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(54) Title: ATTACHMENT AND MOUNTING ASSEMBLY FOR AN EXERCISE BENCH

(57) Abstract: The present invention provides attachment and mounting assemblies that allow a user to releasably connect various accessories with an exercise device, such as an exercise bench. As such, a user use a plurality of different exercise accessories with a single exercise bench. Some attachment assemblies can include a mounting bracket connected with an exercise accessory and configured to releasably connect with different components of the exercise bench. The mounting bracket can be configured with one or more hooks adapted to engage one or more bosses or studs on an accessory support member connected with the exercise bench. In addition, a removable pin can be inserted through corresponding apertures in the support member and mounting bracket to help secure the exercise accessory to the exercise bench.
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ATTACHMENT AND MOUNTING ASSEMBLY FOR AN EXERCISE BENCH

CROSS-REFERENCE TO RELATED APPLICATIONS

This Patent Cooperation Treaty patent application claims the priority to U.S. Provisional Application No. 60/602,247 filed on August 16, 2004 and entitled “Attachment and Mounting Assembly For an Exercise Bench”, and a United States Non-Provisional Application filed August 15, 2005, entitled “Attachment and Mounting Assembly For an Exercise Bench”, which can be identified in the United States Patent and Trademark Office by attorney docket number 34772/US/2 and further identified by United States Postal Service Express Mail Label No. EV 680 426 365 US, both of which are hereby incorporated herein by reference.

BACKGROUND OF THE INVENTION

a. Field of the Invention

Aspects of this invention relate to exercise devices, some more particular aspects involve attachment and mounting assemblies for releasably coupling various exercise accessories with an exercise bench.

b. Background Art

Many currently available exercise benches provide a frame with a user support upon which a user can place his body while performing various exercises. For example, a user can lift free weights or interface with another exercise device, such as a universal-type gym exercise system, while being supported on a exercise bench. Some exercise benches can also include an exercise accessory connected therewith that allows a user to perform additional exercises, such as leg curls while seated on the exercise bench. However, many of these exercise accessories are permanently attached to the exercise benches. As such, a user cannot easily remove the exercise accessory and/or swap it out with another accessory in order to perform a different exercise. For example, a user cannot easily reconfigure such an exercise bench with a leg curl accessory to one with a preacher curl accessory. As such, a user of such an exercise bench may be limited to a relatively small number of different exercises that can be performed with the exercise bench and/or may need access to more than one exercise bench in order to perform a larger variety of different exercises.

BRIEF SUMMARY OF THE INVENTION

The present invention provides attachment and mounting assemblies that allow a user to releasably connect various accessories with an exercise device, such as an exercise bench. As such, a user can use a plurality of different exercise accessories with a single exercise bench. Examples of such accessories include leg hold-down accessories, leg developer accessories, and preacher curl accessories. With the aforementioned examples, one exercise bench can be selectively configured for leg extension exercises, leg curl exercises, and/or curl exercises. In other applications, accessories can be connected with the exercise bench to allow a user to interface with other exercise devices. For
example, a leg hold-down accessory can be connected with the exercise bench that allows a user to maintain his position on the exercise bench when performing pull-down exercises with a lat tower. Some attachment assemblies can include a mounting bracket connected with various exercise accessories and configured to releasably connect with different components on the exercise bench. In some embodiments, the brackets are configured to releasably connect directly with a bench frame. In other embodiments, the brackets are configured to releasably connect with an accessory support member connected with a bench frame. The mounting bracket can be configured with one or more hooks adapted to engage one or more bosses or studs on the accessory support member. In addition, the attachment assembly can include a removable pin adapted to be inserted through corresponding apertures in the support member and mounting bracket to help secure the exercise accessory to the exercise bench. It is to be appreciated that the attachment and mounting configurations should not be construed to be limited to use with only the exercise bench and accessories depicted and described herein.

In one aspect of the present invention, an attachment assembly for releasably connecting an exercise accessory with an exercise device includes: a support member having at least one first aperture; at least one boss connected with the accessory support member; a bracket having at least one hook adapted to engage the at least one boss and having at least one second aperture; and a pin adapted to be inserted through the at least one first aperture and the at least one second aperture. The at least one second aperture in the mounting bracket is adapted to align with the at least one first aperture in the accessory support member when the at least one hook engages the at least one boss.

In another form of the present invention, an exercise device includes: a frame; a user support coupled with the frame; a support member connected with the frame; at least one boss connected with the support member and having at least one first aperture; an exercise accessory; a bracket connected with the exercise accessory, the bracket having at least one hook adapted to engage the at least one boss and having at least one second aperture; and a pin adapted to be inserted through the at least one first aperture and the at least one second aperture. The at least one second aperture in the mounting bracket is adapted to align with the at least one first aperture in the accessory support member when the at least one hook engages the at least one boss.

