FITNESS DEVICE AND METHODS OF MAKING AND USING

[0001] The present disclosure relates generally to a fitness device with jump rope-like attributes with enhanced usability, and more specifically to such a fitness device with adaptive construction for use in flow art and as an object manipulation skill toy.

BACKGROUND

[0002] A new trend in the fitness industry involves people no longer jumping through a jump rope but are instead swinging the rope in different ways around their body. This is known as rope flow and most commonly uses a much thicker rope compared to a conventional jump rope. While rope flow provides an alternative to jumping rope, its utility is limited due to various shortcomings. One of these relates to the user not being able to easily change directions without losing momentum, thus limiting how quickly he or she can perform different movements consecutively. Another problem is that to the extent that handles (such as those composed of knots or related grips formed at opposing ends of the rope) may be present, they do not provide the ability to pivot, such as through a rotational swiveling motion. This in turn can lead to rope entanglement when maneuvers are attempted that are outside the current skill set practiced, thus limiting the amount of skills that can be performed. Relaxing the grip on the handles is not a viable option in that it limits the ability of the user to effectively perform certain maneuvers.

[0003] Occasionally—whether as a conventional jump rope or as a rope flow—the user will let go of the handle and catch it. Unfortunately, the range of options available to the user for performing various skills is limited due to the weight, size and proportions of the equipment being used. Moreover, lack of a clear visual separation between the rope and any handles (assuming such handles are present) makes it difficult for a user to identify the handles and catch them. Yet another shortcoming for both jump ropes and flow ropes is that it is difficult to use these devices inside a normal-sized home. Shortening a jump rope is not desirable in that a shorter rope becomes too difficult to jump through, while a flow rope with additional knots to the already two to four existing knots in the rope, the rope becomes too heavy and too stiff to use comfortably.

[0004] Therefore, a need exists to create an apparatus and method of use that is designed in a way that can further expand even more ways to utilize a rope and handles for improving one's fitness, skill set, and overall health.

SUMMARY

[0005] In one aspect, a fitness device is disclosed. The devices includes a body portion defining a rope, a terminal portion defining a plurality of handles each of which is secured to a corresponding end of the body portion and a swivel mechanism formed between the rope and the handles. The swivel mechanism allows for a greater range of relative movement between the rope and handles that in turn provides improvements in entanglement resistance. Such improved resistance is particularly beneficial when the fitness device is being used in a jump rope-like manner for various rope flow skills, conventional and non-conventional maneuvers, routines, performance art or the like. Such use may include (but is not limited to) swinging, whipping, tossing, spinning, throwing, catching, jumping, stalling, flowing and flipping the rope and handles as a game, performance art or fitness activity. User benefits may include (but are not limited to) improved proprioception, reaction time, awareness, hand-eye coordination, bi-manual dexterity, focused concentration, goal setting, confidence, heart health, lymphatic flow, agility, increased range of motion, a diverse workout routine, and promotion of a mental flow state.

[0006] In another aspect, a method of making a fitness device is disclosed. The method includes providing an elongate, flexible body portion defining opposing ends and a catenary shape, configuring each of a plurality of terminal portions to define an aperture formed therein, securing each of the plurality of terminal portions to a corresponding end of the body portion through the aperture and placing a spacer on the body portion.

[0007] In another aspect, a method of using a fitness device is disclosed. The method includes providing an elongate, flexible body portion defining opposing ends and a catenary shape, configuring each of a plurality of terminal portions to define an aperture formed therein and securing each of the plurality of terminal portions to a corresponding end of the body portion through the aperture and placing a spacer on the body portion. In this way, when an individual performs a fitness maneuver with the device, the cooperation of the body portion and the terminal portion resists entanglement between them. In addition, having a clear visual separation between the body and terminal portions allows new maneuvers to be possible (some which are shown in the drawings).

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

[0008] The following detailed description of specific embodiments of the present disclosure can be best understood when read in conjunction with the following drawings, where like structure is indicated with like reference numerals and in which:

FIG. 1 depicts a conventional flow rope according to the prior art;

FIG. 2 depicts the flow rope of FIG. 1 in a coiled state;

FIG. 3 depicts various views of a person performing a common skill with the flow rope of FIG. 1;

FIG. 4 depicts an embodiment of a fitness device including a body portion and a terminal portion according to the present disclosure;

FIG. 5 depicts the fitness device of FIG. 4 in a coiled state;

FIG. 6 depicts the fitness device of FIG. 4 with a knot formed in the body portion;

FIG. 7 depicts the fitness device of FIG. 4 with several knots formed in the body portion;

FIG. 8 depicts details of the fitness device of FIG. 4, including a swivel-based attachment between the body portion and the terminal portion;

FIG. 9 depicts various shapes of the terminal portion of the fitness device of FIG. 4;

FIG. 10 depicts details of the fitness device of FIG. 4, including the use of a spring-based attachment between the body portion and the terminal portion;

FIG. 11 depicts details of the fitness device of FIG. 4, including the use of one or both of the spring-based attachment and the swivel-based attachment;

FIGS. 12 through 17 depict various views of a person performing different skills with the fitness device of FIGS. 4 through 11; and

FIG. 18 depicts a method of making the fitness device of FIGS. 4 through 11.

