EXERCISE SYSTEM WITH POSITIONING MARKINGS

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ABSTRACT

An exercise system with positioning markings for aiding in identifying proper positioning of the body while performing a wide range of exercises. The exercise system with positioning markings generally includes a carriage slidably secured between a pair of rails. A first platform may be positioned at a first end of the exercise machine and a second platform may be positioned at a second end of the exercise machine. One or more handle assemblies may also be provided for use in various exercises. A longitudinal carriage marking extends between the first and second ends of the carriage and a plurality of cross carriage markings extend perpendicular to the longitudinal carriage marking to ease identification of different points and areas on the carriage during exercise. Platform markings and handle markings may also be included. Reference characters may also be positioned on or around the various markings to aid in identifying their locations.
EXERCISE SYSTEM WITH POSITIONING MARKINGS

CROSS REFERENCE TO RELATED APPLICATIONS

[0001] I hereby claim benefit under Title 35, United States Code, Section 120 of U.S. patent application Ser. No. 13/924,088 filed Jun. 21, 2013. This application is a continuation-in-part of the Ser. No. 13/924,088 application. The Ser. No. 13/924,088 application is currently pending. The Ser. No. 13/924,088 application is hereby incorporated by reference into this application.

[0002] I hereby claim benefit under Title 35, United States Code, Section 119(e) of U.S. provisional patent application Ser. No. 61/806,655 filed Mar. 29, 2013. The 61/806,655 application is currently pending. The 61/806,655 application is hereby incorporated by reference into this application.


STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT

[0004] Not applicable to this application.

BACKGROUND OF THE INVENTION

[0005] 1. Field of the Invention

[0006] The present invention relates generally to an exercise machine and more specifically it relates to an exercise system with positioning markings for aiding in identifying proper positioning of the body while performing a wide range of exercises.

[0007] 2. Description of the Related Art

[0008] Any discussion of the related art throughout the specification should in no way be considered as an admission that such related art is widely known or forms part of common general knowledge in the field.

[0009] Pilates apparatuses have been used for exercising since the 1920s, and are well known in the fitness industry. Named after its originator, Joseph Pilates, a Pilates apparatus is generally comprised of a substantially rectangular frame that supports two parallel rails at a nominal dimension above the floor. A carriage is mounted on the rails, and is slidable from one end of the apparatus towards the other end. Springs are attached between the frame and carriage, and provide resistance when the carriage is moved away from the end of the frame to which the springs are attached. During an exercise, a person places all or part of their body on the carriage, and moves the carriage against the resistance. The resistive force may be adjusted to a higher or lower resistance by attaching or detaching a plurality of springs between the frame and carriage. The fitness benefits of exercising against resistance on a slidable carriage help an exerciser increase both flexibility and strength.

[0010] The earliest Pilates apparatuses were merely comprised of a rectangular frame, two rails, a slidable carriage mounted on the rails, and springs attaching one end of the carriage to one end of the frame. Also called “reformers”, the apparatuses were used to help patients achieve strength and range of motion after accidents, injury, or surgery. The springs generated resistance for muscle training, and the carriage movement allowed users to stretch the major muscles.

[0011] Over the years, manufacturers sought to deliver more functionality than their competitors, and increasingly added features such as pull ropes attached to the carriage, threaded through pulleys so that exercisers could exercise their arms against the resistance springs. Foot bars were added so that an exerciser laying back-down on the carriage, with their feet pressing against the foot bar, could push the carriage away from the foot bar using leg force against the resistance—similar to the experience of laying back-down on the floor, and pushing the feet against a wall so that the person would ultimately push themselves away from the wall.

[0012] The improvements don’t stop there. Ropes threaded through pulleys incorporated foot slings for pulling or pushing against the resistance to exercise the leg muscles. There is virtually no end to the add-on features of Pilates apparatuses that connect in some dynamic way to the resistance spring force to promote exercising another muscle group.

[0013] Pilates exercise places great demand on the musculoskeletal system and requires good biomechanics to be successful and avoid injury. Today, Pilates is one of the fastest-growing fitness offerings and is practiced daily by millions of Americans. In any growing fitness trend that has a rush of new participants, there is also an increase in injuries suffered by new participants.

[0014] Well over one hundred different and discrete exercises can now be performed on a Pilates apparatus configured with the added resistance features, each exercise being focused on a different group of muscles. But with all of the feature enhancements, Pilates apparatuses have only become more complicated in their use, even for the well-informed Pilates user.

[0015] There is an optimum technique to use while exercising and avoid injury on a Pilates apparatus. Improper positioning on the apparatus not only results in an ineffectual workout, it increases the probability of injury during exercise. The height of 90 percent of the United States male population is between 5’ 4” and 6’ 1”. For females, the height range for 90 percent is roughly between 5’ 0” and 5’ 9”. Further, since any given Pilates apparatus should accommodate a height range of 5’ 0” to 6’ 1” of the exerciser, it is of paramount importance for an instructor to ensure that exercisers participating in a Pilates class, especially those males and females on the extreme opposite ranges of height, are positioned accurately on different Pilates apparatuses in order to maximize the benefits of the workout, and to prevent injuries.

[0016] The Consumer Product Safety Commission (CPSC) estimates that more than 50,000 people in the United Stated are treated in hospital emergency rooms each year after suffering injuries associated with gym exercise equipment. The injuries occurring most often are soft tissue injuries such as torn or strained ligaments, torn meniscus, strained tendons, muscle tears, sciatic pain, bulging or herniated discs, and ligament sprains. Philip Friedman and Gail Eisen, two students of Romana Kryzanowska, published the first modern book on Pilates, The Pilates Method of Physical and Mental Conditioning, in 1980 and in it they outlined six “principles of Pilates”.


Generally, new exercisers have no idea what muscles need conditioning, or what exercises will condition those muscles. They must be coached by an informed and capable trainer. The world’s largest fitness association, the IDEA Health and Fitness Association IDEA Health and Fitness Association adopted Friedman and Eisen’s six “principles of Pilates, including (1) centering, which requires holding specific muscles in order to maintain a static position while performing a Pilates exercise. Instructors must direct exercisers to establish and maintain proper alignment; (2) precision, which requires that exercisers must follow the trainer’s instructions exactly (one area in which precision is vital for Pilates injury prevention is core alignment); (3) control, which requires that exercisers must limit movement to their own midrange, where core alignment is not compromised (this is critical for injury prevention); (4) concentration, which requires that once an exerciser is properly positioned on the Pilates carriage, they should concentrate and visualize that position, and return to the center between each exercise; (5) flow, which encourages repetition of each exercise to reinforce good movement patterns and break exercises into smaller, more manageable parts as an approach to teach movement through the entire exercise; and (6) breathing, i.e., conscience and rhythmic inhalation and exhalation to help stabilize the trunk during exercise.

Except for “breathing”, all of these principles require that instructors position the exerciser accurately and precisely upon a Pilates apparatus prior to exercising. However, there is dangerous ambiguity surrounding the instructions to an exerciser. For instance, the cushioned mat of Pilates carriage, which are generally six to eight square feet in size, is typically covered in a solid color material, usually black. Thus, it is difficult to expect an exerciser to know precisely where to place their foot on the carriage when a trainer instructs them to “place the foot about three quarters of the way back from the front edge of the carriage, and just left of center”.

In any given Pilates class, many exercisers will invariably place their foot in the wrong location. The trainer must then walk around the room, and adjust every exerciser’s position before starting the next exercise. This delay frustrates the more informed exercisers, wastes valuable trainer time, and shortens the actual workout time. For this reason, professional fitness associations suggest limiting Pilates class sizes to reduce the total time required to ensure proper positioning of each and all of the students on the Pilates carriage.

