HANDSTAND CAST TRAINER

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ABSTRACT

A cast trainer assembly (200) is adapted for use with a gymnastics apparatus (100). The cast trainer assembly (200) comprises a bar subassembly (202) coupled at opposing ends to a right-side brace subassembly (204) and a left-side brace sub-assembly (206). The subassemblies (204, 206) provide means for coupling the bar subassembly (202) to the gymnastic apparatus (100). The sub assemblies (204, 206) each include a side brace (208). The sub assemblies (204, 206) also each include slots or notches (220) spaced apart from each other. The slots or notches (220) are adapted to releasably receive the bar subassembly (202). The slots or notches (220) provide a configuration for positioning the subassembly (202) at a desired height and with distance being varied between the cross bar reference (126) and a bar (230).
HANDSTAND CAST TRAINER

CROSS-REFERENCE TO RELATED APPLICATIONS


STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT

[0002] Not applicable.

REFERENCE TO MICROFICHE APPENDIX

[0003] Not applicable.

BACKGROUND OF THE INVENTION

[0004] 1. Field of the Invention

[0005] The invention relates to apparatus for athletic training and play activities and, more particularly, to apparatus directed to gymnastics training and play activities.

[0006] 2. Background Art

[0007] Various types of gymnastics activities, whether involving competitive athletics or merely play, utilize apparatus having various types of bar configurations positioned above ground level. The athletic activities involving gymnastics bars are varied and can include relatively complex programs. One procedure common with gymnastics is the use of bars. The bars are the handstand as performed on a bar typically a substantial distance from the ground. A handstand procedure is often coupled with the athlete’s “casting” of his or her body from the handstand position to a ground mount or to another bar or set of bars.

[0008] A substantial difficulty arises with respect to the learning process for performing handstands and other procedures on gymnastics bars. That is, with the bar substantially above the ground, it is relatively common for a gymnast in training to be at least somewhat fearful. Also, when the gymnast is initially learning procedures such as handstands, castings and the like, the risk of injury can be substantially greater than that for the experienced gymnast. In this regard, it would be advantageous to provide for a training apparatus which allows the gymnast who is in an initial learning mode to have a training apparatus which reduces fears and the risks of potential injury when casting to a handstand. Still further, it would be advantageous to have a training device which not only allows training to occur in a way which initially reduces fears and risks associated with activities in a relatively high bar, but also to allow the training apparatus to be adjusted from what could be characterized as relatively “easy” to more “challenging” positions as the experience level of the gymnast progresses.

[0009] The general concept of a trainer for teaching actual handstands is disclosed in Martin, U.S. Pat. No. 3,879,033 issued Apr. 22, 1975. In the Martin patent, a device referred to as a handstand trainer 10 includes a base structure having front feet 12 and a rear transversely elongated plate 14. A pair of tubular members 16 are provided in spaced apart relationship and are welded to the feet 12 and plate 14. The tubular member 16 includes upstanding portions 18 extending upwardly and rearwardly. The upstanding portions 18 terminate in vertically disposed sleeves 20 which have rearwardly facing vertically disposed slots 22.

[0010] The trainer also includes a pair of cushions 24. Each cushion 24 includes an L-shaped plate 26 which carries an L-shaped cushion 28. A tube 30 is positioned in the sleeve 20, and a stem 32 connects the tube 30 to the vertical portion 34 of the L-shaped plate 26. The tube 30 includes a series of vertically spaced holes 36 which are adapted to align with an opening of the sleeve 20 for a locking pin 38 to extend through the locking pin 38 provides vertical adjustment for the cushioned supports 28. A gusset 40 reinforces the horizontal portion of the L-shaped plate 26 to the tube 30. Correspondingly, a gusset 42 reinforces the upstanding member portion 18 to the sleeve 20.

[0011] Spacing between the upstanding portions 18 can be accomplished through the use of telescopic portions 44 and 46 on the tubular portions 16 over the feet 12. Wing nuts 48 are provided for selectively locking the tubular telescopic portions 44, 46 in a desired position. The tubular members 16 are horizontally and adjustably spaced at the rear by one of the tubular members being positioned over transversely extending slots 50, with a pair of bolts 52 extending through the tubular member and being provided with a head 54 for maintaining the bolts 52 and slots 50, such that tubular members may be moved towards and away from the other tubular member. Locking is accomplished by a manually adjustable wing nut 56 on the top side of the tubular member 16.