[0009] It will be appreciated that for the sake of clarity, elements depicted in the drawings are not necessarily to scale, and that certain elements may be omitted from some of the drawings. It will further be appreciated that certain reference numerals may be repeated in different figures to indicate corresponding or analogous elements.

DETAILED DESCRIPTION

[0010] A technical problem relates to how to use a jump-rope like fitness device and avoid having it become entangled during new and other non-conventional maneuvers. A further technical problem relates to how to place weighted handles at the opposing ends of the fitness device that are suitable for performing tricks or related maneuvers that involve throwing and catching one or both of the handles or the entire fitness device. Technical solutions to these and other problems are provided by the fitness device that is described in more detail as follows.

[0011] Referring first to FIGS. 4 and 5, the fitness device **10** is shown with a catenary shape when placed in a normal hanging position (FIG. 4) and in a coiled shape, such as when being packaged or stored (FIG. 5). The fitness device **10** includes a body portion (also referred to herein as a rope) **20** and a terminal portion **30** (also referred to herein as a handle or handles the singular or plural nature of which will be apparent from the context). The rope **20** can have various lengths, thicknesses, sizes and weights, and in one form may be made of an elastic material to give it the ability to stretch during use, particularly in configurations where the handles **30** are weighted. As can be seen, in one form the handles **30** define a spherical shape, although others are also possible, as will be discussed in conjunction with FIG. 9. Although not shown, in at least one embodiment, the handles **30** are made with a modular construction (for example, with a hinged clamshell-like design or made from multiple separate parts that may be snap-fit together) that may be easily separated from and attached to each other allowing the interchangeability of different types of ropes **20** and handles **30** without having to use tools.

[0012] Referring next to FIGS. 6 and 7, the rope **20** may be configured to have one or more knots **50** formed therein. This reduces the overall length of the fitness device **10**, making it suitable for indoor use.

[0013] Referring next to FIG. 8, details of the handles **30** are shown. In one form, an aperture **32** is formed through the axial length of the handle **30** such that a tubular conduit **34** extends from one end to the other. By having the tubular conduit **34** being of slightly greater diameter that the rope **20**, have a swivel mechanism **36** is embedded in the handle **30** to allowing the rope **20** to rotate. This in turn prevents the rope **20** from being tangled. A spacer **60** placed between the handle **30** and a terminal knot **70** of the rope **20** helps to permit the swivel mechanism **36** to rotate more freely.

[0014] Referring next to FIG. 9, in addition to a spherical shape, the handles **30** may define various other shapes including egg-shaped, teardrop-shaped, as well as others with enhanced ergonomic attributes examples of which may include a prolate sphere of revolution, a lanceoloid shape, a cylindrical shape, a hyperbolic shape and combinations thereof. It will be appreciated that the handles **30** may be made of different sizes and materials, depending on various ergonomic factors, as well as to better tailor the grip to particular skills and movements the person **P** is more inclined to perform. In a particular form, the handles **30** are designed to be easily thrown and caught.

[0015] Referring next to FIG. 10, the handles **30** may further have a spring **38** or related elastic mechanism of elastic material that helps return the handle **30** back to the person **P**. Although shown as a coil, it will be appreciated that other forms of spring **38** may be used, including pneumatic or hydraulic variants, as well as other coil, leaf or related shapes, and that all such variants are deemed to be within the scope of the present disclosure.

[0016] Referring next to FIG. 11, the rope **20** may further include a linkage **22**. This linkage **22** is designed to have various sized ropes slide through the hole and be secured with a knot or tape allowing the owner to customize the rope that is used. As shown, in addition, the linkage **22** may be used in conjunction with the spring **38** of FIG 10. Also shown in the last example, in one form, the handle is made of fabric and is usually filled with plastic pellets or sand, similarly to a juggling ball or hacky sack.

[0017] Referring next to FIG. 12, a user (also referred to herein as person **P**) typically starts an exercise routine or related maneuver by holding the handles **30** and swinging the rope **20**. While swinging the rope **20**, the person **P** can then project one or both of the handles **30** into the air while the rope **20** may keep spinning as the person **P** receives the handle **30** back in their hand, continuing

onto the next skill or maneuver. In one use form, the person **P** throws the entire fitness device **10**, having it flip through the air then catches it, changing directions.