Although the importance of proper positioning on the Pilates carriage is well-known to those skilled in the art of Pilates fitness training, there does not exist any method to help fitness trainers quickly and efficiently communicate body positioning to a class of exercisers. The ambiguity of instructions therefore militates smaller class sizes, and increases the risk of injury. These disadvantages created by the state of the art Pilates apparatuses and methods of teaching exercises thereupon are costly to the exerciser, trainer, and gym owner.

The commercial consequences created by feature-rich Pilates apparatuses and instruction ambiguity include lawsuits filed against gym owners or manufacturers of the exercise apparatus by injured exercisers. Also, fitness trainers teaching a variety of exercises during a Pilates class waste considerable time instructing the many class participants on how to properly position themselves on the machine prior to starting the next exercise. In fact, during a 45 minute exercise class, trainers may change exercises every 2-3 minutes. It often takes another 2-3 minutes to coach each class member on position changes in preparation for the next exercise. This creates frustrated participants who have to spend nearly 50 percent of the class time being properly positioned on the apparatus for each exercise.

On the other hand, a significant commercial advantage may be realized by applying a specifically designed set of markings on a Pilates apparatus, and correlating those markings to proper positioning for any given exercise to be performed. Such an apparatus and method would help ensure that the trainer can quickly instruct the exerciser to accurately position themselves on the apparatus for any particular exercise, would save considerable time in transitioning from one exercise to another, and would reduce the likelihood of injury that would otherwise result from the exercise using improper technique.

Because of the inherent problems with the related art, there is a need for a new and improved exercise system with positioning markings for aiding in identifying proper positioning of the body while performing a wide range of exercises.

**BRIEF SUMMARY OF THE INVENTION**

The invention generally relates to an exercise system which includes an exercise machine such as a Pilates machine which includes a carriage slidably secured between a pair of rails. A first platform may be positioned at a first end of the exercise machine and a second platform may be positioned at a second end of the exercise machine. One or more handle assemblies may also be provided for use in various exercises. A longitudinal carriage marking extends between the first and second ends of the carriage and a plurality of cross carriage markings extend perpendicular to the longitudinal carriage marking to ease identification of different points and areas on the carriage during exercise. Platform markings and handle markings may also be included. Reference characters may also be positioned on or around the various markings to aid in identifying their locations.

There has thus been outlined, rather broadly, some of the features of the invention in order that the detailed description thereof may be better understood, and in order that the present contribution to the art may be better appreciated. There are additional features of the invention that will be described hereinafter and that will form the subject matter of the claims appended hereto. In this respect, before explaining at least one embodiment of the invention in detail, it is to be understood that the invention is not limited in its application to the details of construction or to the arrangements of the components set forth in the following description or illustrated in the drawings. The invention is capable of other embodiments and of being practiced and carried out in various ways. Also, it is to be understood that the phraseology and terminology employed herein are for the purpose of the description and should not be regarded as limiting.

**BRIEF DESCRIPTION OF THE DRAWINGS**

Various other objects, features and attendant advantages of the present invention will become fully appreciated as the same becomes better understood when consid-
ered in conjunction with the accompanying drawings, in which like reference characters designate the same or similar parts throughout the several views, and wherein:

[0027] FIG. 1 is an upper perspective view of the present invention.

[0028] FIG. 2 is a top view of a carriage which includes both markings and reference characters.

[0029] FIG. 3 is a top view of a carriage which includes only markings.

[0030] FIG. 4 is a top view of a carriage which includes only reference characters comprised of symbols.

[0031] FIG. 5 is a side view illustrating a first exercise being performed upon an exercise machine.

[0032] FIG. 6 is a side view of body positioning on the carriage while the first exercise is being performed.

[0033] FIG. 7 is a side view illustrating a second exercise being performed upon an exercise machine.

[0034] FIG. 8 is a side view of knee positioning on the carriage while the second exercise is being performed.

[0035] FIG. 9 is a side view illustrating a third exercise being performed upon an exercise machine.

[0036] FIG. 10 is a side view of shoulder positioning on the carriage while the third exercise is being performed.

[0037] FIG. 11 is a side view illustrating a fourth exercise being performed upon an exercise machine.

[0038] FIG. 12 is a side view of leg positioning on the carriage while the third exercise is being performed.

[0039] FIG. 13 is a side view illustrating a fourth exercise being performed upon an exercise machine.

[0040] FIG. 14 is a side view of foot positioning on the carriage while the fourth exercise is being performed.

[0041] FIG. 15 is a side view illustrating a fifth exercise being performed upon an exercise machine.

[0042] FIG. 16 is a side view of body positioning on the carriage while the fifth exercise is being performed.

[0043] FIG. 17 is a side view illustrating a sixth exercise being performed upon an exercise machine.

[0044] FIG. 18 is a side view of foot positioning on the carriage while the sixth exercise is being performed.

[0045] FIG. 19 is a side view illustrating a seventh exercise being performed upon an exercise machine.

[0046] FIG. 20 is a side view of leg positioning on the carriage while the seventh exercise is being performed.

[0047] FIG. 21 is a side view illustrating an eighth exercise being performed upon an exercise machine.

[0048] FIG. 22 is a side view of foot positioning on the carriage while the eighth exercise is being performed.

[0049] FIG. 23 is a side view illustrating a ninth exercise being performed upon an exercise machine.

[0050] FIG. 24 is a side view of knee positioning on the carriage while the ninth exercise is being performed.

**DETAILED DESCRIPTION OF THE INVENTION**

**A. Overview**

[0051] Turning now descriptively to the drawings, in which similar reference characters denote similar elements throughout the several views, FIGS. 1 through 24 illustrate a exercise system with positioning markings 10, which comprises an exercise machine 20 such as a Pilates machine which includes a carriage 30 slidably secured between a pair of rails 25, 26. A first platform 60 may be positioned at a first end 22 of the exercise machine 20 and a second platform 70 may be positioned at a second end 23 of the exercise machine 20. One or more handle assemblies 50, 53, 56, 57 may also be provided for use in various exercises. A longitudinal carriage marking 40 extends between the first and second ends 33, 34 of the carriage 30 and a plurality of cross carriage markings 41, 42, 43, 44, 45, 46, 47 extend perpendicular to the longitudinal carriage marking 40 to ease identification of different points and areas on the carriage 30 during exercise. Platform markings 66, 67, 76, 77 and handle markings 51, 54 may also be included. Reference characters 49, 68, 78 may also be positioned on or around the various markings 41, 42, 43, 44, 45, 46, 47, 51, 54, 66, 67, 76, 77 to aid in identifying their locations.

**B. Exercise Machine**

[0052] FIG. 1 illustrates an exemplary exercise machine 20 for use with the present invention. In particular, the present invention is preferably utilized within a Pilates exercise machine 20 as illustrated throughout the figures. While the figures and description illustrate and describe the exercise machine 20 as being comprised of a Pilates machine, it is appreciated that the present invention may be utilized in combination with other exercise machines which would benefit from markings 40 and/or characters 49 to aid with positioning of different parts of the body while exercising.

[0053] It should be further noted that while certain features and accessories of an exercise machine 20 are shown in the drawing, these references are for illustrative purposes only, and are not meant to be limiting. By virtue of the design fundamentals of exercise machines 20, and because a progressive resistance means is incorporated into the exercise machine 20 as a primary force against which exercises are performed, any number of known or unknown accessories could be added to the apparatuses with the same effect as the accessories and features shown.

[0054] As shown throughout the figures, an exemplary exercise machine 20 includes a frame 21 having a first end 22 and a second end 23. The exercise machine 20 includes at least one rail 25, 26 extending between the first and second ends 22, 23 on which a carriage 30 slidably moves. In a preferred embodiment shown in the figures, a first rail 25 and a second rail 26 each extend between the first and second ends 22, 23 of the frame 21 in a parallel manner with respect to each other.

