A space frame apparatus for lifting plates of various weights and sizes is disclosed. This invention allows for weights to be quickly loaded and unloaded and secured to the apparatus.
SPACE FRAME APPARATUS FOR LIFTING PLATES OF VARIOUS WEIGHTS AND SIZES IN FITNESS APPLICATIONS

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application claims the benefit of U.S. Provisional Application No. 61/908,570, filed November 25, 2013.

STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT: Not Applicable

REFERENCE TO SEQUENCE LISTING, A TABLE, OR A COMPUTER PROGRAM LISTING COMPACT DISK APPENDIX: Not Applicable

BACKGROUND OF THE INVENTION

[0002] In the fitness industry, a beer keg (hereinafter a “Keg” or a plurality of “Kegs”) is often used as a weightlifting object for improving physical strength. Kegs are difficult to obtain, fill and maintain. Kegs must be filled with liquid; and may be filled or emptied a limited number of times. This makes it difficult and expensive for lifters to work out with varying weights. Also movement of the liquid inside the keg can be potentially dangerous and may cause injury.

[0003] Kegs cannot be filled easily and the shifting liquid inside can be dangerous for users. Moreover, no current lifting apparatuses used in fitness applications simulate a beer keg.

[0004] Moreover, kegs are not manufactured for use in the fitness industry and are expensive. For uses in fitness applications, multiple kegs are needed if varying weights are desired.

SUMMARY

[0005] The preferred embodiment of the invention allows for weights to be quickly loaded, unloaded and secured to the apparatus comprising the preferred embodiment of the invention. Several users at various levels in their fitness abilities and training status can safely and easily utilize the apparatus comprising the preferred embodiment of the invention with by applying different combinations of sizes and quantities of weighted plates.

BRIEF DESCRIPTION OF THE FIGURES

[0006] FIG. 1. A view of the completed keg-like fitness apparatus comprising preferred embodiment of the invention.

[0007] FIG. 2 A cross-section view of a brace piece, an end piece and the three middle pieces utilized in the preferred embodiment of the invention.

[0008] FIG. 3 A cross-section view of a brace piece and a load piece utilized in the preferred embodiment of the invention.

BRIEF DESCRIPTION OF THE NUMERICAL REFERENCES IN THE FIGURES

[0009] 1. End Piece 1

[0010] 2. End Piece 2

[0011] 3. Cross Piece 1

[0012] 4. Cross Piece 2

[0013] 5. Cross Piece 3


[0015] 7. Brace Piece 2

[0016] 8. Load Piece 1

[0017] 9. Middle Piece 1

[0018] 10. Middle Piece 2

[0019] 11. Middle Piece 3

DETAILED DESCRIPTION OF THE INVENTION

[0020] The preferred embodiment of the invention addresses a need in the fitness industry, whereby a beer keg is often used as a weightlifting object for improving physical strength. The preferred embodiment of the invention as described herein addresses problems associated with the cost and difficulty associated with utilizing Kegs in fitness applications. In the preferred embodiment, the combined apparatus appears in a vaguely cylindrical form, bearing a loose resemblance to a keg. As a result, the preferred embodiment of the invention features dimensions similar to that of a keg, enabling a user of the preferred embodiment to perform many exercises similar those performed by use of an actual keg.

[0021] The preferred embodiment of invention simulates the shape and mobility of a beer keg as used in fitness applications. The configuration of the associated apparatuses, however, allow for weighted plates to be loaded and unloaded quickly and easily, which improves usability. The term “plates” as used herein refer to weighted apparatuses generally as typically utilized with bar bell weightlifting apparatuses or other fitness equipment. In the preferred embodiment of the invention, plates can be secured to the invention for increased safety.

[0022] Moreover, a primary objective of the preferred embodiment of the invention is to reduce cost as compared to the adaptation and use of an actual beer keg. The total cost of purchasing and maintaining the preferred embodiment of invention is less than, and the expected life-span is greater than, the utilization of a beer keg. Unlike a beer keg used in association with the preferred fitness application of the invention, which requires refilling and emptying a beer keg with liquid, the preferred embodiment of the invention does not require refilling with liquid or therefore experience the wear and tear nor liquid shifting with the use of actual beer kegs.