[0012] An alternative embodiment of the base structure of the trainer includes upstanding posts on which cushioned shoulder guards or supports are carried through sleeves positioned on the upstanding members. Pins selectively lock the shoulder guards or supports in desired vertical positions by extending through aligned openings in the sleeves and upstanding members.

[0013] In use, the user of the trainer will position shoulders over the guards or supports in a spaced relationship, so as to correspond to a comfortable position such that the shoulder supports will engage the user under the shoulders, if the user loses balance or arm support.

[0014] The user’s hands can be placed on the plate 14 so that the hands balance and support the user above the shoulder supports. Guards stop the user from falling over or falling down if balance is lost. In addition, the height of the shoulder guards or supports can be selectively chosen to accommodate the user’s reach, so as to make it comfortable for the user to reach the base structure.

[0015] The trainer is disclosed as having a sufficiently large base so as to allow for extraordinary forces to be applied externally without causing the trainer to tip to the sides, backwards or forwards. Fabrication is disclosed as involving the tubular members 16 being bent intermediate their ends, so as to provide for a part of the base structure as well as the upstanding members supporting the shoulder rests 28. Although the Martin patent generally discloses the concept of a training apparatus and of handstand procedures, it is not directed to the use of gymnastics bars in any manner whatever. Further, the Martin patent is not directed to any type of apparatus which facilitates training with respect to gymnastic activities involving casting to handstands.

BRIEF DESCRIPTION OF THE DRAWINGS

[0016] The invention will now be described with reference to the drawings, in which:

[0017] FIG. 1 is a perspective view of a cast trainer assembly as connected to a gymnastics apparatus in accordance with the invention;
FIG. 2 is a right side perspective view of the gymnastics apparatus shown in FIG. 1, in the absence of the cast trainer assembly;

FIG. 3 is a left side perspective view of a standard base for the gymnastics apparatus;

FIG. 4 is a left-side perspective view of an extended base for the gymnastics;

FIG. 5 is a left-side perspective view similar to FIG. 4, but showing a plywood platform positioned on the base;

FIG. 6 is a right-side perspective view of the cast trainer assembly, similar to FIG. 1 but showing the use of the assembly by a gymnast;

FIG. 7 is a right-side perspective view of the cast trainer assembly, showing the gymnast in a handstand configuration on the assembly;

FIG. 8 is a right-side perspective view of the cast trainer assembly, and showing the gymnast in a position of initial dismount;

FIG. 9 is a right-side perspective view of the cast trainer assembly, in a position where it is adjacent to a dismount mat positioned at substantially the same vertical height as the cast trainer bar;

FIG. 10 is a right-side perspective view of the principal components of the cast trainer assembly, including a pair of brace subassemblies and a bar subassembly;

FIG. 11 is an exploded view of the cast trainer assembly shown in FIG. 10, showing components such as side braces, collars and end caps;

FIG. 12A is a front view of the left-side brace subassembly shown in FIG. 10;

FIG. 12B is a top view of the brace subassembly shown in FIG. 12A;

FIG. 13 is a side view of the brace subassembly shown in FIG. 12A;

FIG. 14 is a perspective view of the brace subassembly shown in FIG. 12A;

FIG. 15A is a front view of the right-side brace subassembly shown in FIG. 10;

FIG. 15B is a top view of the brace subassembly shown in FIG. 15A;

FIG. 16 is a side view of the brace subassembly shown in FIG. 15A;

FIG. 17 is a perspective view of the brace subassembly shown in FIG. 15A;

FIG. 18 is a front, elevation view of one of the base pieces of one of the collar bottoms shown in FIG. 11;

FIG. 19 is a top view of the collar bottom base piece shown in FIG. 18;

FIG. 20 is a side view of the collar bottom base piece shown in FIG. 18;

FIG. 21 is a perspective view of the collar bottom base piece shown in FIG. 18;

FIG. 22 is a front, elevation view of one of the collar bottom cap pieces shown in FIG. 11;

FIG. 23 is a top view of the collar bottom cap piece shown in FIG. 22;

FIG. 24 is a side view of the collar bottom cap piece shown in FIG. 22;

FIG. 25 is a perspective view of the collar bottom cap piece shown in FIG. 22;

FIG. 26 is a front, elevation view of one of the top collar base pieces shown in FIG. 11;

FIG. 27 is a plan view of the top collar base piece shown in FIG. 26;