[0055] A carriage 30 is movably secured to the rails 25, 26 such that the carriage 30 may be slid, rolled, or otherwise moved between the first end 22 and the second end 23 of the frame 21. The rails 25, 26 are oriented longitudinally along the moving axis of the exercise machine 20. One or more springs 27 are included to impart a biasing force against which the carriage 30 is moved during exercise. For some exercises, no springs 27 may be engaged, and for other exercises, one, or a plurality of springs 27 may be engaged to create the preferred resistance force. In its resting state, the carriage is positioned substantially closer to the first end 22 of the exercise machine 20.

**C. Carriage**

[0056] FIG. 2 best illustrates the overall structure of the carriage 30 used with the present invention, with carriage markings 40, 41, 42, 43, 44, 45, 46, 47 and carriage reference characters 49 positioned on an upper surface 31 of
the carriage 30 to aid with performing a wide range of exercises. FIG. 3 provides an illustration of an embodiment of the present invention which solely utilizes carriage markings 40, 41, 42, 43, 44, 45, 46, 47. FIG. 4 illustrates an embodiment of the present invention which solely utilizes carriage reference characters 49.

[0057] As shown throughout the figures, the carriage 30 includes an upper surface 31, which contains the carriage markings 40, 41, 42, 43, 44, 45, 46, 47 and carriage reference characters 49. The upper surface 31 is adapted to move across the rails 25, 26 of the exercise machine 20. In one embodiment, the carriage 30 may include rollers for moving across the rails 25, 26 of the exercise machine 20. The overall structure and size of the carriage 30 may vary depending on the type of exercise machine 20 it is being used in combination with as well as depending on the needs of the exerciser 12 and particular application for which it is being used.

[0058] The carriage 30 may optionally include a pair of grab bars 37 to aid in gripping the carriage 30 during exercise. As best shown in FIGS. 1-3, a first grab bar 37 is positioned at a first side 35 of the carriage 30 and a second grab bar 37 is positioned at a second side 36 of the carriage 30.

[0059] The carriage 30 may also include one or more carriage openings 38 penetrating through an otherwise substantially solid platform. The carriage openings 38 may be used to access, attach or remove various accessories to the carriage 30, but may also be considered a carriage marking 40, 41, 42, 43, 44, 45, 46, 47 for some uses. During certain exercises, the exerciser 12 would be instructed to place their hands or feet through the carriage openings 38, or against the walls of the carriage openings 38 as grabbing points in order to perform an exercise.

[0060] The numbering, placement, size, shape, and configuration of the carriage openings 38 for vary in different embodiments of the present invention. Thus, the exemplary figures should not be construed as limiting on the scope of the present invention with respect to those qualities of the carriage openings 30. In the embodiment shown in the figures, a carriage opening 38 is included at each other corner of the carriage 30. Additional carriage openings 38 are also included between the first and second sides 35, 36 of the carriage 30 adjacent to its first end 33.

D. Carriage Markings and Reference Characters

[0061] The carriage 30 of the present invention will preferably include a plurality of carriage markings 40, 41, 42, 43, 44, 45, 46, 47 and/or carriage reference characters 49 as shown in the figures. Use of the terms “markings” and “reference characters” throughout the present disclosure (including with respect to markings and reference characters on the handle assemblies 50, 53, 56, 57 and/or platforms 60, 70) shall have the same effect as other common terms such as signs, indicators, indicia, characteristics, features, images or labels applied to an exercise machine 20 as reference points for an exerciser 12 to position or engage with the machine 20 in order to properly perform an exercise.

[0062] Carriage reference characters 49 include numbers 49 placed upon the upper surface 31 of the carriage 30, such numbers 49 indicating locations upon the carriage 30 at which parts of the body should be placed in order to properly perform an exercise. The use of only numbers 49, or only lines 40, 41, 42, 43, 44, 45, 46, 47, or only other markings/reference characters 40, 41, 42, 43, 44, 45, 46, 47, 49 such as symbols may be used at the exclusion of other types of markings/reference characters 40, 41, 42, 43, 44, 45, 46, 47, 49, or any combination of markings/reference characters 40, 41, 42, 43, 44, 45, 46, 47, 49 may be used together.

[0063] Markings 40, 41, 42, 43, 44, 45, 46, 47 and/or reference characters 49 may be oriented such that they may be read and understood by an exerciser 12 positioned at the first end 33 of the carriage 30, at the second end 34 of the carriage 30 or from any location upon or around the carriage 30. There is no limitation to the position or orientation of the markings 40, 41, 42, 43, 44, 45, 46, 47 and/or reference characters 49 so long as they can be reasonably viewed and understood by an exerciser 12.

[0064] Further, although not shown, markings/reference characters 40, 41, 42, 43, 44, 45, 46, 47, 49 may be of one or more colors so that they are readily visible against the color of the exercise machine 20, and certain markings/reference characters 40, 41, 42, 43, 44, 45, 46, 47, 49 may be different colors from other markings/reference characters 40, 41, 42, 43, 44, 45, 46, 47, 49. Instructions may refer to one color or the other color for placement of the body, but it should be understood that unique colors are considered as markings/reference characters 40, 41, 42, 43, 44, 45, 46, 47, 49 that may be different from the other visual structures of the markings/reference characters 40, 41, 42, 43, 44, 45, 46, 47, 49.

[0065] FIG. 2 best illustrates exemplary carriage markings 40, 41, 42, 43, 44, 45, 46, 47 and carriage reference characters 49 positioned along the upper surface 31 of the carriage 30. The carriage markings 40, 41, 42, 43, 44, 45, 46, 47 are utilized in determining proper placement of various body parts of the exerciser 12 while performing various exercises. The shape, size, configuration and number of carriage markings 40, 41, 42, 43, 44, 45, 46, 47 is exemplary and should not be construed as limiting on the scope of the present invention.

[0066] The carriage markings 40, 41, 42, 43, 44, 45, 46, 47 may be utilized to define one or more zones upon the upper surface 31 of the carriage 30. These zones may be referenced by instructions or by the exerciser 12 in body positioning during performance of various exercises. Each zone may be identified by a reference character 49 to ease identification of the relevant zone when providing instructions to an exerciser 12.

[0067] The carriage markings 40, 41, 42, 43, 44, 45, 46, 47 may be comprised of any type of marking or indicia, including printed lines, grooves, ribs, stickers, decals, and the like which are capable of identifying an area or location on the upper surface 31 of the carriage 30. While the carriage markings 40, 41, 42, 43, 44, 45, 46, 47 are illustrated as lines traversing the upper surface 31 of the carriage 30 in various directions, the carriage markings 40, 41, 42, 43, 44, 45, 46, 47 need not necessarily be comprised of straight lines. Carriage markings 40, 41, 42, 43, 44, 45, 46, 47 shown includes lines placed along the longitudinal centerline parallel to the moving axis of the carriage 30 upon the rails 25, 26 of an exercise machine 20, as well as lines perpendicular to the centerline. However, carriage markings 40, 41, 42, 43, 44, 45, 46, 47 may be a single line or multiple lines.

[0068] In a preferred embodiment as best shown in FIG. 2, the carriage 30 includes a longitudinal carriage marking 40 which bisects the upper surface 31 between its first side 35 and second side 36. The longitudinal carriage marking 40
may be comprised of a line, lines or other feature which indicates a central, longitudinal area of the upper surface 31 of the carriage 30. The longitudinal carriage marking 40 preferably extends from the first end 33 to the second end 34 of the carriage 30 at the approximate mid-point between its first side 35 and second side 36. The longitudinal carriage marking 40 is preferably oriented longitudinally along the moving axis of the exercise machine 20.