[0023] In the preferred embodiment of the invention as demonstrated by FIG. 1, all of the components of the preferred embodiment are interconnected and move as one unit. Weighted plates are loaded and secured to the load piece. In an embodiment of the invention, the load plate incorporates a thread that a washer can be screwed on to secure the plates to the load piece. In alternative embodiments, a tension clip may be placed over the plates and over the load pieces to secure the plates on to the load piece. It will be appreciated by one skilled in the art that the plates may be placed upon and removed from the main body of the preferred embodiment of the invention to enable the user to lift and perform exercises with one cohesive unit comprising the preferred embodiment of the invention. In the preferred embodiment, the apparatus is supported by connected combinations of the end pieces, cross pieces and middle pieces.

[0024] In association with the exercises associated with the preferred methods of use, the entire apparatus comprising the preferred embodiment of the invention is lifted as one singular unit. Prior to performing exercises with the combined unit in the preferred embodiment of the invention, a person loads and secures weighted plates on load piece; similar to how a person skilled in the art would load plates in association with
a barbell. To perform exercises, person grasps the apparatus in various locations and lifts it, to demonstrate or increase physical strength, for sport or exercise.

In the preferred embodiment, users of the associated apparatuses grip cylindrical tubing that comprises the body of the invention. An alternative embodiment of the invention, unlike a leg known in the prior art, may incorporate gripping mechanisms intended specifically to facilitate fitness activities including but not limited to handles or shaped grip features to enable users to lift associated apparatuses safely and efficiently. The preferred embodiment of the invention incorporates features to allow a user to efficiently load, unload and secure plates to the primary body. Therefore, several users at varying stages in their fitness strategies may customize and effectively utilize the preferred embodiment of the invention with different applied weights safely and easily.

The preferred embodiment of the invention incorporates two end pieces, three cross pieces, two brace pieces, a load piece and three middle pieces. The two end pieces comprise a circular shape. The three cross pieces comprise linear bars, each distal end of the bar attaching to the two end pieces. The connection points of the three linear bars to each end piece is roughly equidistant from the other connection points in the preferred embodiment. The two brace pieces are substantially solid, providing stability for the entire apparatus. Each of the two brace pieces are substantially triangular in appearance, whereby each of the three points of each brace piece connects to each cross piece at the point of the cross pieces near the point on the bar that is the halfway point between the two end pieces. The load piece traverses both brace pieces near the center point of each brace piece and is held in place by each brace piece.

It will be appreciated by one skilled in the art, that the connection between the parts are accomplished by known procedures associated with connecting high strength metals. In the preferred embodiment, the connections between each component are made by welds. However, in alternative embodiments of the invention, the connection between the components may be made by glue, screws, bolts and washers, or other means.

Making Reference to Numerical References in Fig. 1, the connection points between the items are as follows.

Item 1 is connected to Items 3, 4, 5.
Item 2 is connected to Items 3, 4, 5.
Item 3 is connected to Items 1, 2, 6, 7, 9, 11.
Item 4 is connected to Items 1, 2, 6, 7, 9, 10.
Item 5 is connected to Items 1, 2, 6, 7, 10, 11.
Item 6 is connected to Items 3, 4, 5, 8.
Item 7 is connected to Items 3, 4, 5, 8.
Item 8 is connected to Items 6, 7.

Items may be connected at various angles.

The best mode of producing the preferred embodiment of the invention known to the inventor is as follows. First, cylindrical tubing, which in the preferred embodiment is a metal, but may be comprised of other materials in other embodiments, and flat plates are procured. The cylindrical tubing material is cut into the proper dimensions to generally resemble the shape and size of a beer keg known in the prior art. More specifically, in the preferred embodiment of the invention, the tubing is formed using manufacturing processes known to those skilled in the art into circular end pieces (items 1 and 2). Plates are then formed using manufacturing processes known to those skilled in the art into braces (items 6 and 7) and middle pieces (items 9, 10 and 11).

In the preferred embodiment of the invention, the braces are formed into a substantially triangular form.

All pieces are assembled and fastened together by welding in the preferred embodiment of the invention, or mechanical fasteners or other fastening means in alternative embodiments of the invention. The middle pieces (items 9, 10, and 11) generally comprise an ornamental feature in the preferred embodiment, and therefore are optional with regard to the construction of the preferred embodiment of the invention. However, in alternative embodiments of the invention, the middle pieces (items 9, 10, and 11) may be constructed of a flat plate to enable a greater available surface area of the embodiment of the invention to come in contact with the user’s body thereby distributing weight, providing additional support and relieving focused pressure points during lifting activities.

