RACK-MOUNTED GLUTE-HAM DEVELOPER AND METHOD FOR MAKING THE SAME

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ABSTRACT

A rack-mounted glute-ham developer and a method of making a rack-mounted glute-ham developer. The rack-mounted glute-ham developer may include a roller assembly and a pad assembly. The roller assembly may be configured to mount to an exercise rack system. The pad assembly may be configured to mount to a support. The roller assembly and the pad assembly may be separate members (not joined by a permanent frame).
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RELATED APPLICATIONS

[0001] This application is a non-provisional application of prior pending U.S. Provisional Patent Application Ser. No. 62/002,440, filed May 23, 2014, which is herein incorporated by reference in its entirety.

BACKGROUND

[0002] 1. Field

[0003] Embodiments of the present invention relate generally to exercise equipment. More particularly, embodiments of the present invention relate to a rack-mounted Glute-Ham Developer (GHD) and method for making the same.

[0004] 2. Description of the Related Art

[0005] Glute-Ham Developers (GHDs) are known in the art. A known manufactured (or “off the shelf”) GHD may be a stand-alone exercise device including a frame joining a foot plate and associated rollers to a pad. In one exercise known as a glute-ham raise, an athlete may lay face down with their upper legs against the pad and their feet secured in-between the rollers. The athlete’s upper body may be brought from a resting or downwardly-angled position upwards to a horizontal position (or “super man” position) and ultimately to an upwardly vertical position. In this way, the manufactured GHD may exercise a variety of muscle groups, including the spinal erectors (or erector spinae), the glutal muscles, and the hamstring muscles.

[0006] Although useful, manufactured GHDs do have drawbacks. For example, manufactured GHDs tend to be relatively expensive stand-alone devices. Further, manufactured GHDs tend to take up a significant amount of floor and storage space, and may be difficult to move. Accordingly, some athletes will use other gym equipment to make “homemade” GHDs. For example, an athlete may substitute a weighted barbell for the foot plate and rollers, and may substitute a box with weights stacked thereon for the frame-connected pad. Other equipment substituted may include floor mats, exercise balls, homemade rollers, and the like. While being more affordable and somewhat easier to store and move, these homemade GHDs also have drawbacks. For example, homemade GHDs may be unstable. Further, because various elements are substituted in these homemade devices, an athlete may only receive a subpar experience relative to a manufactured GHD.

[0007] In light of the foregoing and other shortcomings in the art, it is desirable to provide an improved GHD.

BRIEF SUMMARY

[0008] It is an aspect of the invention to provide a more affordable, yet stable and effective GHD.

[0009] It is a further aspect of the invention to provide a GHD that is more easily stored and moved, yet still being stable and effective.

[0010] According to an aspect of the invention, a rack-mounted glute-ham developer may be provided. The rack-mounted glute-ham developer may include a roller assembly and a pad assembly. The roller assembly may be configured to mount to an exercise rack system. The pad assembly may be configured to mount to a support. The roller assembly and the pad assembly may be separate members (not joined by a permanent frame).

[0011] The roller assembly may be configured to mount to the exercise rack system using holes of a frame member of the exercise rack system.

[0012] The pad assembly may be configured to mount to a games box or a plyo box.

[0013] The roller assembly may include a foot plate, mounting member, support holders, roller shafts, and rollers. The mounting member may be connected to the foot plate and may also be connected to the support holders. The roller shafts may pass through rollers and holes of the support holders.

[0014] The pad assembly may include a base and one or more pads.

[0015] The rack-mounted glute-ham developer may further include a stabilizing member having a first end and a second end. The first end may be configured to mount to the exercise rack system. The second end may be configured to abut the games or the plyo box.

[0016] According to another aspect of the invention, a method of making a rack-mounted glute-ham developer may be provided. The method may include providing a flat metal blank to be formed into a foot plate, forming holes of to be created protruding members from the foot plate, and forming holes of the foot plate, forming out the protruding members, connecting a mounting member to the foot plate, connecting shaft holders to the mounting member, connecting rollers to roller shafts formed in the shaft holders, and forming a base and a pad.

[0017] The foregoing and other aspects will become apparent from the following detailed description when considered in conjunction with the accompanying drawing figures.