[0069] As shown in FIG. 2, the carriage 30 also preferably includes one or more cross carriage markings 41, 42, 43, 44, 45, 46, 47 which each extend in a perpendicular direction with respect to the longitudinal carriage marking 40. In the exemplary embodiment shown in the figures, a first cross carriage marking 41 extends perpendicularly across the longitudinal carriage marking 40 at a distance from its first end 33 which is approximately 1/8 of the length of the carriage 30. A second cross carriage marking 42 extends perpendicularly across the longitudinal carriage marking 40 at a distance from its first end 33 which is approximately 1/4 of the length of the carriage 30. A third cross carriage marking 43 extends perpendicularly across the longitudinal carriage marking 40 at a distance from its first end 33 which is approximately 1/8 of the length of the carriage 30.

[0070] A fourth cross carriage marking 44 extends perpendicularly across the longitudinal carriage marking 40 at a distance from its first end 33 which is approximately 1/2 of the length of the carriage 30. A fifth cross carriage marking 45 extends perpendicularly across the longitudinal carriage marking 40 at a distance from its first end 33 which is approximately 5/8 of the length of the carriage 30. A sixth cross carriage marking 46 extends perpendicularly across the longitudinal carriage marking 40 at a distance from its first end 33 which is approximately 3/4 of the length of the carriage 30. A seventh cross carriage marking 47 extends perpendicularly across the longitudinal carriage marking 40 at a distance from its first end 33 which is approximately 5/8 of the length of the carriage 30.

[0071] The lengths of each of the cross carriage markings 41, 42, 43, 44, 45, 46, 47 may vary. In the embodiment shown in the figures, the second, fourth, and sixth cross carriage markings 42, 44, 46 each extend across the upper surface 31 of the carriage 30 for substantially the full length between its first side 35 and second side 36. The first, third, fifth, and seventh cross carriage markings 41, 43, 45, 47 each extend only a short distance in either direction from the longitudinal carriage marking 40.

[0072] Cross carriage reference characters 49 may also be positioned at various locations on the upper surface 31 of the carriage 30 as best shown in FIG. 2. The reference characters 49 may be comprised of numbers, letters, or any other symbols capable of identifying different points on the upper surface 31 of the carriage 30. The reference characters 49 may be utilized to identify the carriage markings 40, 41, 42, 43, 44, 45, 46, 47 during instruction of exercises being performed on the exercise machine 20. The spacing, size, font, and nature of the reference characters 49 may vary in different embodiments.

[0073] In a preferred embodiment as shown in FIG. 2, a pair of reference characters 49 are utilized to represent the cross carriage markings 41, 47 closest to either end 33, 34 of the carriage 30. A reference character 49 identified by the number “11” is positioned adjacent to the intersection of the seventh cross carriage marking 47 and the longitudinal carriage marking 40. A reference character 49 identified by the number “11” is positioned adjacent to the intersection of the first cross carriage marking 41 and the longitudinal carriage marking 40.

[0074] A plurality of reference characters 49 are preferably positioned along the sixth cross carriage marking 46. A reference character 49 identified by the number “2” is positioned along the sixth cross carriage marking 46 adjacent to the first side 35 of the carriage 30. A reference character 49 identified by the number “3” is positioned adjacent to the intersection of the sixth cross carriage marking 46 and the longitudinal carriage marking 40. A reference character 49 identified by the number “4” is positioned along the sixth cross carriage marking 46 adjacent to the second side 36 of the carriage 30.

[0075] A plurality of reference characters 49 are also preferably positioned along the fourth cross carriage marking 44. A reference character 49 identified by the number “5” is positioned along the fourth cross carriage marking 44 adjacent to the first side 35 of the carriage 30. A reference character 49 identified by the number “6” is positioned adjacent to the intersection of the fourth cross carriage marking 44 and the longitudinal carriage marking 40. A reference character 49 identified by the number “7” is positioned along the fourth cross carriage marking 44 adjacent to the second side 36 of the carriage 30.

[0076] A plurality of reference characters 49 are also preferably positioned along the second cross carriage marking 42. A reference character 49 identified by the number “8” is positioned along the second cross carriage marking 42 adjacent to the first side 35 of the carriage 30. A reference character 49 identified by the number “9” is positioned adjacent to the intersection of the second cross carriage marking 42 and the longitudinal carriage marking 40. A reference character 49 identified by the number “10” is positioned along the second cross carriage marking 42 adjacent to the second side 36 of the carriage 30.

[0077] It should be stressed that the figures and preceding description are merely for exemplary purposes. The positioning of the carriage reference characters 49 may vary widely in different embodiments of the present invention, so long as the reference characters 49 may be utilized to identify various locations, markings, or zones on the upper surface 31 of the carriage 30.

E. Handle Assemblies and Handle Markings

[0078] One or more handle assemblies 50, 53, 56, 57 may be located on the exercise machine 20. The handle assemblies 50, 53, 56, 57 may be comprised of various types of handles known in the art and may be adapted to be grasped by the hands of an exerciser 12 or to be rested upon by various other body parts of the exerciser 12, such as feet or legs.

[0079] In the embodiment shown in the figures, a first handle assembly 50 is positioned adjacent to the first rail 25 and first end 22 of the exercise machine 20. A second handle assembly 53 is positioned adjacent to the second rail 26 and first end 22 of the exercise machine 20. A third handle assembly 56 is positioned adjacent to the first rail 25 and second end 23 of the exercise machine 20 and a fourth handle assembly 57 is positioned adjacent to the second rail 26 and second end 23 of the exercise machine 20.

[0080] The handle assemblies 50, 53, 56, 57 may contain various adjusting features that allow them to be rotated, pivoted, or otherwise moved in order to perform certain
exercises, or to move them out of the way to perform other exercises. Because certain exercises require the exerciser 12 to grasp the handles as certain points, handle markings 51, 54 may be placed upon the handles.

[0081] One or more of the handle assemblies 50, 53, 56, 57 may include handle markings 51, 54 as best shown in FIG. 1. These markings 51, 54 are novel improvements over traditional exercise machines 20. Exercisers 12 are instructed to grab the handle assemblies 50, 53, 56, 57 at specific locations to perform certain exercises properly and safely. Use of the handle markings 51, 54 by an exerciser 12 is intended to correlate to the proper positioning of the body during the performance of any specifically instructed exercise intended to strength or increase flexibility of the exerciser’s 12 body.

[0082] As shown in the figures, a first handle marking 51 is positioned on the first handle assembly 50 and a second handle marking 54 is positioned on the second handle assembly 53. While the figures do not illustrate handle markings 51, 54 on the third or fourth handle assemblies 56, 57, it should be appreciated that any or all of the handle assemblies 50, 53, 56, 57 may include handle markings 51, 54.

[0083] It should be appreciated that the nature of the markings 51, 54 may vary widely in different embodiments. The markings 51, 54 may be comprised of lines, double lines as shown, or any other number of lines. The markings 51, 54 may be comprised of decals, stickers, notches, grooves, or any other feature which would serve to identify a position on the handle assembly 50, 53, 56, 57.

[0084] The figures illustrate each handle marking 51, 54 as being comprised of a pair of parallel lines extending around the respective handle assembly 50, 53. It should be known that although a double-line handle marking 51, 54 is shown only on the pair of handle assemblies 50, 53 at the first end 22 of the exercise machine 20, handle markings 51, 54 may take any of the previously described forms, and one or more handle markings 51, 54 may be placed upon any or all of the handle assemblies 50, 53, 56, 57 located at either end 22, 23 of the exercise machine 20, or upon the grab bars 37 of the carriage 30.

F. Platforms

[0085] A first platform 60 may be located at the first end 22 of the exercise machine 20. The upper surface 61 of the first platform 60 lies substantially in the same horizontal plane as the upper surface 31 of the carriage 30, and in some exercises is used to support the exerciser 12. As will be shown, the first platform 60 may be leaned upon, stood upon, or otherwise used by an exerciser 12 to perform an exercise.

