A housing (14) has a geometric periphery. A chamber is formed within the housing. A spring (26) is coupled within the chamber. The spring is fabricated of a composite material. The composite material includes a binder with axially aligned fibers. A handle (60) is provided exterior of the housing. A guide assembly (38) is coupled to the housing. A cord (52) passes through housing and around the guide assembly. The cord couples the handle and the spring.
VARIABLE RATE FULL BODY EXERCISE SYSTEM

RELATED APPLICATION


BACKGROUND OF THE INVENTION

Field of the Invention

[0002] The present invention relates to a variable rate full body exercise system and more particularly pertains to creating a resistive force for people exercising and for maintaining the resistive force linearly variable throughout use, the creating and maintaining being done in a safe, long-life, convenient and economical manner.

SUMMARY OF THE INVENTION

[0003] In view of the disadvantages inherent in the known types of exercise systems of known designs and configurations now present in the prior art, the present invention provides an improved variable rate full body exercise system. As such, the general purpose of the present invention, which will be described subsequently in greater detail, is to provide a new and improved variable rate full body exercise system and method which has all the advantages of the prior art and none of the disadvantages.

[0004] To attain this, the present invention essentially comprises a variable rate full body exercise system. A housing has a geometric periphery. A chamber is formed within the housing. A spring is coupled within the chamber. The spring is fabricated of a composite material. The composite material includes a binder with axially aligned fibers. A handle is provided exterior of the housing. A guide assembly is coupled to the housing. A cord passes through housing and around the guide assembly. The cord couples the handle and the spring. There has thus been outlined, rather broadly, the more important features of the invention in order that the detailed description thereof that follows may be better understood and in order that the present contribution to the art may be better appreciated. There are, of course, additional features of the invention that will be described hereinafter and which will form the subject matter of the claims attached.

[0005] 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 and 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 descriptions and should not be regarded as limiting.

[0006] As such, those skilled in the art will appreciate that the conception, upon which this disclosure is based, may readily be utilized as a basis for the designing of other structures, methods and systems for carrying out the several purposes of the present invention. It is important, therefore, that the claims be regarded as including such equivalent constructions insofar as they do not depart from the spirit and scope of the present invention.

[0007] It is therefore an object of the present invention to provide a new and improved variable rate full body exercise system which has all of the advantages of the prior art exercise systems of known designs and configurations and none of the disadvantages.

[0008] It is another object of the present invention to provide a new and improved variable rate full body exercise system which may be easily and efficiently manufactured and marketed.

[0009] It is a further object of the present invention to provide a new and improved variable rate full body exercise system which is of durable and reliable constructions.

[0010] An even further object of the present invention is to provide a new and improved variable rate full body exercise system which is susceptible of a low cost of manufacture with regard to both materials and labor, and which accordingly is then susceptible of low prices of sale to the consuming public, thereby making such variable rate full body exercise system economically available to the buying public.

[0011] Even still another object of the present invention is to provide a variable rate full body exercise system for creating a resistive force for people exercising and for maintaining the resistive force linearly variable throughout use, the creating and maintaining being done in a safe, long-life, convenient and economical manner.

[0012] Lastly, it is an object of the present invention to provide a new and improved variable rate full body exercise system. A housing has a geometric periphery. A chamber is formed within the housing. A spring is coupled within the chamber. The spring is fabricated of a composite material. The composite material includes a binder with axially aligned fibers. A handle is provided exterior of the housing. A guide assembly is coupled to the housing. A cord passes through housing and around the guide assembly. The cord couples the handle and the spring.

[0013] These together with other objects of the invention, along with the various features of novelty which characterize the invention, are pointed out with particularity in the claims annexed to and forming part of this disclosure. For a better understanding of the invention, its operating advantages and the specific objects attained by its uses, reference should be had to the accompanying drawings and descriptive matter in which there is illustrated preferred embodiments of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

[0014] The invention will be better understood and objects other than those set forth above will become apparent when consideration is given to the following detailed description thereof. Such description makes reference to the annexed drawings wherein:

[0015] FIG. 1 is a front elevational view of a body exercise system constructed in accordance with the principles of the present invention.

[0016] FIGS. 2 and 3 are side elevational and plan views taken along lines 2-2 and 3-3 of FIG. 1.