FIG. 28 is a side view of the top collar base piece shown in FIG. 26;

FIG. 29 is a perspective view of the top collar base piece shown in FIG. 26;

FIG. 30 is a front, elevation view of one of the top collar cap pieces shown in FIG. 11;

FIG. 31 is a plan view of the top collar cap piece shown in FIG. 30;

FIG. 32 is a side view of the top collar cap piece shown in FIG. 30;

FIG. 33 is a perspective view of the top collar cap piece shown in FIG. 30;

FIG. 34 is an end view of one of the bar end caps shown in FIG. 11;

FIG. 35 is a side view of the bar end cap pieces shown in FIG. 34;

FIG. 36 is a further side view of the bar end cap piece shown in FIG. 34, with the orientation of FIG. 36 rotated 90° from the orientation of FIG. 35;

FIG. 37 is a side view of the bar shown in FIG. 11; and

FIG. 38 is a perspective view of the bar shown in FIG. 37.

DESCRIPTION OF THE PREFERRED EMBODIMENT

The principles of the invention are disclosed, by way of example, in a cast trainer assembly 200, as described herein and illustrated in FIGS. 1-38. The cast trainer assembly 200 is in the form of a frame and bar configuration which can attach to a gymnastics apparatus. The cast trainer assembly 200 develops the capability of casts to handstands. In accordance with certain aspects of the invention, the bar associated with the cast trainer has the capability of readily moving among a plurality of height settings. With the cast trainer assembly 200 attached to a gymnastics apparatus, athletes are able to teach themselves a cast to a handstand, without the fear of compromising their performance or risking injury by attempting it on a higher bar. Further, the station is capable of maintaining a relatively minimal footprint, since extensions are unnecessary for purposes of stability with the cast trainer 200. Still further, and as apparent from its construction as described herein, the cast trainer 200 can be used in other ways so as to develop additional gymnastics skills beyond casting. Further, the cast trainer 200 in accordance with the invention provides a pleasant play and learning apparatus for users of various ages.

For purposes of a complete description of the cast trainer 200, the trainer 200 will first be described with respect to the casting of a gymnastics apparatus, identified as gymnastics apparatus 100 in the drawings. The gymnastics apparatus 100 is primarily shown in FIGS. 1-9. Although the gymnastics apparatus 100 is being described with use of the cast trainer 200, it should be emphasized that the cast trainer 200 and other embodiments of the cast trainer in accordance with the invention can be utilized with gymnastics apparatus having other than the specific structure, form and function described herein with respect to the gymnastics apparatus 100. That is, the cast trainer 200 and other embodiments of cast trainers in accordance with the invention can be utilized with various types of gymnastics apparatus, without departing from the broad scope of the invention.

Turning specifically to FIGS. 1-9, the gymnastics apparatus 100 is shown in combination with the cast trainer 200 in FIGS. 1 and 6-9. The gymnastics apparatus 100 com-
prises a supporting assembly 102 which provides the principal support for the gymnast and components associated with the specific gymnastic functions to be performed. The supporting assembly 102 includes what can be characterized as a standard base 104 as shown in FIG. 3. With the standard base 104, a pair of spaced apart longitudinal side bars 106 extend longitudinally in a parallel configuration on the outer portions of the supporting assembly 102. The longitudinal side bars are shown in several of the drawings, including FIG. 3. The longitudinal side bars 106 are part of what can be characterized as a standard base 104 as also shown in FIG. 3. However, the longitudinal side bars 106 can also be utilized in an extended base, such as the extended base 108 shown in FIG. 4. The extended base 108 may be relatively more suitable for gymnasts performing relatively complex maneuvers. With the extended base 108 shown in FIG. 4, a pair of extended longitudinal side bars 110 can be utilized. Again, these longitudinal side bars 110 are positioned on the lateral outer sides of the supporting assembly 102 and run parallel to each other.

[0060] The supporting assembly 102 further comprises a center base cross support 112. The center base cross support 112 is shown in FIGS. 3 and 4, and is positioned so as to extend between side bars 106 or the side bars 110. The cross support 112 is also centered between opposing ends of the supporting assembly 102. In addition to the center base cross support 112, the supporting assembly 102 also includes sets of base lateral cross supports 114. With the standard base 104 shown in FIG. 3, a pair of base lateral cross supports 114 are utilized. With the extended base 108 shown in FIG. 4, a set of four base lateral cross supports 114 are utilized. The base lateral cross supports 114 are spaced apart and parallel to each other and to the center base cross support 112. The base lateral cross supports 114 extend between the side bars 106 or 110, and can be coupled thereto in any suitable manner so as to provide rigidity.