[0086] The first platform 60 may include first platform markings 66, 67 and/or first platform reference characters 68. Exercisers 12 are instructed to position themselves upon certain of the first platform markings 66, 67 and/or first platform reference characters 68 for and during the performance of certain exercises. The nature of the first platform markings 66, 67 and first platform reference characters 68 vary widely, and statements made above with reference to the nature and configuration of the carriage markings 40, 41, 42, 43, 44, 45, 46, 47 and carriage reference characters 49 apply equally to the platform markings 66, 67.

[0087] In a preferred embodiment as best shown in FIG. 1, the first platform 60 includes a first platform longitudinal marking 66 which bisects the first platform 60 between its first side 64 and second side 65. The first platform longitudinal marking 66 may be comprised of a line, lines or other feature which indicates a central, longitudinal area of the upper surface 61 of the first platform 60. The first platform longitudinal marking 66 preferably extends from the first end 62 to the second end 63 of the first platform 60 at the approximate mid-point between its first side 64 and second side 65. The first platform longitudinal marking 66 is preferably oriented longitudinally along the moving axis of the exercise machine 20.

[0088] As shown in FIG. 1, the first platform 60 may also include one or more first platform cross markings 67. The first platform cross marking 67 extends perpendicular to the first platform longitudinal marking 66 and may be comprised of a line, lines, or other feature which is visible and identifiable by an exerciser while the present invention is in use.

[0089] First platform reference characters 68 may also be positioned at various locations on the upper surface 61 of the first platform 60 as best shown in FIG. 1. The first platform reference characters 68 may be comprised of numbers, letters, or any other symbols capable of identifying different points on the upper surface 61 of the first platform 60. The first platform reference characters 68 may be utilized to identify the first platform markings 66, 67 during instruction of exercises being performed on the exercise machine 20. The spacing, size, font, and nature of the first platform reference characters 68 may vary in different embodiments.

[0090] A second platform 70 may be located at the second end 23 of the exercise machine 20. The upper surface 71 of the second platform 70 lies substantially in the same horizontal plane as the upper surface 31 of the carriage 30, and in some exercises is used to support the exerciser 12. As will be shown, the second platform 70 may be leaned upon, stood upon, or otherwise used by an exerciser 12 to perform an exercise.

[0091] The second platform 70 may include second platform markings 76, 77 and/or second platform reference characters 78. Exercisers 12 are instructed to position themselves upon certain of the second platform markings 76, 77 and/or second platform reference characters 78 for and during the performance of certain exercises. The nature of the second platform markings 76, 77 and second platform reference characters 78 may vary widely, and statements made above with reference to the nature and configuration of the carriage markings 40, 41, 42, 43, 44, 45, 46, 47 and carriage reference characters 49 apply equally to the second platform markings 76, 77.

[0092] In a preferred embodiment as best shown in FIG. 1, the second platform 70 includes a second platform longitudinal marking 76 which bisects the second platform 70 between its first side 74 and second side 75. The second platform longitudinal marking 76 may be comprised of a line, lines or other feature which indicates a central, longitudinal area of the upper surface 71 of the second platform 70. The second platform longitudinal marking 76 preferably extends from the first end 72 to the second end 73 of the second platform 70 at the approximate mid-point between its first side 74 and second side 75. The second platform longitudinal marking 76 is preferably oriented longitudinally along the moving axis of the exercise machine 20.

[0093] As shown in FIG. 1, the second platform 70 may also include one or more second platform cross markings 77.
The second platform cross marking 77 extends perpendicular to the second platform longitudinal marking 77 and may be comprised of a line, lines, or other feature which is visible and identifiable by an exerciser 12 while the present invention is in use.

[0094] Second platform reference characters 78 may also be positioned at various locations on the upper surface 71 of the second platform 70 as best shown in FIG. 1. The second platform reference characters 78 may be comprised of numbers, letters, or any other symbols capable of identifying different points on the upper surface 71 of the second platform 70. The second platform reference characters 78 may be utilized to identify the second platform markings 76, 77 during instruction of exercises being performed on the exercise machine 20. The spacing, size, font, and nature of the second platform reference characters 78 may vary in different embodiments.

[0095] Although two platforms 60, 70 are shown, it should be noted that an exercise machine 20 may have only one platform 60, two platforms 60, 70, or in some instances, no platforms. In some embodiments, additional platforms may be included. During a workout, exercisers 12 would be instructed to use certain of these platform markings 66, 67, 76, 77 and/or platform reference characters 68, 78 to properly and safely perform certain exercises.

G. Operation of Preferred Embodiment

[0096] An instruction is a method of teaching an exercise, such instructions being able to take one of many forms, such as verbal instructions from a person teaching an exercise, written instructions, instructions as indicia, or recorded voice, video, or multimedia instructions.

[0097] With regard to describing the human anatomy, and positioning of the human body upon or engaging with an exercise machine 20, it should be noted that while terms such as body, hands, feet, shoulders, head, knees, elbows and other references to parts of the human body are made, these anatomical references are not meant to be limiting, and some exercises may require specific use of or placement of other parts of the body in order to properly follow instructions, or to efficiently or safely use an exercise machine 20.

[0098] It should be noted that not all muscles engaged in the referenced exercises are mentioned, however, to broadly illustrate the major muscles engaged during an exercise, some muscles are specifically referenced. The lack of exhaustive detailing of the muscles engaged in any illustrative exercises does not mean that other muscles are not engaged in the exercise.

[0099] Still further, although representative exercise sequences are listed for many of the exercises and exercise alignment positions shown in the drawings, these sequences are merely presented to illustrate the inextricable connection between positioning of the body upon certain indicia, and the proper performance of the exercise following instructions that reference the indicia.

[0100] The different markings 40, 41, 42, 43, 44, 45, 46, 47, 51, 54, 66, 67, 76, 77 and/or reference characters 49, 68, 78 of the present invention may be utilized to identify exercise alignment positions that may be referenced for placement of various parts of the body near, around, or upon certain locations on the upper surface 31 of the carriage 30. Other sequences may replace the sequenced references without deviating from the scope and intent of indicia-referenced exercise sequences.

[0101] While many of the illustrations and descriptions reference different markings 40, 41, 42, 43, 44, 45, 46, 47, 51, 54, 66, 67, 76, 77 and/or reference characters 49, 68, 78 that correlate to positioning of an exerciser 12 on an exercise machine 20 based on their height, or relative size, the size reference is not meant to be limiting, and the use of markings 40, 41, 42, 43, 44, 45, 46, 47, 51, 54, 66, 67, 76, 77 and/or reference characters 49, 68, 78 may apply to the proper positioning for an exercise regardless of the size or height of an individual exerciser 12.

[0102] It must also be realized, and would be instantly obvious to one skilled in the art, that the types of exercises that can be performed upon an exercise machine 20, and the variations of those exercises are innumerable, and that regardless of the type of exercise, there exists an optimum positioning of the body upon the exercise machine 20 in order to achieve maximum benefit from the exercise, while minimizing the occurrence of injury. The markings 40, 41, 42, 43, 44, 45, 46, 47, 51, 54, 66, 67, 76, 77 and/or reference characters 49, 68, 78 shown, when used to position the body upon, or engaging with the exercise machine 20, represent a new and novel system and method to safely and efficiently performing a wide range of exercises.

[0103] As will become obvious to one skilled in the art, the proper positioning of different height exercisers 12 on the same exercise machine 20 requires importantly different starting alignment positions in order to safely and efficiently complete, or instruct on the performance of the exercise. Whether the instructions are being delivered to the exerciser 12 verbally by an instructor, or whether they were printed on an instruction page, the exerciser 12 will know precisely how to position themselves on the appropriate markings 40, 41, 42, 43, 44, 45, 46, 47, 51, 54, 66, 67, 76, 77 to perform the particular exercise.

[0104] FIG. 5 is an exemplary diagram showing a side view of an exercise machine 20 with a representative illustration of an exerciser 12 performing an upper body pushing type of exercise while positioned face-up with their back laying upon the carriage 30 and their hands grasping the third and fourth handle assemblies 56, 57. This exercise simulates an above-the-head barbell press often performed by weightlifters in a gym, but has the added advantage of safety.