[0017] FIGS. 4, 5, 6 and 7 are cross sectional views taken along lines 4-4, 5-5, 6-6 and 7-7 of FIGS. 3, 4, 5 and 6, FIG. 7 showing a spring in a raised orientation.

[0018] FIG. 8 is a perspective illustration of a cord guide assembly.

[0019] The same reference numerals refer to the same parts throughout the various Figures.
DESCRIPTION OF THE PREFERRED EMBODIMENT

[0020] With reference now to the drawings, and in particular to FIG. 1 thereof, the preferred embodiment of the new and improved variable rate full body exercise system embodying the principles and concepts of the present invention and generally designated by the reference numeral 10 will be described.

[0021] The present invention, the variable rate full body exercise system 10 is comprised of a plurality of components. Such components in their broadest context include a housing, a spring, and a handle. Such components are individually configured and correlated with respect to each other so as to attain the desired objective.

[0022] First provided is a housing 14. The housing has a geometric periphery. In this manner a chamber is formed within the housing. The periphery is rectangular. The periphery is in a picture frame configuration. The chamber has five regions. The regions include an upper region 16. The regions include a lower region 20. The regions also include a right and left regions. The regions further include an enlarged rectangular central region 24. The housing has a front face. The housing also has a rear face.

[0023] A first spring 26 is provided. A second spring 28 is also provided. Each spring is located within the lower region of the chamber. Each spring is flat. Each spring is linear. Each spring is fabricated of a composite material. The composite material includes an epoxy binder. The composite material includes axially aligned s-glass fibers. It should be understood that the composite material may be fabricated of any of a wide variety of binders. It should also be understood that the composite material may be fabricated of any of a wide variety of fibers. The fibers include s-glass fibers and e-glass fibers and blends thereof, with or without transverse fibers. The first spring has a fixed end. The fixed end has a left threaded fastener 30. The left threaded fastener removably couples the first spring to the housing adjacent to the left region. The first spring has a free end. The free end is provided adjacent to the right region. The second spring has a fixed end. The fixed end has a threaded fastener 32. The threaded fastener removably couples the second spring to the housing adjacent to the right region. The second spring has a free end. The free end is provided adjacent to the left region.

[0024] A first and second guide assembly 38, 40 are provided. Each guide assembly includes a fair lead exterior of the housing. The fair lead has vertically spaced primary rollers 42. The primary rollers have horizontal axes. The fair lead also has laterally spaced secondary rollers 44. The secondary rollers have vertical axes. The pulley assembly also includes angularly spaced tertiary rollers 46. The tertiary rollers have angularly oriented axes interior of the housing. The first guide assembly is located adjacent to the upper region proximate to the left region. The second guide assembly is located adjacent to the upper region proximate to the right region. The front face of the housing has an aperture 48. The aperture is located between the secondary and tertiary rollers of each guide assembly.

[0025] A first cord 52 is provided. A second cord 54 is also provided. Each cord has an interior end. The interior end is provided within the chamber. Each cord has an exterior end. The exterior end is provided exterior of the chamber. A slider 56 is provided. The slider has a locking nut 58. The slider and locking nut adjustably couples the interior end of each cord to an associated spring adjacent to the free end. A handle 60 is provided. The handle is removably coupled to the exterior end of an associated cord. A pedal 60 is provided. The pedal is optionally removably coupled to the exterior end of each cord. Each cord has an intermediate extent. The intermediate extent passes between associated primary rollers and secondary rollers and aperture and tertiary rollers.

[0026] Provided next is a front and rear protective plate 66. The protective plate has threaded fasteners 68. The threaded fasteners are removably coupled to the front face and the rear face of the housing for safety purposes. The protective plates are fabricated of a transparent plastic material.

[0027] Further provided is a carrying handle 72. The carry handle is secured to the frame. The carry handle extends upwardly from the upper region.

[0028] Provided last are pairs of securement handles 76. The securement handles are secured to the frame. The securement handles extend outwardly from the upper, lower right and left regions. Securement straps 78 are provided. The securement straps extend through the securement handles. In this manner the securement handles are removably coupled to recipient objects including chairs, doors, wheel chairs and the like. The system of the present invention is adapted to be coupled to any wide variety of recipient objects or not coupled such as when merely placed on a bed.

[0029] As to the manner of usage and operation of the present invention, the same should be apparent from the above description. Accordingly, no further discussion relating to the manner of usage and operation will be provided.