[0061] In addition to the foregoing components, the supporting assembly 102 further includes a pair of opposing tube support braces 116. The tube support braces 116 are illustrated in FIGS. 1-8. The braces 116 are integral with or otherwise rigidly secured to each of the side bars 106 or side bars 110 at a central position along the longitudinal axes thereof. Integral with or otherwise secured to the upper portion of the tube support braces 116 are a pair of tube supports 118. The tube supports 118 are also illustrated in FIGS. 1-8.

[0062] The tube supports 118 each extend vertically upward and are substantially hollow therein. The tube supports include apertures positioned at an appropriate vertical location on each tube support 118, and locking bolt assemblies 120 can extend through the apertures. As shown in FIGS. 1 and 2, a pair of angled support tubes 122 can be positioned above and received within each of the tube supports 118. The angled support tubes 122 have one end received within a corresponding one of the tube supports 118, while the other end extends horizontally and is positioned so as to directly face the corresponding end of the other angle support tube 122. Positioned through the angled support tubes 122 are sets of apertures 124 (partially shown in FIG. 2). The apertures can be utilized in combination with the locking bolt assemblies 120 so as to position and lock the angled support tubes 122 at a desired vertical height relative to the tube supports 118. Such locking configurations to provide adjustability of the angled support tubes 122 are conventional in the art.

[0063] Positioned and received within the open opposing ends of the angle support tubes 122 is a main cross bar 126. The main cross bar 126 is utilized directly by the gymnasts during performance of various gymnastic maneuvers. If desired, a pad or similar type of device can be utilized with the cross bar 126 for purposes of providing more comfortable and secure gripping by a gymnast.

[0064] In addition to the foregoing components, the gymnastic apparatus 100 can also utilize a plywood or similar platform 128, as shown in FIG. 5. Such a platform 128 provides for additional stability of the apparatus 100. In addition to the platform 128, the apparatus 100 can include a pair of center mats 130. Such center mats are shown in FIGS. 1 and 2. Also shown in FIGS. 1 and 2 are a pair of outer lateral mats 132, which can be utilized with the extended base 108 as shown in FIG. 4. For purposes of further cushioning, the gymnastics apparatus 100 can also include a pair of upper pads 134, such as the pads shown in FIG. 2. Still further, a mattress pad 136 which is preferably movable can be positioned as desired on the apparatus 100. The mattress pad 136 is shown in FIG. 1.

[0065] The principal components of the cast trainer assembly 200 in accordance with the invention will now be described primarily with respect to FIGS. 10-38. With reference first to FIG. 10, the cast trainer assembly 200 comprises a bar subassembly 202. The bar subassembly 202 is coupled at opposing ends to a right-side brace subassembly 204 and a left-side brace subassembly 206. The subassemblies 204, 206 provide means for coupling the bar subassembly 202 to the gymnastic apparatus 100.

[0066] Turning specifically to FIG. 11, the right-side brace subassembly 204 and the left-side brace subassembly 206 each include a side brace 208 having the shape and configuration shown in FIG. 11 and in FIGS. 12A-17. In addition to side braces 208, positioned at the top of each of the side braces 208 is a collar top base 210. The collar top base 210 operates in cooperation with the collar top caps 212 also shown in FIG. 11. The collar tops 210, 212 operate so as to be received around and secured to the angled support tubes 122. The cap screws 222 and washers 224 are utilized to secure the collar top bases 210 to the collar top caps 212. Correspondingly, the subassemblies 204, 206 include collar bottom bases 214 and collar bottom caps 216. The collar bottom components 214, 216 are utilized to secure the subassemblies 204, 206 to the upstanding tube supports 118, as shown, for example, in FIG. 1. The collar bottom bases 214 are secured to the collar bottom caps 216 through the use of the cap screws 222 and washers 224. In addition, set screws 226 are utilized with the collar top bases 210 and collar top caps 212. Details regarding the collar bottom bases 214 are shown in FIGS. 18-21. Correspondingly, details showing the collar bottom caps 216 are shown in FIGS. 22-25. Details regarding the collar top bases 210 are shown in FIGS. 26-29, while details associated with the collar top caps 212 are shown in FIGS. 30-33.

