening **35** includes two horizontal channels **41** connected by a vertical channel **43**. To adjust the length of the leg **26** (thereby adjusting the height and incline of the ramp **10**), the inner tubular member **31** is rotated so that the pin member **37** can be slid from a fixed point **45** in one of the horizontal channels **41**, then through the vertical channel **43** of the slotted opening **35**, and to another fixed position **47** in the other horizontal channel **41**. Note that additional horizontal channels **41** can be provided depending on the number of height adjustments desired. Other adjustment arrangements could also be used, including pins inserted through holes in the inner tubular member **31** and outer tubular member **33**.

[0023] The legs **26** can further be mounted with a slip-resistant tip **49** at the end, which rests on the support surface S. The tip **49** may be made of any suitable slip-resistant material, including but not limited to silicone rubber, high friction plastic, or otherwise.

[0024] As best shown in **FIG. 4**, the front portion **12** of the ramp **10** may be constructed with a radius on the leading edge **24**. The radius enables the leading edge **24** to contact the support surface S without damaging it, as might be the case from a squared edge. The radius also facilitates ramp angle changes by allowing the leading edge **24** to contact the support surface at various locations. In addition, the radius provides a friendlier contact surface with a user.

[0025] Turning now to **FIGS. 5 and 6**, an alternative construction of the ramp **10** is shown wherein the underside **22** mounts adjustable legs **52** proximate to the front portion **12** of the ramp **10**. The adjustable legs **52** directly contact the support surface S and enable the leading edge **24** to be positioned above the support surface rather than resting directly thereon. This allows a user to intensify the workout by having a higher initial starting point for the workout.

[0026] As can be seen in any of FIGS. **1-2** and **5**, and as further illustrated in **FIG. 7**, the upper workout surface portion **20** of the ramp **10** comprises grooves **54** that divide the surface into visually distinct workout areas. The grooves **54** can be formed in a variety of ways. If the ramp **10** is formed as a single unit, the grooves **54** can be formed therein during the fabrication process or thereafter in subsequent processing. Alternatively, the grooves **54** could be defined by fabricating the ramp **10** as separate sections that are suitably fastened together such that a space is formed between adjacent sections to define the grooves **54**.

[0027] In the embodiments of FIGS. **1-3** and **5**, the grooves **54** divide the upper workout surface portion **20** into three visually distinct workout areas, namely, a center workout area **55** and two distinct side workout areas **56** adjacent to the center workout area **55**. Other configurations in which the number and arrangement of workout areas is different could also be used. To further visually differentiate the workout areas **55** and **56**, and to enable a user to follow a step workout choreographed to different workout areas, the workout areas **55** and **56** can be color-coded.

[0028] The workout areas **55** and **56** are also preferably constructed with a non-slip surface configuration. The non-slip configuration could be provided by suitably texturing the upper workout surface portion **20** in its initial construction. Alternatively, the non-slip configuration can be provided by a separate material that is directly applied to the workout areas **55** and **56** after initial construction, as by spraying, brushing, or adhering. Examples include, but are not limited to, textured paints, rubber coatings, or various inserts or stickers made of rubber, sand paper, or other materials.

[0029] Note that the center workout area **55** is constructed with a recess **59** at the front portion **12** of the ramp **10**. The recess **59** is adapted to enable a user easier access to the two

side workout areas **56** such that the user may contact a side workout area **56** without stepping over the center workout area **55**, as will now be described.

[**0030**] **FIG. 7** shows the ramp **10** as it would be used during a typical workout. It is assumed that the ramp **10** includes plural workout areas as described above. First, a user **70** can predetermine the overall incline of the ramp **10** by adjusting the length of the legs **26** (when included in the ramp's construction). Next, the ramp is placed on the support surface S with the leading edge **24** in direct contact with the support surface S (or above the support surface S if the ramp **10** is so constructed and the user desires such a setup). The ramp **10** remains in this constant position throughout the workout. The user **70** stands facing the ramp **10** proximate to the leading edge **24** of the front portion **12**. The user **70** steps on and off the various workout areas **58** of the upper work surface portion **20** of the ramp **10** as dictated by a choreographed workout. Throughout the workout, the user **70** can vary the height of each step by choosing a point (e.g. **81**, **82**, or **83**) of contact on the ramp **10** and thereby modifying the intensity of the workout.