In yet another form of the present invention, an exercise device includes: a frame; a user support coupled with the frame; an accessory support member connected with the frame, the accessory support member having at least one aperture; and at least one boss connected with the accessory support member.

In still another form of the present invention, an exercise device includes: a frame; a user support operably coupled with the frame; an exercise accessory; and a means for connecting the exercise accessory with the frame.
The features, utilities, and advantages of various embodiments of the invention will be apparent from the following more particular description of embodiments of the invention as illustrated in the accompanying drawings and defined in the appended claims.

**BRIEF DESCRIPTION OF THE DRAWINGS**

Fig. 1 is an isometric view of an exercise bench with a leg hold-down accessory connected therewith.

Fig. 2 is a right side view of the exercise bench shown in Fig. 1.

Fig. 3 is a right side view of the exercise bench shown in Fig. 1 with the leg hold-down accessory removed.

Fig. 4 is a detailed view of an accessory support member of the exercise bench shown in Fig. 3.

Fig. 5A is a cross-sectional view of the exercise bench depicted in Fig. 3, taken along line 5A-5A.

Fig. 5B is a cross-sectional view of the exercise bench depicted in Fig. 2, taken along line 5B-5B.

Fig. 6 shows an exploded view of the exercise bench and leg hold-down accessory shown in Fig. 1.

Fig. 7 is a detailed view of the exercise bench and leg hold-down accessory shown in Fig. 6.

Fig. 8A is an isometric view of a mounting bracket.

Fig. 8B is a cross-sectional view of the mounting bracket depicted in Fig. 8A, taken along line 8A-8A.

Fig. 9 is a right side view of an exercise bench with a leg developer accessory connected therewith.

Fig. 10 is a detailed isometric view of the leg developer accessory and exercise bench shown in Fig. 9.

Fig. 11 is an exploded view of the leg developer accessory and exercise bench shown in Fig. 10.

Fig. 12 is a right side view of an exercise bench with a preacher curl accessory connected therewith.

Fig. 13 is a detailed isometric view of the preacher curl accessory and exercise bench shown in Fig. 12.

Fig. 14 is an exploded view of the preacher curl accessory and exercise bench shown in Fig. 12.

Fig. 15A is an isometric view of a second embodiment of a mounting bracket.

Fig. 15B is a cross-sectional view of the mounting bracket depicted in Fig. 15A, taken along line 15B-15B.
DETAILED DESCRIPTION OF THE INVENTION

Embodiments of the present invention provide attachment and mounting assemblies that allow a user to easily and reliably connect and disconnect various accessories with an exercise device, such as an exercise bench. As discussed in more detail below, attachment and mounting assemblies according to aspects of the present invention can be configured to releasably couple various exercise accessories with an exercise bench. As such, a user can use a single exercise bench to perform different exercises with different exercise accessories. Examples of such accessories include leg hold-down accessories, leg developer accessories, and preacher curl accessories. With the aforementioned accessories, one exercise bench can be selectively configured to perform leg extension exercises, leg curl exercises, and/or curl exercises. In another example, a leg hold-down accessory can be connected with the exercise bench to allow a user to more easily interface with other exercise devices, so as to perform pull-down exercises with a lat tower for example.

As described below in more detail, attachment and mounting assemblies can include various components adapted to releasably connect various exercise accessories with an exercise bench. In some embodiments, the attachment assemblies are configured to releasably connect the exercise accessories directly with a bench frame. In other embodiments, the attachment assemblies are configured to releasably connect the accessories with an accessory support member, which in turn, is connected with a bench frame. As described below, attachment assemblies can include a mounting bracket having one or more hooks adapted to engage one or more bosses or studs on the accessory support member. In addition, the attachment assemblies can include a removable pin adapted to be inserted through corresponding apertures in the mounting bracket and accessory support member. As such, the mounting bracket can be connected with the accessory support member by first engaging the hooks with the bosses and then inserting the removable pin through the corresponding apertures in the support member and mounting bracket. It is to be appreciated that the attachment and mounting configurations described and depicted herein can be used with various types and styles of exercise devices, exercise benches, and exercise accessories and should not be construed to be limited to those depicted and described herein.