[0018] Referring next to FIG. 13, in one form, the rope **20** may be made to have elastic features, such as through the use of a rubber cord, string or similar material. Another action the person **P** may then take is to throw the ball away from them, making the rope or material stretch. The person **P** will then yank on one handle **30** causing the other handle **30** to spring back to them. Whenever the person **P** drops one of the handles **30** on the ground, they can use this yanking or whipping motion to return the opposite handle to his or her hand. As shown, the person **P** throws one handle **30** as far as it goes then whips it back and catches it with the other hand. Preferably, the handle **30** is heavy enough to return to the person **P**, yet not too heavy or the ball will return to the person **P** with too much speed. Once the person **P** is well trained in this method, then he or she is then able to transfer the skills learned to a non elastic rope, or similar device.

[0019] Referring next to FIG. 14, the person **P** is spinning the rope **20** then switches the handles **30** in the air with both hands while continuing the swing. The weight of the handles **30** play and important role in this skill. Too light and the entire rope **20** could fly away. If this maneuver is preformed consecutively without a swivel **36**, the rope **20** could easily become tangled.

[0020] Referring next to FIG. 15, the person **P** is spinning the rope **20** then tosses one handle **30** in the air then catches that same handle **30** continuing the swing. To perform such a maneuver, it is optimal that the rope **20** is pliable enough to allow the handle **30** to move in such a motion and that the handle **30** is not too light as it will fly away. Having the handle **30** visually stand out enables the person **P** a clear target of where the handle **30** is in space as the rope **20** continues to rotate.

[0021] Referring next to FIG. 16, the person **P** is whipping the handle **30** off the ground, catching it, then jumping through the rope **20**. Having the handle **20** easily visible to the human eye is also of great importance in this skill also. As the person **P** preforms the whipping motion the handle **30** can quickly move towards the person **P**. If the handles **30** are not clearly seen to the person **P**, then the handle **30** could become very difficult to catch. Having the optimal weight in the handles **30** can also have an influence on how quickly they can move through the air. The larger the weight the slower the handles **30** will move, and the lighter they are the faster they will travel.

[0022] Referring next to FIG. 17, the person **P** is standing stationary demonstrating the various ways the person can hold the fitness device to preform conventional or non-conventional maneuvers. In one instance the person **P** can use it like a jump rope, in another like a rope dart, meteor, poi, with one hand, among many other possibilities not shown.

[0023] Referring next to FIG. 18, a flowpath showing steps used in making the fitness device **10** are shown. This method is deemed to be the most efficient way for the device **10** to be created, requiring very few tools and materials. One would only need a drill press, a rope cutter, and any paint or protecting desired. This method greatly reduces the cost and allows the device **10** to be made easily. In addition, this method the rope **20** goes all the way through the handle **30**, as most jump ropes and meteor have a swivel embedded inside the handle. This in turn promotes a more natural feeling to the person using the handle **30** and allows the rope **20** to spin in a more desired manner.

[0024] Although not shown, in one form, one or both of the handles **30** and rope **20** can be made to glow or illuminate, such as through a lighting mechanism (not shown). This in turn allows the fitness device **10** to have enhanced artistic or visual attributes, particular during the performance of a routine. In another form, one or both of the rope **20** and handles **30** may be made with other appearance-enhancing attributes, such as through the placement of designs, attachable beads or other such ornaments.

[0025] Within the present disclosure, terms such as “preferably”, “generally” and “typically” are not utilized to limit the scope of the claims or to imply that certain features are critical, essential, or even important to the disclosed structures or functions. Rather, these terms are merely intended to highlight alternative or additional features that may or may not be utilized in a particular embodiment of the disclosed subject matter. Likewise, it is noted that the terms “substantially” and “approximately” and their variants are utilized to represent the inherent degree of uncertainty that may be attributed to any quantitative comparison, value, measurement or other representation. As such, use of these terms represents the degree by which a quantitative representation may vary from a stated reference without resulting in a change in the basic function of the subject matter at issue.

[0026] Within the present disclosure, the use of the prepositional phrase "at least one of" is deemed to be an open-ended expression that has both conjunctive and disjunctive attributes. For

example, a claim that states "at least one of A, B and C" (where A, B and C are definite or indefinite articles that are the referents of the prepositional phrase) means A alone, B alone, C alone, A and B together, A and C together, B and C together, or A, B and C together. By way of example within the present disclosure, if a claim recites that a device comprises at least one of a first component, a second component and a third component, and if such device has the first component alone, the second component alone, the third component alone or any combination of the first, second and third component, then component or components satisfies the claim.

[0027] Within the present disclosure, certain terms are used to establish a degree of connectivity or related structural, physical or other cooperation between various components, as well as between such components and users. Such terms, such as “associated with” or the like, are understood to form an exclusive or non-exclusive relationship between the components and the user or users to which they refer, and will be understood as one or the other, depending on the context.