BRIEF DESCRIPTION OF THE DRAWINGS

[0018] FIG. 1 is a perspective view of a rack-mounted Glute-Ham-Developer (GHD) according to an exemplary embodiment of the present invention.

[0019] FIG. 2 is a perspective view of a rack-mounted GHD according to a second exemplary embodiment of the present invention.

[0020] FIG. 3 is a side elevation view of the rack-mounted GHD of FIG. 2.

[0021] FIG. 4 is a front elevation view of the rack-mounted GHD of FIG. 2.

[0022] FIG. 5 is a perspective view of the roller assembly of the rack-mounted GHD of FIG. 2.

[0023] FIG. 6 is a front elevation view of the roller assembly of FIG. 5.

[0024] FIG. 7 is a top view of the roller assembly of FIG. 5.

[0025] FIG. 8 is a side elevation of the roller assembly of FIG. 5.

[0026] FIG. 9 is a flowchart of a method of making a rack-mounted GHD according to an exemplary embodiment of the present invention.

[0027] FIGS. 10a and 10b are partial views of a rack-mounted GHD according to a third exemplary embodiment of the present invention.

DETAILED DESCRIPTION

[0028] Reference will now be made in detail to embodiments of the present invention, examples of which are illus-
trated in the accompanying drawings, wherein like reference numerals refer to the like elements throughout. The embodiments are described below to explain the present invention by referring to the figures.

[0029] As used in the description of this application, the terms “a”, “an” and “the” may refer to one or more than one of an element (e.g., item or act). Similarly, a particular quantity of an element may be described or shown while the actual quantity of the element may differ. The terms “and” and “or” may be used in the conjunctive or disjunctive sense and will generally be understood to be equivalent to “and/or”. Elements from an embodiment may be combined with elements of another. No element used in the description of this application should be construed as critical or essential to the invention unless explicitly described as such. Further, when an element is described as “connected,” “coupled,” or otherwise linked to another element, it may be directly linked to the other element, or intervening elements may be present.

[0030] According to an aspect of the invention, a rack-mounted glute-ham developer may be provided. The rack-mounted glute-ham developer may include a roller assembly and a pad assembly. The roller assembly may be configured to mount to an exercise rack system. One of ordinary skill in the art will appreciate that rack systems are known and understood in the cross-fit and fitness industry to include, e.g., floor mounted and wall mounted rack systems, some of which may stand taller than an athlete. In operation, the roller assembly may connect to a frame member of the exercise rack thus being rack-mountable. The pad assembly may be configured to mount to a support. In operation, the pad assembly may be placed upon the support. For example, the pad assembly may be placed upon a plyo box. It will be appreciated by one of ordinary skill in the art that, distinct from the known manufactured GHDs, the roller assembly and the pad assembly of a present embodiment may not be joined by a permanent frame. That is, the roller assembly and the pad assembly may be separate and unattached. Even in an embodiment utilizing a stabilizing member, the roller assembly and the pad assembly are separate and not permanently attached.

[0031] FIG. 1 is a perspective view of a rack-mounted Glute-Ham-Developer (GHD) 100 according to an exemplary embodiment of the present invention. The rack-mounted GHD 100 may include a roller assembly 102 and a pad assembly 104. The roller assembly 102 and the pad assembly 104 may not be joined by a permanent frame. The roller assembly may be similar to the roller assembly 202 discussed below with respect to the embodiment of FIG. 2. Focusing on the pad assembly 104, a base 170 including two pads 172 and two straps 174 may be provided.

[0032] The base 170 may be rectangular. The base 170 may be approximately 24 inches wide by 30 inches long by two inches tall. The base 170 may be formed of padded material such as foam padding covered by upholstery (e.g., vinyl, cloth, etc.). In an alternative embodiment, the base may be formed in an alternative shape such as a square. In an alternative embodiment, the base may be different dimensions such as 20 inches wide by 28 inches long. In another alternative embodiment (shown in FIG. 10), the base may be 10 inches tall. In another alternative embodiment, the base may include a hard member (e.g., wood, plastic, metal, etc.) covered by padded material. In yet another alternative embodiment, the base 170 may be formed of a hard material.