Figs. 1-6 and others show one example of an exercise device in the form of an exercise bench 100 with an attachment assembly 101 to releasably connect various exercise accessories 102 with the exercise bench. As shown in Figs. 1-4 and 6, the exercise bench 100 includes a user support 104 having a front seat 106 and a back rest 108, which are both adjustably supported on a bench frame 110. The frame 110 includes an arcuate center support member 112 connected with a front base member 114 and a rear base member 116, both of which are adapted to stably support the exercise bench on a support surface, such as a floor or a ground surface. The arcuate center support member 112 defines a front support portion 118 extending rearward and upward from the front base member 114, and a rear support portion 120 extending forward and upward from the rear base member 116. A user can lift and drag the exercise bench from one location to another by grasping a handle 130
connected with the front support portion 118 of the arcuate center support member 112. Right and left seat support brackets 122, 124 are connected with opposing sides of the arcuate center support member 112 near an apex 126 of the curved shape of the center support member. As described in more detail below, the user support 104 is pivotally connected with a seat axle 128 extending between the seat support brackets 122, 124.

The exercise bench can be configured with various types of user supports having various features to support a user in different positions. For example, the incline of the back rest 108 of the exercise bench 100 depicted in Figs. 1-6 and others can be configured with an adjustable incline. As shown in Figs. 2, 3 and 6, the back rest 108 of the user support is connected with right and left rear seat support members 132, 134. The rear support members, in turn, are pivotally connected with the seat axle 128 extending between the seat support brackets 122, 124. As such, the incline of the back rest 108 of the user support 104 can be adjusted by pivoting the back rest up and down about the seat axle 128 (directions A and B, respectively, in Figs. 2 and 3).

The exercise bench can also be configured to allow a user to selectively maintain the back rest portion in a desired level of incline. As shown in Figs. 2, 3, and 6, the exercise bench 100 includes a rear seat adjustment member 136 pivotally connected with the back rest 108 of the user support 104. A first end portion 138 of a rear seat adjustment member 136 is pivotally connected with a rear axle 140 extending between the two rear seat support members 132, 134. As such, the rear seat adjustment member 136 can pivot forward and rearward (directions A' and B', respectively, in Figs. 2 and 3). A second end portion 142 of the rear seat adjustment member is adapted to engage a plurality of stop brackets 144 connected with the rear support portion 120 of the arcuate center support member 112. As best shown in Fig. 6, each stop bracket includes a rear side 146 extending upward from a top surface 148 of the rear support portion 120 of the arcuate center support member 112. Although the exercise bench is depicted with six stop brackets, it is to be appreciated that the exercise bench can include more or less than six stop brackets. As shown in Figs. 2, 3, and 6, when the second end portion 142 of the rear seat adjustment member 136 is engaged with the rear side 146 of one of the stop brackets 144, the back rest 108 of the user support 104 prevented from pivoting downward (direction B in Figs. 2 and 3). As such, the incline of the back rest portion can be selectively adjusted by engaging the second end portion of the rear seat adjustment member with a particular stop bracket.

When increasing the incline of the back rest 108 of the user support 104, the user first pivots the back rest 108 upward (direction B in Fig. 2), which disengages the second end portion 142 of the rear seat adjustment member 136 of from the stop brackets 144. As the user continues to pivot the back rest 108 upward, the rear seat adjustment member 136 is pivoted forward (direction B' in Figs. 2 and 3). The second end portion 142 of the rear seat adjustment member 136 can then be placed in engagement with a different stop bracket 144, such as shown in Fig. 3. When decreasing the incline of the back rest 108 of the user support 104, the user pivots the back rest 108 upward (direction A in Fig. 3) enough to disengage the second end portion 142 of the rear seat adjustment member 136 from
the stop bracket 144. The user can then pivot the rear seat adjustment member 136 rearward (direction B' in Figs. 2 and 3) while at the same time pivoting the back rest 108 downward (direction B in Figs. 2 and 3). The second end portion 136 of the rear seat adjustment member 136 can then be placed in engagement with another stop bracket 144, such as shown in Fig. 2.

The front seat 106 of the exercise bench 100 depicted in Figs. 1-6 and others can also be configured an adjustable incline. As shown in Figs. 2-5A, the front seat 106 of the user support 104 is connected with right and left front seat support members 150, 152, which are pivotally connected with the seat axle 128. As such, the incline of the front seat 106 of the user support 104 can be adjusted by pivoting the front seat up and down about the seat axle (directions C and D, respectively, in Figs. 2 and 3). The exercise bench 100 can also be configured to allow a user to selectively maintain the front seat 106 in a desired level of incline. As shown in Fig. 2, 3, and 5A, the exercise bench includes right and left front seat adjustment members 154, 156 pivotally connected with the front seat 106 of the user support 104. First end portions 158 of the front seat adjustment members 154, 156 are pivotally connected with the front seat support members 150, 152 at a forward pivot 160. As such, the front seat adjustment members 154, 156 can pivot rearward and forward (directions C' and D', respectively, in Figs. 2 and 3). As shown in Figs. 4 and 5A, second end portions 112 of the front seat adjustment members are connected with a cross member 164. The cross member 164 extends through corresponding slots 166 extending along a portion of opposing sides of a front extension member 168. As shown in Figs. 2 and 3, the front extension member 168 extends forward from the front support portion 118 of the arcuate center support 112. As shown in Fig. 4, the slots 166 in the opposing sides of the front extension member 168 include a downwardly extending first end portion 170 intersecting a longitudinally extending second end portion 172 defining a stop ledge 174 therebetween. Pivoting the front seat 106 up or down while at the same time positioning the cross member 164 in the first or second end portions 170, 172 of the slot 166 allows a user to select between two incline positions for the front seat.