In the preferred embodiment of the invention, grasping mechanisms are attached to the apparatuses associated with the invention to enable a user to grasp the invention at differing angles when grasping mechanisms are affixed to the preferred embodiment of the invention at different locations. Said grasping mechanisms may be affixed to components of the invention, and in the preferred embodiment may comprise rubber shaped to the contour of a user’s hands to enable easier, more comfortable gripping of the entire apparatus comprising the preferred embodiment of the invention. The grasping mechanisms may in alternative embodiments be composed of foam or other materials. The inventor has recognized that additional grasping components may be connected to any structural component of the invention in any configuration to increase the quantity of locations for a user to grasp the apparatus and thereby more effectively perform exercises. In varying embodiments of the invention, padding may be added to the components of the invention to enable a user to more comfortably grasp and support the invention on various parts of the user’s body, including but not limited to the thigh and chest, during fitness activities.

The preferred method of use of the preferred embodiment of the invention involves the user picking up the entire apparatus, support the entire apparatus on the user’s thigh or another part of the body, then perform a “clean” exercise, as the term “clean” is known by those skilled in the art. In varying methods of usage other varying exercises may be performed, including exercises associated with Crossfit® programs.

In the foregoing specification, specific embodiments have been described. However, one of ordinary skill in the art appreciates that various modifications and changes can be made without departing from the scope of the invention as set forth in the claims below. Accordingly, the specification and figures are to be regarded in an illustrative rather than a restrictive sense, and all such modifications are intended to be included within the scope of present teachings. The descriptive labels associated with the numerical references in the figures are intended to merely illustrate embodiments of the invention, and are in no way intended to limit the invention to the scope of the descriptive labels.

The benefits, advantages, solutions to problems, and any element(s) that may cause any benefit, advantage, or solution to occur or become more pronounced are not to be construed as a critical, required, or essential features or elements of any or all the claims. The invention is defined solely
by the appended claims including any amendments made during the pendency of this application and all equivalents of those claims as issued.

Moreover in this document, relational terms such as first and second, top and bottom, and the like may be used solely to distinguish one entity or action from another entity or action without necessarily requiring or implying any actual such relationship or order between such entities or actions. The terms “comprises,” “comprising,” “has,” “having,” “includes,” “including,” “contains,” “containing” or any other variation thereof, are intended to cover a non-exclusive inclusion, such that a process, method, article, or apparatus that comprises, has, includes, contains a list of elements does not include only those elements but may include other elements not expressly listed or inherent to such process, method, article, or apparatus. An element proceeded by “comprises . . . a,” “has . . . a,” “includes . . . a,” “contains . . . a” does not, without more constraints, preclude the existence of additional identical elements in the process, method, article, or apparatus that comprises, has, includes, contains the element. The terms “a” and “an” are defined as one or more unless explicitly stated otherwise herein. The terms “substantially”, “essentially”, “approximately”, “about” or any other version thereof, are defined as being close to as understood by one of ordinary skill in the art, and in one non-limiting embodiment the term is defined to be within 10%, in another embodiment within 5%, in another embodiment within 1% and in another embodiment within 0.5%. The terms “coupled” and “linked” as used herein is defined as connected, although not necessarily directly and not necessarily mechanically. A device or structure that is “configured” in a certain way is configured in at least that way, but may also be configured in ways that are not listed. Also, the sequence of steps in a flow diagram or elements in the claims, even when preceded by a letter does not imply or require that sequence.

1. An apparatus comprising a substantially cylindrical structure with support means to accommodate plates.
2. A fitness apparatus, comprising:
   a cylindrical structure comprising two circular end pieces and three linear cross pieces;
   said three linear cross pieces connected by two brace pieces;
   said two brace pieces attached to a load piece; and
   three middle pieces.
3. The fitness apparatus of claim 2, said load piece and said brace pieces configured to support heavy weight.
4. The fitness apparatus of claim 2, said load piece and said brace pieces configured to securely hold plates over said load piece.
5. The fitness apparatus of claim 2, said load piece and said brace pieces configured to securely hold plates over said load piece by means of a clip placed over said plates and said load piece.
6. The fitness apparatus of claim 2, said load piece and said brace pieces configured to securely hold plates over said load piece by means of a screw washer placed over said plates and said load piece.
7. The fitness apparatus of claim 2, further comprising a plurality of grasping mechanisms.
8. The fitness apparatus of claim 2, further comprising padding.

* * * * *