[0030] With respect to the above description then, it is to be realized that the optimum dimensional relationships for the parts of the invention, to include variations in size, materials, shape, form, function and manner of operation, assembly and use, are deemed readily apparent and obvious to one skilled in the art, and all equivalent relationships to those illustrated in the drawings and described in the specification are intended to be encompassed by the present invention.

[0031] Therefore, the foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly, all suitable modifications and equivalents may be resorted to, falling within the scope of the invention.

What is claimed is:

1. An exercise system comprising:
   a housing having a geometric periphery forming a chamber there within;
   a spring coupled within the chamber, the spring being fabricated of a composite material including a binder with axially aligned fibers; and
   a handle exterior of the housing, a guide assembly coupled to the housing, and a cord passing through housing and around the guide assembly, the cord coupling the handle and the spring.

2. The system as set forth in claim 1 wherein the periphery is rectangular in a picture frame configuration with the chamber having five regions, an upper region, a lower region, a left region, a right region and a central region.
3. The system as set forth in claim 1 wherein the spring includes two springs, the guide assembly includes two guide assemblies and the handle includes two handles.

4. The system as set forth in claim 1 wherein the pulley assembly includes a fair lead exterior of the housing, the fair lead having vertically spaced primary rollers with horizontal axes, the fair lead also having laterally spaced secondary rollers with vertical axes, the pulley assembly also including angularly spaced tertiary rollers with angularly oriented axes interior of the housing.

5. The system as set forth in claim 1 wherein the spring is linear in configuration.

6. The system as set forth in claim 5 wherein the spring is fabricated of a composite material with an epoxy binder and axially aligned s-glass fibers.

7. The system as set forth in claim 6 wherein the composite material also includes transversely aligned s-glass fibers.

8. A variable rate full body exercise system (10) for creating a resistive force for people exercising and for maintaining the resistive force linearly variable throughout use, the creating and maintaining being done in a safe, long-life, convenient and economical manner, the system comprising, in combination;

a housing (14) having a geometric periphery forming a chamber there within, the periphery being rectangular in a picture frame configuration with the chamber having five regions, an upper region (16), a lower region (18), a left region (20), a right region (22) and an enlarged rectangular central region (24), the housing having a front face and a rear face;
a first spring (26) and a second spring (28), each spring located within the lower region of the chamber, each spring being flat and linear and fabricated of a composite material including an epoxy binder with axially aligned s-glass fibers, the first spring having a fixed end with a left threaded fastener (30) removably coupling the first spring to the housing adjacent to the left region, the first spring having a free end adjacent to the right region, the second spring having a fixed end with a threaded fastener (32) removably coupling the second spring to the housing adjacent to the right region, the first spring having a free end adjacent to the left region, optional supplemental springs (34) coupled to the first and second springs adjacent to the fixed ends to provide supplemental and increased stiffness;
a first and second guide assembly (38), (40), each guide assembly including a fair lead exterior of the housing, the fair lead having vertically spaced primary rollers (42) with horizontal axes, the fair lead also having laterally spaced secondary rollers (44) with vertical axes, the pulley assembly also including angularly spaced tertiary rollers (46) with angularly oriented axes interior of the housing, the first guide assembly being located adjacent to the upper region proximate to the left region, the second guide assembly being located adjacent to the upper region proximate to the right region, an aperture (48) in the front face of the housing between the secondary and tertiary rollers of each guide assembly;
a first cord (52) and a second cord (54), each cord having an interior end within the chamber and an exterior end exterior of the chamber, a slider (56) with a locking nut (58) adjustably coupling the interior end of each cord to an associated spring adjacent to the free end, a handle (60) removably coupled to the exterior end of an associated cord, a pedal (62) optionally removably coupled to the exterior end of each cord, each cord having an intermediate extent passing between associated primary rollers and secondary rollers and aperture and tertiary rollers;
a front and rear protective plate (66) with threaded fasteners (68) removably coupled to the front face and the rear face of the housing for safety purposes, the protective plates being fabricated of a transparent plastic material; a carrying handle (72) secured to the frame and extending upwardly from the upper region; and
pairs of securement handles (76) secured to the frame and extending outwardly from the upper, lower right and left regions, securement straps (78) extending through the securement handles for removably coupling to recipient objects including chairs, doors, wheel chairs and the like.

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