When the cross member 164 is positioned in the first end portion of the slots 166, the cross member is in an abutting relationship with stop ledge 174, as shown in Fig. 2. As such, the front seat 106 of the user support 104 is prevented from pivoting downward (direction D in Fig. 2). When decreasing the incline of the front seat of the user support, the user initially pivots the front seat upward (direction C in Fig. 2), which positions the cross member 164 above the stop ledge 174, allowing the cross member to slide forward toward the second end portions 172 the slots 166. Once the cross member is lifted above the stop ledge 174, the user pivots the front seat 106 downward while at the same time pivoting the front seat adjustment members 154, 156 forward (direction C' in Figs. 2 and 3) until the cross member 164 engages the second end portion 172 of the slots 164 as shown in Fig. 3.

When increasing the incline of the front seat 106 of the user support 106, the user first pivots the front seat upward (direction C in Fig. 3). As the front seat pivots upward, the front seat
adjustment members 154, 156 pivot rearward (direction C' in Figs. 2 and 3), which moves the cross member 164 rearward toward the intersection of the first and second end portions 170, 172 of the slots 164. Above the stop ledge 174. Once the cross member 164 is positioned above the stop ledge 174, the user pivots the front seat 106 downward (direction D in Fig. 2). As the front seat pivots downward, the cross member also moves downward and is placed into an abutting relationship with the stop ledge, as shown in Fig. 2.

As previously mentioned, the exercise bench 100 and exercise accessory 102 shown in Figs. 1-6 and others are configured with an attachment assembly 101 to releasably connect the exercise accessory 102 with the exercise bench. The attachment assembly 101 can include an accessory support member 176 connected with the exercise bench 100 adapted to releasably connect with and support various types of exercise accessories 102. As shown in Figs. 1-6 and others, the accessory support member 176 extends upward and forward from the front support portion 118 of the arcuate center support 112. It is to be appreciated that various embodiments of exercise benches can include different accessory support members. For example, as shown in Figs. 1 and 5B, the accessory support member 176 defines a generally square cross-section and is fitted with a cap 178 at the upper end portion thereof. In other embodiments, the accessory support member defines differently shaped cross sections, such as a circular cross-section and can be constructed from various types of materials, such as metal tubing. As previously mentioned, other embodiments of attachment assemblies need not include a separate accessory support member, and as such, various exercise accessories can be releasably connected directly with various bench frame components, such as the arcuate center support member 112.

As previously mentioned, the attachment assembly 101 can include a mounting bracket 180 connected with the exercise accessory and adapted to connect with the accessory support member 176. As shown in Figs. 1, 4, 5B, 6, and others, hooks 184 defined on the mounting bracket 180 are adapted to engage studs or bosses 182 extending from opposing sides of the accessory support member. As shown in Fig. 5B, a single member 183 extending through opposing sides of the accessory support member 176 can be used to form the bosses 182. In other embodiments, the bosses can be formed by connecting two separate studs with opposing sides of the accessory support member. As discussed in more detail below, the bosses 182 assist the user in positioning the mounting bracket 180 on the accessory support member 176 as well as holding the mounting bracket in a fixed position relative to the accessory support member. In addition, the attachment assembly 101 can include a pin 188 adapted to be inserted through in pin apertures 186 in the accessory support member 176 to help connect the mounting bracket 180 with the accessory support member 176.

Figs. 1, 2, 6, and 7 show one example of an exercise accessory 102 in the form of a leg hold-down accessory 190 with the attachment assembly 101 adapted to releasably connect with the accessory support member 176. As shown in Figs. 1, 6, and 7, the leg hold-down accessory 190 includes a pair of roller pads 192 and mounting bracket 180 connected with opposing end portions of
a first member 194. The pair of roller pads 192 are rotatably supported on right and left pad support members 196, 198 extending outward from opposing sides of the first member 194. The roller pads 192 are adapted to engage a user’s legs when performing exercises so as to help maintain the user’s position on the exercise bench 100. For example, a user can position his legs behind the roller pads 192 to help maintain his position on the front seat 106 when performing pulldown exercises when the exercise bench is used in conjunction with a lat tower (not shown).

