DEFORMABLE GRIP PAD WITH BISTABLE SPRING BANDS AND METHODS OF USE

Applicants: David R. Newman, El Cajon, CA (US); Nicholas Leighton Ordway, El Cajon, CA (US)

Inventors: David R. Newman, El Cajon, CA (US); Nicholas Leighton Ordway, El Cajon, CA (US)

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Abstract

A grip pad with bistable spring bands embedded therein is provided for snapping onto a bar to improve a user's grip of the bar. The grip pad is configured with specialized material such as neoprene with textured patterns on both top and bottom sides of the grip pad so that the grip pad securely grips the bar and the user securely grips the grip pad. The grip pad is removably attached to the bar so that a user can easily snap the grip pad into a cylindrical-shaped wrapped position around the bar and remove the grip pad by opening the grip pad from its wrapped position to its bistable straight position. An attachment mechanism may be configured at one end of the grip pad to detachably secure the grip pad around the bar in the wrapped position.
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CROSS-REFERENCE

[0001] This application claims priority to U.S. Provisional Application No. 61/794,765, filed Mar. 15, 2013, which is incorporated herein by reference in its entirety.

FIELD OF THE INVENTION

[0002] The present invention relates to a grip pad which can be removably attached to a bar or bar-like apparatus, and more specifically to a grip pad with at least one bistable spring band that snaps the grip pad around the bar.

BACKGROUND OF THE INVENTION

[0003] During numerous fitness activities, a user may be required to tightly grasp an exercise bar, which may be in the form of horizontal bars from which the user pushes upwardly, overhead bars from which the user pulls and swings his body weight, as well as bar bells and dumb bells which are hand grasped by a cylindrical center portion thereof. Many multifunctional exercise apparatus incorporate several cylindrical bars as well.

[0004] However, those who exercise and train using one of the many forms of a cylindrical elongated exercise bar quickly realize that inadequate looseness of one’s hand grip significantly diminishes the effectiveness of such exercise and training. Due to the amount of weight involved, the user must be careful to properly grasp the bar cushion and protect the users hands, and avoid having the bar slip out of their hands. Serious injuries have been known to occur if the bar slips out of the user’s hands and the weights fall on the user or other users in the vicinity.

[0005] Further, bars are hard on the user’s hands, or can be hot or cold, and can cause injury or caluses to hands and fingers. Unfortunately, most bars are made out of hard, smooth metal materials to support the weight that is attached to the bar, but which provide little friction or cushion between a user’s hands and the metal and are therefore difficult for a user to grasp. If the user begins to sweat, as often happens during a fitness activity, the sweat on the user’s hands makes the metal surface of the bar slippery, and it becomes even more difficult for the user to grip the bar.

[0006] In order to prevent the bar from slipping out of the user’s hands, bars used for weightlifting, such as barbells and dumbbells, are formed with a raised pattern on a portion of the bar. However, the raised pattern is still made out of metal and can still be slippery when gripped by a user whose hands are wet. Furthermore, the raised pattern is only placed on a portion of a bar, which may not be where the user desires to grip the bar during the fitness activity.

[0007] Some users will also wear specialized gloves which are designed with materials and patterns on the palm surface which help improve the friction and thus the grip on the bar as well as assist cushioning the user’s hands. However, wearing a pair of gloves during a workout can be uncomfortable since the gloves cover the entire hand. Furthermore, if the gloves are not needed for every device used during a fitness activity, the gloves must be continually removed and put back on, which users will find difficult and inconvenient.

SUMMARY OF THE INVENTION

[0008] Disclosed are grip pads designed to enhance hand gripability to a bar or bar-like apparatus including but not limited to exercise equipment, and tools. In various embodiments, the grip pads are made from an elastomeric material and are sized in length and width to substantially cover the user’s palm. The grip pads disclosed herein include bistable spring bands which allows the grip pad to resist slippage and circumvent the need for adhesive or other attaching means to maintain the position and resilient shape of the device around the apparatus.

[0009] Embodiments described herein provide a grip pad with bistable spring bands embedded therein which are configured to snap the grip pad into a cylindrical-shapped wrapped position around a bar or bar-like apparatus. The grip pad is configured with an elastomeric material such as neoprene, neogreen, rubber, suede, leather, vinyl, latex, lycur, thermocline and the like.