[0105] In order to perform the exercise shown, the exerciser 12 is instructed to first lay upon the carriage 30 facing away upwardly. The instructions direct the exerciser 12 to position their shoulder blades upon a specific cross carriage marking 41, 42, 43, 44, 45, 46, 47 on the carriage 30, with their body centered along the longitudinal carriage marking 40. For exercisers 12 of shorter stature, they may be instructed to place their shoulder blades over the sixth cross carriage marking 46. For exercisers 12 of a medium stature, they may be instructed to place their shoulder blades over the fifth cross carriage marking 45. For exercisers 12 of a taller stature, they may be instructed to place their shoulder blades over the fourth cross carriage marking 44. FIG. 6 illustrates an exerciser 12 of shorter stature with their shoulder blades positioned over the sixth cross carriage marking 46.

[0106] In any case, the carriage reference characters 49 may be utilized to aid in describing proper positioning to the exerciser 12. The carriage markings 40, 41, 42, 43, 44, 45, 46, 47 and carriage reference characters 49 ensure proper body placement upon the carriage 30 to carry out the
exercise shown. With the body properly positioned on the carriage 30, the third and fourth handle assemblies 56, 57 may be grasped with the palms facing upwardly while the bottoms of the person’s 12 feet will be positioned at the first end 33 of the carriage 30, with the knees bent for maximum comfort. The exerciser 12 may begin the exercise by pulling with the hands against the handle assemblies 56, 57, thereby exerting force against the springs 27, and moving the carriage 30 in a direction towards the feet. This exercise works the shoulders, triceps, upper chest, and a variety of smaller muscles. The exerciser 12 may continue pushing against the handle assemblies 56, 57 until the arms are fully extended above the head, and then hold the position for a set amount of time. After the hold, the exerciser 12 may slowly release the pressure on the handle assemblies 56, 57 and allow the carriage 30 to return to its resting position. This sequence may be repeated a number of times prior to finishing the routine with the carriage 30 in the starting position.

Although instructions are not shown, to perform the exercise shown, the exerciser 12 is instructed to refer to the carriage markings 41, 42, 43, 44, 45, 46, 47, such as by reference to the carriage reference characters 49, and substantially follow the sequence described herein. First, facing the first end 22 of the exercise machine 20, the knees are placed on the instructed cross carriage marking 41, 42, 43, 44, 45, 46, 47, and spaced equally on either side of the longitudinal carriage marking 40 of the carriage 30.

For exercisers 12 of a shorter stature, the knees are placed on the second cross carriage marking 42. For exercisers 12 of a medium stature, the knees are placed on the fourth cross carriage marking 44. For exercisers 12 of a taller stature, the knees are placed on the sixth cross carriage marking 46. With each hand, the first and second handle assemblies 50, 53 are grasped and the exercise is begun by pulling on the handle assemblies 50, 53 using the stomach muscles to move the carriage 30 toward the hands. The spring 27 tension selected should allow the knees to be brought forward such that the exerciser 12 is kneeling upright at the end of the first half of the exercise cycle. If this is too difficult, or if it is too easy, the spring 27 tension may be adjusted. To complete the second half of the exercise cycle, the spring tension is allowed to pull the carriage 30 back towards the second end 23, while resistance is applied to the retracting carriage 30 with the stomach muscles. The exercise may then be repeated.

This exercise may be conducted two times; once for the right side, and once for the left side of the body. For an exerciser 12 of shorter stature, the knee is placed on the third cross carriage marking 43 either to the right or left of the longitudinal carriage marking 40. For an exerciser 12 of medium stature, the knee is placed on the fourth cross carriage marking 44 either to the right or left of the longitudinal carriage marking 40. For an exerciser 12 of taller stature, the knee is placed on the fifth cross carriage marking 45 either to the right or left of the longitudinal carriage marking 40. The placement of the knee on either side of the longitudinal carriage marking 40 is determined by which knee is being used: the right knee will be placed to the right of the longitudinal carriage marking 40 and the left knee will be placed to the left of the longitudinal carriage marking 40. FIG. 12 illustrates one such positioning upon the carriage 30.

The foot of the leg not placed on the carriage 30 is positioned on the floor halfway between the carriage 30 and the first end 22 of the exercise machine 20. The exercise is begun by pulling slowly with the hands grasping the handle assemblies 50, 53, and at the same time, with the leg on the carriage 30, pulling the carriage 30 towards the hands while
also engaging the muscles of the opposite leg while keeping the foot stationary upon the floor. When the upper leg of the leg on the carriage 30 is straight up and down, movement is stopped and the position is held. The carriage 30 may be allowed to slowly return and the exercise repeated on the same or opposite leg.

[0117] FIG. 13 is an exemplary diagram showing a side view of an exercise machine 20 with a representative illustration of an exerciser 12 performing an exercise while positioning their left foot upon the first platform 60 of the exercise machine 20, and their right foot positioned upon the carriage 30. For illustrative purposes, the exerciser 12 is holding and balancing an additional weight 13 to increase the overall intensity of the exercise. This exercise is an adductor-pull, working the adductor magnus, adductor longus, adductor brevis, pectineus, and gracilis, together commonly referred to as the groin muscles, to increase strength and muscle tone. This exercise requires precise positioning on the exercise machine 20 in order to obtain the proper benefits of the exercise, but more importantly to prevent injury.

[0118] To perform this exercise, the left foot is placed on the first platform 60, with the center of the foot being positioned at approximately the intersection of the first platform longitudinal marking 66 and the first platform cross marking 67. The right foot is placed upon the carriage 30 along the longitudinal carriage marking 40. For exercisers 12 of a shorter stature, the right foot is placed on the second cross carriage marking 42. For exercisers 12 of a medium stature, the right foot is placed on the third cross carriage marking 43. For exercisers 12 of a taller stature, the right foot is placed on the fourth cross carriage marking 44. FIG. 14 illustrates exemplary foot placement on the carriage 30.

[0119] The positioning of the foot upon the carriage 30 is a critical step in the set up and performance of the exercise if the exerciser 12 is to benefit from the intended workout, and further, to avoid injury during the exercise. Without the carriage markings 40, 41, 42, 43, 44, 45, 46, 47 to reference, finding the correct position to perform this exercise is a dangerous trial and error process, with a very high probability of establishing a wrong starting position. This could lead to a serious groin injury even before completing one cycle of the exercise. This injury would likely be compounded by the latsiusus dorsi muscles being hyper-extended and falling off of the exercise machine 20. To those skilled in the art, the novel and valuable advantages of the present invention would become immediately obvious. With the feet placed properly, the right leg is used to draw the carriage 30 toward the first platform 60. The carriage 30 is then allowed to slowly return to its starting position, and the exercise is repeated.

[0120] One skilled in the art will immediately understand that taller exercisers 12 have longer legs, and that the starting position for the right foot would be a greater distance from the left foot when compared to shorter exercisers 12. Further, by instructing exercisers 12 to place their foot in a position referenced by the proper carriage markings 40, 41, 42, 43, 44, 45, 46, 47 of the present invention, the chance for injury on the very first cycle of the exercise is removed or substantially reduced. These advantages would also become immediately obvious to one skilled in the art.

[0121] FIG. 15 is an exemplary diagram illustrating a side view of an exercise machine 20 with an illustration of an exerciser 12 performing an exercise while laying prone upon the carriage 30. In the figure, the exerciser’s 12 hands are grasping pulley handles 14 which are connected to the first end 22 of the exercise machine 20. The illustrative exercise being performed is an extended arm pull, equivalent to an exercise well known in gyms as an extended arm pull down performed on a weight machine. The muscles worked during this exercise are primarily restricted to the upper body, and more specifically to the latissimus dorsi, sometimes referred to as “lats”; and the trapezius, or “trapeze” muscle.