As previously mentioned, the mounting bracket 180 is adapted to engage and releasably connect with the accessory support member 176. It is to be appreciated that embodiments of mounting bracket can be configured in different ways so as to properly engage the accessory support member. For example, the mounting bracket 180 shown in Figs. 7, 8A, and 8B is U-shaped and defines a first side 200 and a second side 202 connected with and separated by a base side 204. The first side 200 and the second side 202 are substantially mirror images of each other. Although the mounting bracket is depicted as a unitary piece, it is to be appreciated that the mounting bracket could be constructed from a plurality of pieces. Referring to Figs. 7 and 8B, the hooks 184 are defined in a bottom edge 206 of the first and second sides 200, 202 of the mounting bracket 180. As shown in Fig. 8B, the bottom edges 206 of the first and second sides 200, 202 of the mounting bracket extend upward from a bottom edge 208 of the base side 204 to a concave portion 210. From the concave portion, the bottom edges extend outward from the base side and intersects with arcuate forward portions 212. As shown in Figs. 7 and 8A, pin apertures 214 are located in the first and second sides 200, 202 directly across from each other. As discussed in more detail below, the pin apertures 214 are spaced a sufficient distance from the base side 204 such that when the mounting bracket 180 is engaged with the accessory support member 176, the pin apertures 214 on the mounting bracket 176 align with the pin apertures 186 on the accessory support member 176.

As shown in Fig. 7, the leg hold-down accessory 190 can be connected with the accessory support member 176 by first placing the hooks 184 on the mounting bracket 180 into engagement with the bosses 182 extending from the accessory support member. The mounting bracket 180 is then rotated about the bosses 182 until the base side 204 of the mounting bracket 180 is adjacent to and in contact with a front side 216 of the accessory support member 176. At this point, the pin apertures 214 in the mounting bracket 180 are aligned with the pin apertures 186 in the support member 176. The pin 188 can then be inserted through the apertures 186, 214 to secure the mounting bracket 180 and the leg hold-down accessory 190 to the accessory support member 176. The engagement of the hooks 184 with the bosses 182 extending from the accessory support member 176 help prevent the mounting bracket 180 from disengaging from the accessory support member 176 when forces are applied to the leg hold-down accessory 190, such as may occur during exercise. In addition, when the leg hold-down accessory 190 is connected with the forward support member 176, forces applied to the leg hold-down accessory in the forward and rearward directions are resisted through the engagement of the hooks 184 and pin 188 with accessory support member 176. To disconnect the leg hold-down
accessory from the forward support member, the pin is removed from the pin apertures, and the leg hold-down accessory is lifted upward and away from the accessory support member to disengage the hooks from the bosses.

The attachment assembly may also include various pin configurations used to connect the mounting bracket 180 with the accessory support member 176. In one example, as shown in Figs. 5B and 7, the pin 188 may be an elongated member having a generally circular cross-section. It is to be appreciated that other cross-sectional shapes can be used, such as oval, square, rectangular, multisided, or other conventional shapes, preferably shaped to fit within the pin aperture. The pin 188 may also include a spring-loaded locking mechanism or depressible protrusion 218 to help prevent unintended axial movement and/or disengagement of the pin from the pin apertures 186, 214. For example, as shown in Fig. 5B, the locking mechanism 218 can include a spring-loaded ball bearing 220 located near a distal end portion 222 of the pin 188. A relatively small outer portion 224 of the ball bearing 220 extends outwardly from the outer circumferential surface of the pin 188 to engage sidewalls of the pin apertures 186, 214, thus requiring an increased force to move the distal end portion 222 of the pin 188 through the apertures. For example, as the pin 188 is inserted through the pin apertures, the small outer portion 224 of the ball bearing 220 engages the sidewalls of the apertures and is forced inward against a spring 226, allowing the pin to pass through the apertures. Once the ball bearing passes through the apertures, the spring 226 forces the small outer portion 224 of the ball bearing 220 outward again. In addition, as shown in Figs. 4, 5B, 7, and others, a proximate end portion 228 of the pin may be connected with or otherwise secured to the accessory support member 176 or other portion of the exercise bench 100 or equipment. For example, a coil, cable, tether, or other attachment member 230 can be used to connect the pin 188 with the accessory support member 176 so that the pin is not lost or misplaced when disengaged from the accessory support member.