[0033] The pads 172 may be half-cylindrical in shape. The pads 172 may be affixed on top of and integral with the base 170. The pads 172 may be positioned on one side of the base 170 so as to form a pad side of the pad assembly 104 and a flat side of the pad assembly 104. The pads 172 may be approximately 10.5 inches wide by 15 inches long by 8 inches tall. The pads 172 may be formed of padded material such as foam or foam padding covered by upholstery. In an alternative embodiment, the pads may be formed in an alternative shape such as a rectangle. In an alternative embodiment, the pads may be of different dimensions. In another alternative embodiment, the pads may include a hard member or hard members covered by padded material. In yet another alternative embodiment, the pads 172 may be formed of hard material.

[0034] In operation, the pad assembly 104 may be placed upon a support. For example, the pad assembly 104 may be placed upon a plyo box or a cross-fit games box. A plyo box or games box may be rectangular in shape and may include dimensions of, for example, approximately 20 inches by 24 inches by 30 inches. The straps 174 may be placed around the support thereby securing the pad assembly 104 to the support. In an alternative embodiment, fasteners (e.g., bolts, clamps, etc.) may be provided to secure the pad assembly to the support.

[0035] FIG. 2 is a perspective view of a rack-mounted GHD 200 according to a second exemplary embodiment of the present invention. FIG. 3 is side elevation view of the rack-mounted GHD 200 of FIG. 2. FIG. 4 is a front elevation view of the rack-mounted GHD 200 of FIG. 2. FIG. 5 is a perspective view of the roll assembly 202 of the rack-mounted GHD 200 of FIG. 2. FIG. 6 is a front elevation view of the roller assembly of FIG. 5. FIG. 7 is a top view of the roller assembly of FIG. 5. FIG. 8 is a side elevation of the roller assembly of FIG. 5.

[0036] The rack-mounted GHD 200 may include a roller assembly 202 and pad assembly 204. In operation, the roller assembly 202 may connect to a frame member of an exercise rack thus being rack-mountable. By virtue of being rack-mountable, the roller assembly 202 may be adjustable in that a position on the rack at which the roller assembly 202 is to be mounted may be selected by an athlete. The roller assembly may include a foot plate 510, a mounting member 520, support holders 530, roller shafts 540, and rollers 550. Similar to the pad assembly 104 of FIG. 1, the pad assembly 204 may be secured and/or positioned atop a support such as a plyo box.

[0037] Tuning to FIGS. 2-4, the pad assembly 204 may include a base 270 including a single pad 272. The base 270 may be rectangular. The base 170 may be approximately 24 inches wide by 30 inches long by two inches tall. The base 270 may be formed of padded material. In an alternative embodiment, the base may be formed in an alternative shape and alternative dimensions. In another alternative embodiment, the base may include a hard member covered by padded material. In yet another alternative embodiment, the base may be formed of a hard material.

[0039] The pad 272 may be half-cylindrical in shape. The pad 272 may be affixed on top of the base 270. The pad 272 may be positioned on one side of the pad 270 so as to form a pad side of the pad assembly 204 and a flat side of the pad assembly 204. The pad 272 may be approximately 24 inches wide by 15 inches long by 8 inches tall. The pad 272 may include a channel 274 extending partially downward from a top of the half-cylinder down toward the base. The pad 272 may be formed of padded material. In an alternative embodiment, the pad may be formed in an alternative shape such as
a rectangular prism. In an alternative embodiment, the pad may be of different dimensions. In another alternative embodiment, the pad may include a hard member or hard members covered by padded material. In yet another alternative embodiment, the pad may be formed of hard material.

0040] Turning to FIGS. 5-8, the roller assembly 202 may include a foot plate 510, a mounting member 520, shaft holders 530, roller shafts 540, and rollers 550.

0041] The foot plate 510 may be rectangular. The foot plate 510 may be approximately 14 inches by 22 inches. The foot plate 510 may be formed of ¥1⁄8 inch flat steel. In an alternative embodiment, the foot plate may be formed in an alternative shape and in alternative dimensions. In another alternative embodiment, the foot plate may be formed of an alternative metal or other material such as carbon fiber.