[**0031**] Accordingly, a system for an aerobic step workout has been disclosed. While various embodiments of the invention have been shown and described, it should be apparent that many variations and alternative embodiments could be implemented in accordance with the teachings herein. It is understood, therefore, that the invention is not to be in any way limited except in accordance with the spirit of the appended claims and their equivalents.

What is claimed is:

1. A step exercising system for an aerobic step workout, comprising:

a portable inclined step ramp;

a front portion on said step ramp;

a back portion on said step ramp;

an upper workout surface portion on said step ramp adapted to remain stationary as it supports a person during use;

an underside portion on said step ramp adapted to face an external support surface during use; and

variable incline means for variably inclining said upper workout surface portion at a selected incline relative to said support surface such that said upper workout surface portion is sloped toward the person at a desired incline angle during use.

2. A step exercising system in accordance with claim 1 wherein said incline is variable between about 10-30 degrees.

3. A step exercising system in accordance with claim 1 wherein said front portion has a leading edge that is adapted to contact said support surface.

4. A step exercising system in accordance with claim 1 wherein said incline means comprises adjustable incline members proximate to said back portion.

5. A step exercising system in accordance with claim 4 wherein said incline members are adjustable legs.

6. A step exercising system in accordance with claim 5 wherein said adjustable legs are telescopically adjustable.

7. A step exercising system in accordance with claim 4 wherein said ramp further comprises means for adjusting a height of said front portion relative to said support surface.

8. A step exercising system in accordance with claim 1 wherein said upper workout surface portion comprises two or more visually distinct workout areas.

9. A step exercising system in accordance with claim 1 wherein said upper workout surface portion comprises a visually distinct central workout area and two visually distinct side workout areas respectively disposed on opposite sides of said central workout area.

10. A step exercising system in accordance with claim 8 wherein said workout areas have different colors for choreographing an exercise program.

11. A step exercising system in accordance with claim 8 further including grooves between said workout areas, said grooves being adapted to channel perspiration and to aide in visually separating said workout areas during a workout routine.

12. A step exercising system in accordance with claim 1 wherein said front portion comprises a central recess to facilitate access to multiple workout areas of said upper workout surface portion.

13. A step exercising system in accordance with claim 1 wherein said front portion has a leading edge configured with a radius for engaging said support surface.

14. A step exercising system in accordance with claim 1 wherein said upper workout surface portion has a non-slip surface configuration.

15. An aerobic ramp having a workout surface and incline support means for positioning said ramp on a support surface with said workout surface at an incline such that a first portion of said workout surface is positioned at a height which is lower than a second portion of said workout surface relative to said support surface, and with said first portion engaging said support surface.

16. An aerobic ramp in accordance with claim 15 wherein said support means comprises adjustable incline means for varying said incline.

17. An aerobic ramp in accordance with claim 16 wherein said incline means comprises adjustable legs.

18. An aerobic ramp in accordance with claim 15 wherein said workout surface comprises anti-slip means for preventing slipping during use.

19. An aerobic ramp in accordance with claim 15 wherein said workout surface comprises means for channeling moisture during use.

20. An aerobic ramp in accordance with claim 15 wherein said workout surface comprises means for providing plural visually distinct workout areas.

21. An aerobic ramp in accordance with claim 15 wherein said first portion comprises central recess means for providing access to lateral side sections of said first portion during use.

22. An aerobic ramp in accordance with claim 15 wherein said first portion comprises radius means for engaging a support surface.

23. An aerobic ramp comprising:

an inclined work surface;

grooves adapted to channel moisture from said work surface and to aide in visually separating said workout area into a center workout area and two or more lateral workout areas;

said center workout area having a recess relative to said lateral workout areas proximate to a lower front portion of said aerobic ramp;

height adjustable legs proximate to a higher back portion of said ramp;

a non-slip configuration on said work surface;

said workout area comprising different colors; and

a radius on a leading edge of said lower front portion of said ramp for engaging said support surface.

* * * * *