Figs. 9-11 show an exercise accessory 102 in the form of a leg developer accessory 232 with an attachment assembly 101 adapted to releasably connect the leg developer accessory with the exercise bench 100. The attachment assembly includes a mounting bracket 180' connected with the first member 194'. The mounting bracket 180' is substantially similar to the mounting bracket 180 described above with reference to Figs. 8A and 8B. The leg developer accessory 232 provides the user with the ability to perform leg extension exercises while seated on the user support 104 as well as leg curl exercises while lying on the user support. As shown in Figs. 9-11, the leg developer accessory 232 includes a pivot member 234 connected with a first member 194'. The pivot member 234 is pivotally connected with an upper end portion 236 of the first member at a first pivot 237. As shown in Figs. 10 and 11, the front seat 106 includes a notched area 239 adapted to receive a portion of the first member 194', which places the leg developer accessory in closer proximity to a user seated on the exercise bench. As shown in Fig. 9, the pivot member 234 is L-shaped and is defined by a leg extension portion 238 connected with a leg curl portion 240. A weight support post 242 extends
outward from the leg extension portion of the pivot member. The weight support post is adapted to receive and support weight plates to allow a user to selectively adjust the exercise resistance.

As shown in Figs. 9-11, the leg developer accessory 232 includes a pair of upper roller pads 244 rotatably supported on right and left upper pad support members 246, 248 extending outwardly from the leg curl portion 240 of the pivot member 234. The upper roller pads 244 are adapted to engage a user's legs when performing leg curl exercises. Still referring to Figs. 9-11, the leg developer accessory also includes a pair of lower roller pads 250 rotatably supported on right and left lower pad support members 252, 254 extending outwardly from the leg extension portion 238 of the pivot member 234. The lower roller pads 250 are adapted to engage a user's legs when performing leg extension exercises.

As previously mentioned, the mounting bracket 180' shown in Figs. 9-11 is substantially the same mounting bracket 180 as described above with reference to the attachment assembly 101. As such, the mounting bracket 180' includes hooks 184' and pin apertures 214' adapted to engage the accessory support member 176 to releasably connect the leg developer accessory with the exercise bench 100. As shown in Fig. 11, the leg developer accessory 232 can be connected with the accessory support member 176 by first placing the hooks 184' on the mounting bracket 180' into engagement with the bosses 182 extending from the accessory support member. The mounting bracket is then rotated about the bosses 182 until the base side 204' of the mounting bracket is adjacent to and in contact with the front side 216 of the accessory support member 176. At this point, the pin apertures 214' in the mounting bracket 180' are aligned with the pin apertures 186 in the support member 176. The pin 188 can then be inserted through the apertures 186, 214' to secure the mounting bracket 180' to the accessory support member 176. As described above, the engagement of the hooks 184' with the bosses 182 on the accessory support member help prevent the mounting bracket from disengaging from the accessory support member when forces are applied to the leg developer accessory, such as may occur during exercise. In addition, when the leg developer accessory is connected with the forward support member, forces applied to the leg developer accessory in the forward and rearward directions are resisted through the engagement of the hooks and pin with accessory support member. To disconnect the leg developer accessory 232 from the forward support member 176, the pin 188 is removed from the pin apertures 186, 214', and leg developer accessory is lift upward and away from the accessory support member to disengage the hooks from the bosses.

Figs. 12-14 show an exercise accessory 102" in the form of a preacher curl accessory 256 with an attachment assembly 101" adapted to releasably connect with the exercise bench. The preacher curl accessory 256 provides the user with the ability to perform arm curl exercises while seated on the user support 104. As shown in Fig. 12, the preacher curl accessory 256 includes a V-shaped arm support 258 connected with an upper end portion 260 of a first member 194". The attachment assembly 101" also includes a mounting bracket 180". As shown in Figs. 15A and 15B, the mounting bracket 180" is similar to the mounting bracket 180 described above with reference to Figs. 8A and
8B, and as such, includes hooks 184" and pin apertures 214". However, unlike the mounting bracket shown in Figs. 8A and 8B, the first and second sides 200", 202" of the mounting bracket 180" shown in Figs. 15A and 15B have curved upper portions 262 that extend upward and rearward to connect with the base side 204".

As shown in Figs. 12-14, the mounting bracket 180" is coupled with the first member 194" through a support tube 264 and pop-pin 266 arrangement that allows a user to selectively adjust the height of the arm support 258. More particularly, the mounting bracket 180" is connected with the support tube 264. The support tube 264, in turn, is adapted to telescopically receive the first member 194" therein, and the first member is selectively connected with the support tube through the pop-pin assembly 266. As shown in Fig. 12, the pop-pin assembly 266 is adapted to selectively engage a plurality of apertures 268 extending along a portion of the length of the first member 194. Although the first member of the preacher curl accessory is coupled with the support bracket through the support tube and pop-pin, it is to be appreciated that in other embodiments of the preacher curl accessory, the first member is directly connected with the mounting bracket.