0042] The foot plate 510 may include protruding members 512 protruding outward opposite the mounting member 520. The protruding members may include holes configured to align with holes in the frame member of the exercise rack. Fasteners (e.g., nuts and bolts, pegs, pop pins, detent pins etc.) may be placed through the holes of the protruding members 512 and the holes of the frame member of the exercise rack. The protruding members 512 may be formed by bending back portions of the foot plate 510 thereby leaving openings 514 in the foot plate 510. The foot plate 510 may include holes configured to align with holes in the frame member of the exercise rack. Fasteners may be placed through the holes of the foot plate 510 and the holes of the frame member of the exercise rack. In an alternative embodiment, the protruding members may be welded to the foot plate 510 and the openings 514 may or may not remain.

0043] The mounting member 520 may be welded to and protrude from a face of the mounting plate 510. The mounting member 520 may be a square prism. The mounting member 520 may be approximately 7 inches by 2 inches by 2 inches. The mounting member 520 may be formed of flat steel and thereby define a hollow area therein. In an alternative embodiment, the mounting member may be formed in an alternative shape (such as a cylinder) and in alternative dimensions. In another alternative embodiment, the mounting member may be formed of alternative metal or materials that may or may not be solid. In another alternative embodiment, the mounting member may otherwise be attached to the face of the mounting plate, such as by fasteners.

0044] Support holders 530 may extend upwardly and downwardly from a top and a bottom of the mounting member 520, respectively. The support members 530 may be generally rectangular with circular ends. Each circular end may include a shaft hole through which one of the roller shafts 540 may pass. A distance from a center of a shaft hole to an end of one of the support members 530 may be approximately 3 inches. Each support member 530 may be formed of flat steel. In an alternative embodiment, the support members 530 may be formed in alternative shapes (such as rectangles) and alternative dimensions. In another alternative embodiment, the support members 530 may be formed of alternative metals or materials. In yet another alternative embodiment, the support holders may connect in an adjustable manner to the mounting member so as to be adjustable. In another alternative embodiment, the support members may themselves be adjustable in length.

0045] Roller shafts 540 may extend through shaft holes of the support members 530. The roller shafts 540 may be cylindrical. The roller shafts 540 may be 24 inches in length. The roller shafts 540 may be formed of metal and may define a hollow area therein. In an alternative embodiment, the roller shafts 540 may be formed in alternative shapes and alternative dimensions. In another alternative embodiment, the roller shafts may be formed of alternative metal or materials that may or may not be solid.

0046] Rollers 550 may be placed over ends of the roller shafts 540. Rollers 550 may be secured in position along the axis of each roller shaft 540 by collars 552. The collars 552 may include a set screw for removal of the collars and the rollers 550. The rollers 550 may be cylindrical in shape. The collars 552 may be approximately 10 inches wide. The rollers 550 may be formed of a padded material with a hard core defining a shaft. In an alternative embodiment, the rollers may be formed in alternative shapes and alternative dimensions. In another alternative embodiment, the rollers may be formed entirely of a padded material, or entirely of a hard material.

0047] FIGS. 10a and 10b are partial views of a rack-mounted GHD 1000 according to a third exemplary embodiment of the present invention. The roller assembly and pad assembly may be similar to the roller and pad assembly discussed above with respect to the embodiment of FIG. 2, albeit with a taller base 1070. The rack-mounted GHD 1000 may further include a stabilizing member 1090. The stabilizing member may include two parallel strips having holes passing there through, a spacing plate between a portion of the two parallel strips and, at one end, a seating member. In operation, one end of the stabilizing member may connect to a frame member of an exercise rack while the other end of the stabilizing member, i.e., the seating member, may sit upon the top of a plyo box.