[0122] To perform this exercise, the exerciser 12 takes a position on the carriage 30 as instructed. For an exerciser 12 of shorter stature, the center of the shoulders is placed on the second cross carriage marking 42. For an exerciser 12 of a medium stature, the center of the shoulders is placed on the third cross carriage marking 43. For an exerciser 13 of a taller stature, the center of the shoulders is placed on the fourth cross carriage marking 44. The arms will be outstretched to extend perpendicular to the longitudinal carriage marking 40 and along the relevant cross carriage marking 42, 43, 44. FIG. 16 illustrates one such positioning for this exercise.

[0123] Following the establishment of correct body positioning upon the carriage 30, the pulley handles 14 are grasped with each hand and the feet and hands are raised slightly off of the carriage 30 and second platform 70. The hands are moved in a sweeping motion down toward the feet. This “butterfly” motion will move the carriage 30 against resistance toward the second end 23 of the exercise machine 20. At a point when the face is aligned and immediately above the first edge of the first platform 60, pulling is stopped and the position is held. The hands may then be moved in a sweeping motion in an opposite direction to return the carriage 30 to its starting position. This position may again be held, and the exercise repeated.

[0124] As would be immediately obvious to one skilled in the art, positioning a tall exerciser 12 on the carriage 30 too far towards the second end 23 could result in facial injury when the exerciser pulls the carriage 30 towards the second end 23, and hits their face on the stationary structure of the exercise machine 20. Similarly, it would be obvious to one skilled in the art that when a shorter exerciser 12 is positioned too far back on the carriage 30, more distant from the second end 23, they run the risk of overstretching the latissimus dorsi muscles 30 as they are hyper-extended over their head. This position can also cause shoulder injuries as the more extended, higher force starting position for the short exerciser 12 requires a pull-down movement using minor muscles, rather than the stronger latissimus dorsi.

[0125] Therefore, by combining the use of instructions with markings and/or reference characters 40, 41, 42, 43, 44, 45, 46, 47, 49, the present invention significantly reduces the chance of injury, and delivers the added commercial advantage of shortening the time that a class instructor spends ensuring that every exercising student in the class is properly position prior to the start of the exercise.

[0126] FIG. 17 is an exemplary diagram showing a side view of an exercise machine 20 with a representative illustration of an exerciser 12 performing an exercise while placing both feet together upon the carriage 30 so that they are aligned along an axis substantially perpendicular to the sliding, longitudinal axis of the carriage 30 with their hands grasping the first and second handle assemblies 50, 53. This exercise primarily targets the muscles comprising the
abdominal wall. More specifically, the illustrative exercise works the internal and external abdominal obliques, transversus abdominis, and the rectus abdominis. The exercise is performed in two phases, the first of which exercises one set of transverse abdominals and obliques, for instance, the left abdominal muscles, and a second phase that exercises the abdominal muscles on the opposite side, for instance, the right side abdominals.

Because of the seemingly awkward positioning for this effective exercise, it is important to ensure proper positioning prior to starting this exercise to minimize the likelihood of injury. Further, since many students in an exercise class would rarely have performed this type of exercise before their first class, if ever, an exorbitant amount of time is spent by the instructor to direct a class on how to properly position themselves on the apparatus, and again spends time checking each class member to ensure proper positioning before the start of the exercise.

By positioning the exerciser 12 using the markings and/or reference characters 40, 41, 42, 43, 44, 45, 46, 47, 49, the individual exercisers 12 benefit from a proper workout, and the class as a whole benefits from not stopping a workout session for prolonged periods while instructions are delivered.

To perform the exercise, the first and second handle assemblies 50, 53 are first grasped by the hands. The exerciser 12 then steps onto the carriage 30, positioning the back of the heel of one foot in alignment with the longitudinal carriage marking 40. For exercisers 12 of a shorter stature, the central axis of the foot is aligned with the second cross carriage marking 42 while keeping the back of the heel on the longitudinal carriage marking 40. For exercisers 12 of a medium stature, the central axis of the foot is aligned with the third cross carriage marking 43 while keeping the back of the heel on the longitudinal carriage marking 40. For exercisers 12 of a taller stature, the central axis of the foot is aligned with the fourth cross carriage marking 44 while keeping the back of the heel on the longitudinal carriage marking 40. The toes of the other foot are placed on the same cross carriage marking 42, 43, 44 as the first foot so that the toes are touching the heel of the first positioned foot. FIG. 18 illustrates exemplary positioning for this exercise.

The exercise cycle is begun by pulling the carriage 30 towards the first end 22 of the exercise machine 20. Concentration is not on pulling with the hands and arms but rather on the use of the abdominal muscles to tighten the waist, thereby pulling the feet towards the hands. This exercise uses a tight twisting motion. If the body is too extended in the starting position, the likelihood of injuring the smaller abdominal muscles is increased.

At a point when the abdominal muscles have fully contracted, and the carriage 30 is closest to the first end 22 of the exercise machine 20, movement is stopped and the position is held. The return path may then be slowly and deliberately begun by loosening the flex on the abdominal muscles until the carriage 30 has returned to its starting position. This position is held for a period of time, and the exercise may be repeated in opposite position.

One skilled in the art will immediately appreciate the advantages of the present invention when instructing an exerciser 12 to assume the awkward position for this exercise, and further will understand the importance of proper positioning to reduce the chance of injury, and increase the effectiveness of the workout.

FIG. 19 is an exemplary diagram illustrating a side view of an exercise machine 20 with a representative illustration of an exerciser 12 performing a stretching exercise while placing one knee and lower leg upon the carriage 30 and the other leg upon the second platform 70. The benefits of stretching muscles to increase circulation and mobility are well known in the industry. It is also well known that over-stretching can cause soft tissue injuries such as muscle or ligament tears, or may injure joints by extending them beyond their normal range of motion. Therefore, proper positioning is vitally important in order to realize the benefits of stretching, while reducing the likelihood of injury.

To perform this stretching exercise, the exerciser 12 first faces the second end 23 of the exercise machine 20 and holds the third and fourth handle assemblies 56, 57. Each knee is first positioned on either side of the longitudinal carriage marking 40 while keeping the knees together. For exercisers 12 of a shorter stature, both knees are aligned on top of the sixth cross carriage marking 46. For exercisers 12 of a medium stature, both knees are aligned on top of the fifth cross carriage marking 45. For exercisers 12 of a taller stature, both knees are aligned on top of the fourth cross carriage marking 44.

One leg is bent forward to place the knee upon the second platform 70 and against one of the handle assemblies 56, 57. The foot is moved across the body to rest the side of the foot on the second platform 70. The exerciser 12 then leans forward to place the elbows on the second platform cross marking 77. FIG. 20 is an exemplary illustration of this position.

The exercise cycle may be begun by pushing the carriage 30 away and towards the second end 23 of the exercise machine 20 while maintaining a forward-leaning position. The spreading movement of the legs is continued slowly until the inner thigh is felt to stretch. The movement is stopped before over-stretching to prevent injury. At the end of this movement, the position may be held then slowly released to allow the carriage 30 to return. The entire exercise may be repeated, with the legs switched, to allow for efficient stretching. One skilled in the art will immediately appreciate the benefits of stretching, and the advantages of the present invention to help exercisers 12 to quickly assume the correct positioning on the apparatus to maximize efficiency and prevent injury.

FIG. 21 is an exemplary diagram showing a side view of an exercise machine 20 with a representative illustration of an exerciser 12 performing an exercise while placing a left foot upon the carriage 30 and a right foot upon the first platform 60, with their hands grasping pulley handles 14 extending from the first end 22 of the exercise machine 20.