[0010] In specific embodiments, the grip pad comprises textured patterns on both top and bottom sides of the grip pad so that the grip pad securely grips the bar and the user securely grips the grip pad. The grip pad can have varying thicknesses of padding depending on the user’s needs. The grip pad is removably attached to the bar so that a user can easily remove the grip pad by opening the grip pad from its wrapped position to its bistable straight position, where the user can then easily re-position the grip pad on another bar. An attachment mechanism may be configured at one end of the grip pad to detachably secure the grip pad around the bar in the wrapped position.

[0011] From this description, in conjunction with other items, the advantages of the said invention will become clear and apparent more so based upon the hereinafter descriptions and claims, which are supported by drawings with numbers relating to parts, wherein are described in the following sections containing the relating numbers.

BRIEF DESCRIPTION OF THE DRAWINGS

[0012] The accompanying drawings, which are incorporated in and constitute a part of the specification, illustrate embodiments of the invention and, together with the description, serve to explain the objects, advantages, and principles of the invention.

[0013] FIG. 1A is a front view of a top side of the grip pad, illustrating the textured material and an attachment material positioned on an end portion of the grip pad, according to one embodiment.

[0014] FIG. 1B a front view of a bottom side of the grip pad, illustrating the textured material and an attachment material positioned on an end portion of the grip pad, according to one embodiment.

[0015] FIG. 2 is a perspective view of a grip pad in a wrapped position around a cylindrical bar, according to one embodiment.

[0016] FIG. 3 is a side view of the grip pad in the wrapped position illustrating how a user’s hand is positioned around a top side of the grip pad, according to one embodiment.

[0017] FIG. 4 is a transparent illustration of the grip pad illustrating the positioning of three bistable spring bands between the top side and bottom side of the grip pad, according to one embodiment.
DETAILED DESCRIPTION OF ILLUSTRATIVE EMBODIMENTS

[0018] After reading this description it will become apparent to one skilled in the art how to implement the invention in various alternative embodiments and alternative applications. However, all the various embodiments of the present invention will not be described herein. It is understood that the embodiments presented here are presented by way of an example only, and not limitation. As such, this detailed description of various alternative embodiments should not be construed to limit the scope or breadth of the present invention as set forth below.

[0019] Embodiments described herein provide a grip pad with bistable spring bands embedded therein made of various thicknesses which are configured to snap the grip pad into a cylindrical-shaped wrapped position around a bar, bar-like apparatus, or handle stock. The grip pad is configured with an elastomeric material or other flexible material such as neoprene, neogreen, rubber, suede, leather, vinyl, latex, lycra, thermocline and the like.

[0020] The grip pad can have additional padding between elastomeric material layers with textured patterns on both top and bottom sides of the grip pad so that the grip pad securely grips the bar and the user securely grips the grip pad. The grip pad is removably attached to the bar or other apparatus so that a user can easily remove the grip pad by opening the grip pad from its wrapped position to its bistable straight position, where the user can then easily re-position the grip pad on another bar or apparatus. An attachment mechanism may be configured at one end of the grip pad to detachably secure the grip pad around the bar in the wrapped position. In various embodiments, the attachment mechanism comprises velcro, snap, latch or other attachment mechanism, as is appreciated by one of skill in the art.

[0021] The grip pad is designed for any use in which a user needs to improve their grip and hand cushion for a cylindrically-shaped or handle stock surface. Although the embodiments referred to herein pertain to fitness-related activities, the grip pad is useful for any activity where a user grips a cylindrical object, such as a paddle, oar, broom, shovel, rake, wheel barrel, post hole digger, handle, railing, tool, or the like. The grip pad helps the user maintain a better grip on the object and also prevents discomfort to the user when gripping the object by providing cushioning and insulation between the user’s hand and the cylindrical object. The grip pad will therefore prevent calluses, bruises, cuts, abrasions and general fatigue of the hand, as well as protect the user’s hand from excessive heat and cold, dirt or other contaminants on the cylindrical object.

[0022] In one embodiment illustrated in FIG. 1A and FIG. 1B, a grip pad 100 includes a top layer 102 of elastomeric or other flexible material and a bottom layer 104 of elastomeric or other flexible material that are secured together at least around its periphery to form a cavity therebetween. The cavity is substantially enclosed. In alternative embodiments, the layers are secured to one another by sewing, gluing, stapling, snapping or the like. A layer of padding may also be placed between the top layer 102 and the bottom layer 104 to provide additional cushion. One or more bistable spring bands (not shown; see FIG. 4) may be arranged within the cavity along a length of the grip pad.