0048] FIG. 9 is a flowchart of a method of making a rack-mounted GHD according to an exemplary embodiment of the present invention. In operation 902, a flat metal blank (e.g., flat plate made of steel, aluminum, titanium) having the shape of the foot plate 510 is provided. In operation 904, the holes of the to be created protruding members 512 and the holes of the foot plate 510 may be made (e.g., punched, cut, drilled, machined). In operation 906, the protruding members 512 may be bent out perpendicular from a plane of the foot plate 510. In operation 908, the mounting member 520 may be connected (e.g., welded, bolted) to the foot plate 510. In operation 910, the shaft holders 530 may be connected (e.g., welded, bolted) to the mounting member 520. It may be appreciated by one of ordinary skill in the art that in an alternative embodiment, one or more of the foot plate, the mounting member, and the support holders may be cast as a single integral element. In operation 912, each of the roller shafts 540 may be passed though one of the rollers 550, one of the shaft holes of one of the support members 530, and another of the rollers 550. Collars 552 may be placed around the ends of the roller shafts thereby securing the rollers to the roller shafts. In operation 914, a base and a pad may be formed (e.g., molded and covered by vinyl upholstery).

0049] Embodiments of the present invention may provide multiple advantages. For example, a rack-mounted glute-ham developer according to an embodiment may be more affordable, yet stable and effective. A rack-mounted glute-ham developer according to an embodiment may be easier to store and move, yet still be stable and effective. Further, embodiments may be easy to stack, may use existing equipment and may be adjustable, yet still be stable and effective.

0050] Although embodiments of the present invention have been shown and described, it would be appreciated by
those skilled in the art that changes may be made in these embodiments without departing from the principles and spirit of the invention, the scope of which is defined in the claims and their equivalents. For example, although two pads are shown mounted to a base, a different number of pads may be mounted to the base. For example, a single pad may be mounted to the base. As another illustrative example, although the operations of Fig. 9 are shown in a particular order, that order is not necessarily the preferred order. For example, operation 906 may occur before operation 904.

1. A rack-mounted glute-ham developer comprising:
   a roller assembly configured to mount to an exercise rack system; and
   a pad assembly configured to mount to a support, wherein the roller assembly and the pad assembly are not joined by a permanent frame.

2. A rack-mounted glute-ham developer according to claim 1, wherein the roller assembly is configured to mount to the exercise rack system using holes of a frame member of the exercise rack system.

3. A rack-mounted glute-ham developer according to claim 1, wherein the pad assembly is configured to mount to a games box or a plyo box.

4. A rack-mounted glute-ham developer according to claim 1, wherein the roller assembly comprises:
   a foot plate;
   a mounting member connected to the foot plate;
   support holders connected to the mounting member;
   roller shafts passing through holes of the support holders; and
   rollers having the roller shafts passing through them.

5. A rack-mounted glute-ham developer according to claim 1, wherein the pad assembly includes a base and one or more pads.

6. The rack-mounted glute-ham developer according to claim 3, further comprising a stabilizing member having a first end and a second end, wherein the first end is configured to mount to the exercise rack system, and wherein the second end is configured to abut the games box or the plyo box.

7. A rack-mounted glute-ham developer comprising:
   a roller assembly configured to mount to an exercise rack system; and
   a pad assembly configured to mount to a support, wherein the roller assembly and the pad assembly are not joined by a frame, and
   wherein the roller assembly comprises:
   a foot plate;
   a mounting member connected to the foot plate;
   support holders connected to the mounting member;
   roller shafts passing through holes of the support holders; and
   rollers having the roller shafts passing through them.

8. A rack-mounted glute-ham developer according to claim 7, wherein the roller assembly is configured to mount to the exercise rack system using holes of a frame member of the exercise rack system.

9. A rack-mounted glute-ham developer according to claim 7, wherein the pad assembly is configured to mount to a games box or a plyo box.

10. A rack-mounted glute-ham developer according to claim 7, wherein the pad assembly includes a base and one or more pads.

11. A rack-mounted glute-ham developer according to claim 9, further comprising a stabilizing member having a first end and a second end, wherein the first end is configured to mount to the exercise rack system, and wherein the second end is configured to abut the games box or the plyo box.

12. A method of making a rack-mounted glute-ham developer, comprising:
   providing a flat metal blank to be formed into a foot plate, forming holes of to be created protruding members from the foot plate, and forming holes of the foot plate;
   bending out the protruding members;
   connecting a mounting member to the foot plate;
   connecting the roller assembly to the mounting member;
   connecting the rollers via roller shafts through holes formed in the roller assembly; and
   forming a base and a pad.