This illustrative exercise is a modification to a well-known fitness exercise called the lunge. In the drawing, the modified lunge combines stretching and muscle workout. More specifically, as the carriage 30 is moved along the rails 25, 26 towards the first end 22, the exerciser 12 is stretching the muscles previously referred to as the groin muscles of the forward leg. In the movement during which the carriage 30 is drawn back towards the first end 22 of the exercise machine 20, the arms pull against the spring 27, thereby exercising the biceps.

This is just one of the great number of novel exercises that can be performed only on a Pilates exercise
As a consequence, exercisers 12 being introduced to the Pilates exercise machine 20 would never have experienced a similar exercise prior to their Pilates exposure. For this, and other reasons, it is important to ensure proper positioning and execution in order to prevent injury. By placing the forward foot too far forward, the probability of groin injury rises considerably.

To perform this exercise, the pulley handles 14 are firmly grasped in the hands while the exerciser 12 steps onto the carriage 30 while straddling the longitudinal carriage marking 40 with both feet spread slightly and centered over the relevant cross carriage marking 41, 42, 43, 44, 45, 46, 47. For exercisers 12 of a shorter stature, both feet are placed on the second cross carriage marking 42. For exercisers 12 of a medium stature, both feet are placed on the third cross carriage marking 43. For exercisers 12 of a taller stature, both feet are placed on the fourth cross carriage marking 44.

Fig. 22 illustrates one such positioning for this exercise.

One foot is then moved directly rearward, with the ball of the rear foot placed on the first platform cross marking 77 of the first platform 70. The exerciser 12 then pulls upward on the pulley handles 14 using the bicep muscles. When the carriage 30 moves close to the first platform 70, the pull is stopped, held, and then slowly released so that the forward foot and carriage 30 move forward toward the second end 23 of the exercise machine 20. This may be repeated, the feet switched, and the exercise repeated again.

The sequence just described illustrates the importance and novelty of the present invention when a Pilates exercise machine 20 is used to perform exercises for which there is no equivalent in the fitness world, to ensure proper body positioning and exercise execution for exercisers 12 who have no prior experience performing the exercise on a Pilates exercise machine 20.

Fig. 23 is an exemplary diagram showing a side view of an exercise machine 20 with a representative illustration of an exerciser 12 performing an exercise while placing both knees upon the carriage 30. The right and left knees are substantially aligned with the longitudinal carriage marking 40, with both hands grasping a pulley handle 14 connected to a first end 22 of the exercise machine 20.

This exercise primarily targets the muscles comprising the abdominal wall. More specifically, the illustrative exercise works the internal and external abdominal oblique and transverse abdominis. The exercise is performed in two phases; the first of which exercises one set of transverse abdominal and oblique, for instance, the left abdominal muscles, and a second phase that exercises the abdominal muscles on the opposite side, for instance, the right side abdominals.

To perform this exercise, the exerciser 12 first grasps the pulley handle 14 with both hands, overlapping the fingers. The exerciser 12 carefully kneels onto the carriage 30, straddling the fourth cross carriage marking 44, with both knees spread slightly. In this example, the first knee is centered over the sixth cross carriage marking 46 and the second knee is centered over the second cross carriage marking 42. Fig. 24 illustrates one such positioning for this exercise.

With both arms straightened and positioned directly in front of the face, the arms are rotated in a sweeping motion to pull the rope toward the second end 23 of the exercise machine 20. A jerky motion should be avoided, allowing only a smooth twist using solely upper body movement. At the point where the exerciser 12 can no longer twist while pulling the rope, motion is stopped and the position held. After a period of time, the hold is released and the carriage 30 allowed to return to its starting position while the torso un-twists and the exerciser 12 reverts back to a starting position with both arms straight and centered in front of the face. This starting position may be held and then the exercise repeated.

Unless otherwise defined, all technical and scientific terms used herein have the same meaning as commonly understood by one of ordinary skill in the art to which this invention belongs. Although methods and materials similar to or equivalent to those described herein can be used in the practice or testing of the present invention, suitable methods and materials are described above. All publications, patent applications, patents, and other references mentioned herein are incorporated by reference in their entirety to the extent allowed by applicable law and regulations. The present invention may be embodied in other specific forms without departing from the spirit or essential attributes thereof, and it is therefore desired that the present embodiment be considered in all respects as illustrative and not restrictive. Any headings utilized within the description are for convenience only and have no legal or limiting effect.

The invention claimed is:

1. An exercise system with positioning markings, comprising:
   - an exercise machine including at least one rail; and
   - a carriage movably secured to said at least one rail,
   wherein said upper surface of said carriage includes a plurality of carriage markings that identify a plurality of alignment positions upon said carriage.

2. The exercise system with positioning markings of claim 1, wherein said plurality of carriage markings are comprised of lines.

3. The exercise system with positioning markings of claim 1, wherein said plurality of carriage markings are comprised of numbers.

4. The exercise system with positioning markings of claim 1, wherein said plurality of carriage markings are comprised of symbols.

5. The exercise system with positioning markings of claim 1, wherein said plurality of carriage markings comprises a longitudinal carriage marking extending between a first end of said carriage and a second end of said carriage.

6. The exercise system with positioning markings of claim 5, wherein said plurality of carriage markings further comprises one or more cross carriage markings extending perpendicular to said longitudinal carriage marking.

7. The exercise system with positioning markings of claim 6, wherein said plurality of carriage markings further comprises one or more carriage reference characters.

8. The exercise system with positioning markings of claim 7, wherein each of said one or more reference characters is positioned at an intersection between said longitudinal carriage marking and said one or more cross carriage markings.

9. The exercise system with positioning markings of claim 1, wherein said exercise machine includes at least one platform.

10. The exercise system with positioning markings of claim 9, wherein said at least one platform includes at least one platform marking for identifying one or more platform position locations upon said at least one platform.
11. The exercise system with positioning markings of claim 10, wherein said at least one platform marking comprises a platform longitudinal marking extending between a first end and a second end of said at least one platform parallel to said moving axis of said exercise machine.

12. The exercise system with positioning markings of claim 11, wherein said at least one platform marking further comprises one or more platform cross markings, each of said one or more platform cross markings extending perpendicular with respect to said platform longitudinal marking.

13. The exercise system with positioning markings of claim 12, wherein said at least one platform marking further comprises one or more platform reference characters.

14. The exercise system with positioning markings of claim 13, wherein said one or more platform reference characters are each comprised of numbers.

15. The exercise system with positioning markings of claim 13, wherein said at least one platform comprises a first platform positioned at a first end of said exercise machine and a second platform positioned at a second end of said exercise machine.

16. The exercise system with positioning markings of claim 1, wherein said exercise machine includes at least one handle assembly.

17. The exercise system with positioning markings of claim 16, wherein said at least one handle assembly includes at least one handle marking for identifying one or more handle position locations upon said at least one handle assembly.

18. A method of using an exercise machine, comprising: providing an exercise machine including at least one rail extending longitudinally along a moving axis of said exercise machine, wherein said exercise machine includes a carriage movably secured to said at least one rail, wherein said exercise machine includes at least one platform, wherein said exercise machine includes at least one handle assembly;

providing a plurality of carriage markings positioned upon an upper surface of said carriage for identifying a plurality of alignment positions upon said carriage;

providing instructions to an exerciser to position said exerciser's body upon at least one of said plurality of alignment positions on said carriage by referencing one or more of said plurality of carriage markings; and positioning said body of said exerciser upon at least one of said alignment position locations per said instructions.

19. The method of claim 18, wherein said at least one platform includes at least one platform marking and further comprising the steps of instructing an exerciser to position said body of said exerciser upon said at least one platform by referencing said at least one platform marking and positioning said body of said exerciser upon said one or more platform position locations per said instructions.

20. The method of claim 18, wherein said at least one handle assembly includes at least one handle marking and further comprising the steps of instructing an exerciser to utilize said at least one handle assembly by referencing said at least one handle marking and utilizing said at least one handle assembly and performing an exercise by said exerciser.

* * * *