[0023] In FIG. 1A and FIG. 1B, the bistable spring bands FIG. 4 (114) are in an open, straight configuration, which is one of the two positions of the bistable spring bands. The bistable spring bands 114 are configured to alternate the shape of the grip pad between a flat, straight configuration and cylindrical or wrapped configuration. The grip pad 100 as shown in FIG. 1 is in an open, straight configuration. In this open configuration, the grip pad 100 can be easily placed on a cylindrical object such as a bar to be attached, and can also be easily carried around or placed in a bag or other container for storage.

[0024] In one embodiment, the grip pad is provided with a textured grip on a top surface and a bottom surface. In one preferred embodiment the grip has a “shark tooth” texture. The top surface 102 improves the grip of the user’s hand by preventing the user’s palm and fingers from slipping or spinning while the user grasps the grip pad 100. The bottom surface 104 improves the grip on the cylindrical object by preventing the grip pad and thus the user’s hand from slipping or spinning around the bar.

[0025] An attachment mechanism 106A and 106B may be positioned on one or more ends of the grip pad 100 and used to detachably attach one end of the grip pad to the opposing end when the grip pad is in its wrapped position (see FIG. 2 and FIG. 2).

[0026] In FIG. 1A and FIG. 1B, the attachment mechanism is a first strip of hook and loop Velcro® 106A disposed laterally across a first end of the top layer 102 of the grip pad 100, and which is secured to the grip pad 100. A second strip of Velcro® 1063 is disposed on a second end of the bottom layer 104 of the grip pad 100 opposing the first end, such that when the grip pad 100 is in its wrapped position (see FIG. 2 and FIG. 3), the first strip 106A and second strip 1063 meet and form a tight, but removable bond. The Velcro® attachment mechanism 106A, 106B will help to fasten the grip pad 100 tightly around the bar 108.

[0027] As illustrated in the embodiment depicted in FIG. 2 and FIG. 3, the Velcro® strip 106A and 1063 is configured so that it does not make contact with the bar 108 or the user’s hand when the grip pad 100 is wrapped around the bar 108, avoiding any user discomfort and avoiding and risk of the grip pad slipping against the potentially slick surface of one of the Velcro® strips. The attachment mechanism could also be a snap, latch or other attachment mechanism, as is appreciated by one of skill in the art.

[0028] FIG. 2 is an illustration of the grip pad 100 in a closed, wrapped configuration after the bistable spring band or bands have been snapped into place around a bar 108. Only the top layer 102 of the grip pad is visible, since the bottom layer 104 is in contact with the bar 108. The attachment mechanism 106 is visible with a portion of the opposing end of the grip pad 100 covering it in order to secure the ends of the grip pad 100 together.

[0029] FIG. 3 illustrates a side view of the grip pad 100 in the wrapped configuration with a user’s hand 110 wrapped around the top layer 102, so as to illustrate how the user’s hand 110 fits around the grip pad 100 during use. The attachment mechanism 106 is also illustrated in contact with the opposing end of the grip pad 100 as it secures the ends together.

[0030] In one embodiment, a single bistable spring band 114 may be positioned within the cavity of the grip pad 100, or, as illustrated in the embodiment in FIG. 4, more than one bistable, here three, spring bands 114 may be positioned in parallel within the grip pad 100. An adhesive glue or heat may be applied between the top and bottom layers to seal the bistable spring bands inside the cavity. In one embodiment,
stitching may be used to reduce or eliminate separation of the top and bottom layers and also hold the bistable spring bands in place.

[0031] The grip pad 100 may be formed from a flexible, textured material which is known to improve the friction between another object in contact, specifically human skin.

[0032] The material should also be sufficiently thick to provide a cushioning and insulation function while also being flexible enough to conform to the shape of the bar.

[0033] In one embodiment, the grip pad is a textured material. In a specific embodiment the grip pad is made from textured neoprene.

[0034] In some embodiments, the grip pad has a thickness of approximately 3 millimeters and where the grip pad of this embodiment has two layers, each layer is approximately 1.5 millimeters thick. The grip pad can have a thickness ranging from 3 millimeters to 5 centimeters.