The preacher curl accessory 256 is releasably connected with the accessory support member 176 in substantially the same manner as described above with reference to the leg hold-down accessory 190 and leg developer accessory 232. As shown in Fig. 12, the preacher curl accessory 256 can be connected with the accessory support member 176 by first placing the hooks 184" on the mounting bracket 180" into engagement with the bosses 182 extending from the accessory support member 176. The mounting bracket 180" is then rotated about the bosses until the base side 204" of the mounting bracket is adjacent to and in contact with the front side 216 of the accessory support member 176. At this point, the pin apertures 214" in the mounting bracket 180" are aligned with the pin apertures 182 in the support member 176. The pin 188 can then be inserted through the apertures 186, 214" to secure the mounting bracket 180" and the preacher curl accessory 256 to the accessory support member 176. As described above, the engagement of the hooks 184" with the bosses 182 extending from the accessory support member help prevent the mounting bracket from disengaging from the accessory support member when forces are applied to the preacher accessory, such as may occur during exercise. In addition, when the preacher curl accessory is connected with the forward support member, forces applied to the exercise accessory in the forward and rearward directions are resisted through the engagement of the hooks and pin with accessory support member. To disconnect the preacher curl accessory from the forward support member, the pin 188 is removed from the pin apertures 186, 214", and the preacher curl accessory is lifted upward and away from the accessory support member to disengage the hooks from the bosses.

It will be appreciated from the above noted description of various arrangements and embodiments of the present invention that attachment and mounting assemblies adapted to releasably connect various exercise accessories with an exercise device have been described. It will also be appreciated that the features described in connection with each arrangement and embodiment of the
attachment assemblies, exercise accessories, and exercise devices are interchangeable to some degree so that many variations beyond those specifically described are possible. For example, the leg hold-down and leg developer accessories can be configured to be coupled with a mounting bracket through a support tube and pop-pin arrangement similar that described with reference to the preacher curl accessory.

Although various representative embodiments of this invention have been described above with a certain degree of particularity, those skilled in the art could make numerous alterations to the disclosed embodiments without departing from the spirit or scope of the inventive subject matter set forth in the specification and claims. All directional references (e.g., upper, lower, upward, downward, left, right, leftward, rightward, top, bottom, above, below, vertical, horizontal, clockwise, and counterclockwise) are only used for identification purposes to aid the reader's understanding of the embodiments of the present invention, and do not create limitations, particularly as to the position, orientation, or use of the invention unless specifically set forth in the claims. Joinder references (e.g., attached, coupled, connected, and the like) are to be construed broadly and may include intermediate members between a connection of elements and relative movement between elements. As such, joinder references do not necessarily infer that two elements are directly connected and in fixed relation to each other.

In some instances, components are described with reference to "ends" having a particular characteristic and/or being connected with another part. However, those skilled in the art will recognize that the present invention is not limited to components which terminate immediately beyond their points of connection with other parts. Thus, the term "end" should be interpreted broadly, in a manner that includes areas adjacent, rearward, forward of, or otherwise near the terminus of a particular element, link, component, part, member or the like. In methodologies directly or indirectly set forth herein, various steps and operations are described in one possible order of operation, but those skilled in the art will recognize that steps and operations may be rearranged, replaced, or eliminated without necessarily departing from the spirit and scope of the present invention. It is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative only and not limiting. Changes in detail or structure may be made without departing from the spirit of the invention as defined in the appended claims.
CLAIMS

What is claimed is:

1. An attachment assembly for releasably connecting an exercise accessory with an exercise device, the attachment assembly comprising:
   a support member having at least one first aperture;
   at least one boss connected with the accessory support member;
   a bracket having at least one hook adapted to engage the at least one boss and having at least one second aperture;
   a pin adapted to be inserted through the at least one first aperture and the at least one second aperture; and
   wherein the at least one second aperture in the mounting bracket is adapted to align with the at least one first aperture in the accessory support member when the at least one hook engages the at least one boss.