[0028] Having described the subject matter of the present disclosure in detail and by reference to specific embodiments, it is noted that the various details disclosed in the present disclosure should not be taken to imply that these details relate to elements that are essential components of the various described embodiments, even in cases where a particular element is illustrated in each of the drawings that accompany the present description. Further, it will be apparent that modifications and variations are possible without departing from the scope of the present disclosure, including, but not limited to, embodiments defined in the appended claims. More specifically, although some aspects of the present disclosure may be identified as preferred or particularly advantageous, it is contemplated that the present disclosure is not necessarily limited to these aspects.

[0029] It will be apparent to those skilled in the art that various modifications and variations can be made to the described embodiments without departing from the spirit and scope of the claimed subject matter. Thus, it is intended that the specification cover the modifications and variations of the various described embodiments provided such modification and variations come within the scope of the appended claims and their equivalents.

1. A fitness device comprising:

a body portion defining a rope;

a terminal portion defining a plurality of handles each of which is secured to a corresponding end of the body portion; and

a swivel mechanism formed between the body portion and the terminal portion, the swivel mechanism providing the fitness device with enhanced resistance to entanglement.

2. The fitness device of claim 1, wherein a shape defined by each of the plurality of handles comprises a body of revolution.

3. The fitness device of claim 2, wherein the body of revolution is selected from the group consisting of a sphere, a prolate sphere of revolution, a teardrop shape, a lanceoloid shape, a cylindrical shape, a hyperbolic shape and combinations thereof.

4. The fitness device of claim 1, wherein each of the plurality handles define a substantially hollow-body construction.

5. The fitness device of claim 4, further comprising a filler material disposed within the substantially hollow-body construction.

6. The fitness device of claim 4, wherein each of the plurality handles define a fabric-covered outer surface.

7. The fitness device of claim 4, wherein each of the plurality handles define a textured outer surface.

8. The fitness device of claim 4, wherein each of the plurality handles define an outer surface made from a material selected from the group consisting of wood, rubber, plastic and combinations thereof.

9. The fitness device of claim 1, wherein each of the plurality of handles defines a modular construction to promote tool-free removal from the body portion.

10. The fitness device of claim 1, wherein the terminal portion and the body portion are attached to one another through a spring that is embedded inside each of the plurality of handles.

11. The fitness device of claim 1, wherein at least one of the body portion and the terminal portion comprise an illumination mechanism.

12. The fitness device of claim 1, wherein the rope is made of rubber.

13. The fitness device of claim 1, wherein the swivel mechanism defines a tubular passageway formed through a substantial middle of each of the handles along an elongate dimension thereof such that the rope passes through the tubular passageway to form a knot at a distal end thereof.

14. The fitness device of claim 1, wherein the swivel mechanism defines a ball bearing to provide pivoting movement between the rope and each of the handles.

15. A method of making a fitness device, the method comprising:

providing an elongate, flexible body portion defining opposing ends and a catenary shape;

configuring each of a plurality of terminal portions to define an aperture formed therein;

securing each of the plurality of terminal portions to a corresponding end of the body portion through the aperture, the aperture defining a tubular conduit that cooperates with an engaging part of the body portion to comprise a swivel mechanism that provides enhanced swiveling movement of each of the plurality of terminal portions relative to the body portion;

placing a spacer on the body portion between each of the plurality of terminal portions and a terminal knot, the spacer cooperative wit heh swivel mechanism to provide a further enhancement to the swiveling movement.

16. The method of claim 15, wherein the spacer defines a substantially hollow construction.

17. The method of claim 15, wherein each of the plurality of terminal portions defines a handle.

18. The method of claim 17, wherein a shape defined by each handle comprises a body of revolution.

19. The method of claim 18, wherein the aperture formed in each handle is substantially collinear with the axis of revolution.

20. The method of claim 15, wherein each of the plurality of terminal portions are secured to the corresponding end of the body portion through a swivel mechanism.

21. A method of using a fitness device, the method comprising:

providing an elongate, flexible body portion defining opposing ends and a catenary shape;

configuring each of a plurality of terminal portions to define an aperture formed therein; and

securing each of the plurality of terminal portions to a corresponding end of the body portion through the aperture such that upon use by an individual in an exercise routine, the body portion and the terminal portion do not get tangled.

22. The method of claim 21, wherein the exercise routine comprises a rope flow routine.

23. The method of claim 21, wherein the exercise routine comprises a jump rope routine.

ABSTRACT

A fitness device, a method of making a fitness device and a method of using a fitness device. The fitness device may be used for object manipulation or as a skill toy. By having a terminal portion secured to a body portion through a swivel mechanism, the body portion and the terminal portion avoid becoming entangled during use. By having shaped handles of different weights and sizes allows the handle portion to be easily thrown and caught.