[0035] In another embodiment cushion material may be placed between the two layers of textured material. The cushion material can include rubber, cotton, nylon, canvas or other material. Other rubber or polymer materials may be used as well. The overall dimensions of the grip pad may change depending on the intended use, and specifically the size of the cylindrical object that it is being attached with.

[0036] In one embodiment, the grip pad is approximately 4 to 5 inches wide in order to accommodate the width of a user’s hand, and the length is approximately 3.5 inches in order to wrap around a bar of approximately 1 to 1.5 inches in diameter and provide sufficient overlap for the attachment mechanism. However, the width of the grip pad can range from 3 to 12 inches with a length which can range from 3 to 12 inches. At this width and length, approximately 2-3 bistable spring bands that measure approximately 1 inch by 3.5 inches and spaced approximately 1.25 inches apart may be positioned between the top and bottom layers. In one embodiment, a single bistable spring band of a larger width than that previously described may be positioned between the layers, such that only the single bistable spring band is needed.

[0037] In one embodiment, a method of using the grip pad includes placing the grip pad in its opened, straight position onto a cylindrical object such as a bar and pressing the grip pad down onto the bar until the bistable spring bands snap the grip pad around the bar and change into the wrapped position. The attachment mechanism may automatically contact the opposing end of the grip pad in order to secure the grip pad to itself around the bar, or the user may need to manually secure the attachment mechanism to the opposing end. The user can then grasp the grip pad and begin whatever activity the user intends to complete with the grip pad in place.

[0038] For a fitness activity such as weightlifting with a barbell, two grip pads may be secured to the barbell (one for each hand) and positioned at whatever spacing the user prefers. The user could also just use one grip pad for exercise bars, or tools. The pair of grip pads may be used on a pull-up bar, for example, or used in other physical activities, including weightlifting, deadlifts, cleans, jerks, presses, snatches, toes-to-bar or knees to elbows on a pull-up bar, bar muscle-ups performed on a pull-up bar, kettlebell swings, farmer walks with kettlebell or barbell, or the like. When the activity is complete, the user can then easily remove the grip pad or pads from the bar by detaching the attachment mechanism and bending the grip pad back into its open, straight configuration, where the bistable spring bands will snap back into their open straight configuration to retain the grip pads in that shape.

What is claimed is:

1. A deformable grip pad, comprising:
   an upper layer of flexible material in attachment with a bottom layer of the flexible material to form a cavity therebetween which is substantially enclosed;
   at least one bistable spring band positioned within the cavity, wherein the bistable spring band is configured to alternate the shape of the grip pad between a flat, straight configuration and a cylindrical, wrapped configuration.

2. The deformable grip pad of claim 1, wherein the flexible material is a textured neoprene.

3. The deformable grip pad of claim 2, wherein the flexible material is approximately 1 millimeter in thickness.

4. The deformable grip pad of claim 1, wherein a plurality of bistable spring bands are arranged in parallel within the cavity.

5. The deformable grip pad of claim 1, wherein three bistable spring bands are located in the cavity.

6. The deformable grip pad of claim 1, wherein cushion material is placed between the upper layer and bottom layer of flexible material.

7. The deformable grip pad of claim 1, which has an attachment device on each end.

8. The deformable grip pad of claim 1, wherein the flexible material is elastomeric.

9. A method of enhancing and cushioning hand gripping of a bar or bar-like apparatus by a user comprising the steps of:
   a. providing a deformable grip pad for one or both hands of the user, deformable grip pad, comprising:
      i. an upper layer of elastomeric material in attachment with a bottom layer of the elastomeric material to form a cavity therebetween which is substantially enclosed; and
      ii. at least one bistable spring band positioned within the cavity, wherein the bistable spring band is configured to alternate the shape of the grip pad between a flat, straight configuration and a cylindrical, wrapped configuration.

   b. attaching one deformable grip pad for each hand of the user to a bar or bar-like apparatus by use of the bistable spring band; and
   c. grasping the bar or bar-like apparatus around each of the deformable grip pads.

10. The method of claim 9, wherein the elastomeric material is a textured neoprene.

11. The method of claim 9, wherein cushion material is placed between the upper layer and bottom layer of flexible material.

12. The method of claim 9, which has an attachment device on one or both ends.

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