2. The attachment assembly of claim 1, further comprising an exercise device connected with the support member.

3. The attachment assembly of claim 2, wherein the exercise device comprises an exercise bench.

4. The attachment assembly of claim 1, further comprising an exercise accessory connected with the bracket.

5. The attachment assembly of claim 4, wherein the exercise accessory comprises a leg hold-down accessory.

6. The attachment assembly of claim 4, wherein the exercise accessory comprises a leg developer accessory.

7. The attachment assembly of claim 4, wherein the exercise accessory comprises a preacher curl accessory.

8. The attachment assembly of claim 4, wherein the exercise accessory comprises a first member coupled with the bracket.

9. The attachment assembly of claim 8, the exercise accessory further comprising:
   a support tube connected with the bracket; and
   wherein the support tube is adapted to receive a portion of the first member.

10. The attachment assembly of claim 9, the exercise accessory further comprising:
    a plurality of apertures on the first member; and
    a pop-pin connected with the support tube and adapted to selectively engage the plurality of apertures on the first member.

11. The attachment assembly of claim 1, wherein the bracket defines a U-shaped cross section having a first side and a second side connected with and separated by a base side.
12. The attachment assembly of claim 11, wherein the at least one hook comprises a first hook defined in the first side of the bracket and a second hook defined in the second side of the bracket.

13. An exercise device comprising:
   a frame;
   a user support coupled with the frame;
   a support member connected with the frame;
   at least one boss connected with the support member and having at least one first aperture;
   an exercise accessory;
   a bracket connected with the exercise accessory, the bracket having at least one hook adapted to engage the at least one boss and having at least one second aperture;
   a pin adapted to be inserted through the at least one first aperture and the at least one second aperture; and
   wherein the at least one second aperture in the mounting bracket is adapted to align with the at least one first aperture in the accessory support member when the at least one hook engages the at least one boss.

14. The exercise device of claim 13, wherein the exercise accessory comprises a leg hold-down accessory.

15. The exercise device of claim 13, wherein the exercise accessory comprises a leg developer accessory.

16. The exercise device of claim 13, wherein the exercise accessory comprises a preacher curl accessory.

17. The exercise device of claim 13, wherein the exercise accessory comprises a first member coupled with the bracket.

18. The exercise device of claim 17, wherein the exercise accessory further comprises a support tube connected with the bracket, and wherein the support tube is adapted to receive a portion of the first member.

19. The exercise device of claim 18, the exercise accessory further comprising:
   a plurality of apertures in the first member; and
   a pop-pin connected with the support tube and adapted to selectively engage the plurality of apertures on the first member.

20. The exercise device of claim 13, wherein the bracket defines a U-shaped cross section having a first side and a second side connected with and separated by a base side.

21. The exercise device of claim 20, wherein the at least one hook comprises a first hook defined in the first side of the bracket and a second hook defined in the second side of the bracket.

22. An exercise device comprising:
   a frame;
a user support coupled with the frame;

an accessory support member connected with the frame, the accessory support member having at least one aperture; and

at least one boss connected with the accessory support member.

23. The exercise device of claim 22, further comprising an exercise accessory adapted to releasably connect with the accessory support member.

24. The exercise device of claim 22, wherein the exercise accessory comprises a leg hold-down accessory.

25. The exercise device of claim 22, wherein the exercise accessory comprises a leg developer accessory.

26. The exercise device of claim 22, wherein the exercise accessory comprises a preacher curl accessory.

27. The exercise device of claim 22, wherein the exercise accessory comprises first member coupled with a bracket, and wherein the bracket defines at least one hook adapted to engage the at least one boss.

28. The exercise device of claim 27, wherein the exercise accessory further comprises a support tube connected with the bracket, the support tube adapted to receive a portion of the first member.

29. The exercise device of claim 28, the exercise accessory further comprising:

a plurality of apertures on the first member; and

a pop-pin connected with the support tube and adapted to selectively engage the plurality of apertures on the first member.

30. The exercise device of claim 22, wherein the exercise accessory comprises a bracket connected with a first member, and wherein the bracket includes at least one aperture.

31. The exercise device of claim 30, further comprising a pin adapted to be inserted through the at least one aperture in the bracket and the at least one aperture in the accessory support member.

32. The exercise device of claim 31, wherein the at least one aperture in the mounting bracket is adapted to align with the at least one aperture in the accessory support member when the at least one hook is engaged with the at least one boss.

33. The exercise device of claim 30, wherein the bracket defines a U-shaped cross section having a first side and a second side connected with and separated by a base side.

34. The exercise device of claim 33, wherein the at least one hook comprises a first hook defined in the first side of the bracket and a second hook defined in the second side of the bracket.

35. An exercise device comprising:

a frame;

a user support operably coupled with the frame;
an exercise accessory; and

a means for connecting the exercise accessory with the frame.

36. The exercise device of claim 35, further comprising a means for selectively adjusting the position of the exercise accessory relative to the frame.