[0067] The bar subassembly 202 includes a bar 230 with bar end caps 218. The bar end caps 218 are secured on opposing ends of the bar 230, and can be secured by means of pins or the like. In addition to the bar 230 and the end caps 218, the bar subassembly 202 also includes a pair of opposing knobs 228 with the knobs 228 having threaded studs which are received through the end caps 218.

[0068] Turning again to the brace subassemblies 204 and 206, it should be noted that each of the subassemblies includes a brace section 232 having a set of four slots or
notches 220 spaced apart from each other. The slots or notches 220 are adapted to releasably receive the bar subassembly 202. The bar subassembly 202 can be releasably secured at a desired height through selection of a desired pair of slots or notches 220, and then use of the knobs 228 having the threaded studs and the end caps 218 to secure the bar 230 at the desired height.

[0069] As earlier described with respect to the brief description of the drawings, FIGS. 12A-38 illustrate details associated with the bar subassembly 202, right-side brace subassembly 204 and left-side brace subassembly 206.

[0070] The structural configuration of the cast trainer assembly 200 relative to the gymnastics apparatus 100 will now be described with respect to the drawings. As shown in particularly in FIGS. 1 and 6-9, the cast trainer assembly 200 can be secured in a releasable manner to the gymnastics apparatus 100 through the collar top and collar bottom configurations. The bar subassembly 202 can then be positioned at a desired height through the use of a selected pair of the slots or notches 220. Also, as apparent from the drawings, the bar assembly 202 not only be positioned at a desired height, but variations will also occur with respect to the distance between the cross bar 126 and the bar 230. That is, as apparent from FIG. 1, as the bar 230 is positioned within a lower pair of slots or notches 220, the bar 230 will also move away from the cross bar 126 at a greater and greater distance. The greater the distance of the bar 230 from the cross bar 126, the easier thegymnast will be able to cast to a handstand. Also, the casting will occur at a lower height, as the bar 230 is moved downwardly and away from the cross bar 126. Correspondingly, when the bar 230 is moved closer to the cross bar 126 and relatively higher and at greater distance from ground level, the more difficult will be the casting maneuver. Accordingly, the cast trainer assembly in accordance with the invention provides for the capability of multiple levels of training difficulty without having to have totally separate and independent training assemblies. Further, the cast trainer assembly in accordance with the invention is relatively easy to adjust from one training position to another.

[0071] As earlier described, FIG. 6 illustrates the position of a gymnast on the cast trainer assembly as a gymnast moving to a handstand. FIG. 7 illustrates the gymnast in a vertical handstand. FIG. 8 illustrates the gymnast in an initial position for a dismount from the handstand. FIG. 9 illustrates the gymnast in a training position where the bar 230 is positioned at its farthest location relative to the cross bar 126. Also, FIG. 9 illustrates a dismount mat positioned at substantially the same vertical height as the cast trainer bar 230.

[0072] In addition to the foregoing, and as earlier described, the cast trainer assembly 200 in accordance with the invention provides a relative easy to use and adjustable learning station for permitting gymnasts to develop casting to handstands. Settings for the bar 230 are easy to change, and readily change from low to high heights and with respect to the distance away from the cross bar 126. The cast trainer assembly in accordance with the invention alleviates fears or risks of attempting to perform the casting maneuver on a high bar. Also, the cast trainer assembly takes up a relatively small footprint, since extensions are not required for stability with the cast trainer. In addition, the cast trainer can be utilized in a number of different ways for many skills beyond casting. Also, young gymnasts can find delight in playing and learning with the cast trainer assembly.

[0073] It will be apparent to those skilled in the pertinent arts that other embodiments of cast trainer apparatus in accordance with the invention can be designed. That is the principles of a cast trainer apparatus in accordance with the invention are not limited to the specific embodiment described herein. Accordingly, it will be apparent to those skilled in the art that modifications and other variations of the above-described illustrative embodiment of the invention may be effected without departing from the spirit and scope of the novel concepts of the invention.

1. A cast trainer assembly adapted for use with a gymnastics apparatus for training of gymnasts with respect to casting to handstand positions, said cast trainer assembly comprises: a bar subassembly; a right-side brace subassembly; a left-side brace subassembly; and said brace subassemblies are adapted to be coupled to said gymnastics apparatus and include means for positioning said bar subassembly at a plurality of selectable distances from a ground level, and also to selectively adjust the distance of said bar subassembly from a cross bar of said gymnastics assembly.

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