A new weight-training device for the arm involves an arm-straightening feature. The device comprises a weight at the distal end and one or more elongated members extending from the hand to the mid-shoulder of the user. The device further comprises a ring at the proximal end to encircle the user’s arm, a grip bar for the user's hand and a wrist-protecting bar. The elongated members and the proximal ring ensure that the user’s arm remains straight during the weight-lifting exercise thus fully targeting various muscle groups. Various exercises with the device are also suggested.
WEIGHT LIFTING EXERCISE DEVICES WITH ARM STRAIGHTENING FEATURE: ZAR-BAR AND ZAR-BELL

CLAIM OF PRIORITY

[0001] This application is a continuation-in-part of a co-pending application Ser. No. 11/467,630 filed on Aug. 28, 2006.

BACKGROUND OF THE INVENTION

[0002] Weight lifting has been a popular exercise at least since the times of Ancient Greece. Modern exercise devices have grown increasingly complex. However, the free weights, such as dumbbells, have not lost their appeal since they were first described by a Greek physician Galen in the second century C.E. Free weights have many advantages over stationary exercise machines; they are portable and easy to store. Furthermore, nearly everyone can learn to use the free weights without special training or supervision. Although some free weights have a predetermined weight, others have an option to vary the weight. For example, many dumbbells can accommodate several weight disks.

[0003] Nevertheless, exercising with free weights has some drawbacks. One such drawback is that a user can “cheat” by assuming an improper posture or performing an incorrect movement. For example, while curling a forearm, the user may “help” himself by engaging the muscles in his legs and back. Such cheating reduces the work done by the target muscle, the biceps, and at least partially defeats the purpose of the exercise. Similarly, by lifting an arm sideways (in order to train the shoulder muscles) one may bend the arm and recruit additional muscles. The target muscles, once given, will do less work. By comparison, the stationary weight lifting machines are better able to address this problem. Often the user must assume a certain fixed position in the seat of the stationary machine. Such a position usually assures a correct posture and isolation of the target muscle groups.

[0004] The prior art offers several ways of isolating the target muscles. For example, U.S. Pat. Nos. 4,799,675 and 6,616,581 describe restraining belts that hold the user’s arms in the correct position relative to the body during exercise with dumbbells or barbells. Another solution is to attach a bracket to a conventional dumbbell or barbell. As taught for example, by U.S. Pat. No. 4,345,756, when the user grips the bracket, it becomes impossible to bend the wrist while lifting the weight. Similarly, U.S. Pat. No. 6,572,515 teaches a bracket through which an arm must pass. The user is grabbing the barbell while the bracket has a crossbar that prevents bending of the arm at the wrist. Finally, a bracket disclosed in the U.S. Pat. No. 6,340,341 locks the arm in an L-shaped position for the proper exercise of the pectoral muscles.

[0005] Another drawback of using the free weights is the risk to the user’s joints. Inexperienced, unfit or overly ambitious users often attempt lifting weights that are excessive for their level of fitness. When a muscle cannot properly handle such a weight, an injury to the joint may occur. The risk of an injury is even greater when the user’s movement is improper. For example, inexperienced users often flex their wrists when doing bicep curls. This creates a risk of injury to the wrist joint. The devices protecting the wrist joint are known in the art. These devices mainly ensure that the wrist remains straight. For example, U.S. Pat. Nos. 2,819,081, 4,858,916 and 6,001,049 describe plates to which the fore-arm must be strapped. Not less cumbersome is a laced-up sleeve disclosed in the U.S. Pat. No. 4,484,740. The easiest to use are the devices that offer a frame. As taught by the U.S. Pat. Nos. 2,617,650 and 4,109,908, the forearm is placed between the two parallel side bars connected by two cross bars. When the user is passing the forearm between the cross bars, the frame locks the wrist in a straight position because the side bars cannot be bent. Similarly, U.S. Pat. No. 4,231,569 discloses the device with planar arm supports. As the user holds onto the bar of the dumbbell-like device, the arm supports become flush with the wrist and prevent bending.

[0006] These prior art devices are limited to protecting the wrist. No device currently in use protects either the elbow or the shoulder of the user in a similar way.

[0007] Accordingly, it would be advantageous to have a free weight exercise device that would borrow some advantages from a stationary device. Specifically, it would be advantageous to have a free exercise device capable of isolating the target muscles and ensuring a correct posture. Additionally, it would be advantageous to have a free weight exercise device that offers protection to all the joints of the user challenged by arm exercises, such as wrist, elbow and shoulder. Finally, it would be advantageous to have an exercise device with the above-mentioned features that is also comfortable and easy to use.

[0008] Many exercise devices are equally popular among men and women. Others are preferred by a particular gender because they help build up a particular group of muscles. For example, bench press with a bar is often preferred by men, while women prefer a seated chest press. Similarly, women are generally less interested in building up the upper shoulder muscles, such as deltoids. Instead, women aim to build up arm muscles, such as biceps and triceps. It would be advantageous to have an embodiment of the device targeted to the arm muscles.

SUMMARY OF THE INVENTION

[0009] The object of the present invention is to provide a weight lifting device that minimizes the engagement of the secondary muscles of the arm by virtue of an arm-straightening feature. It is another object of the invention to provide protection to the wrist and elbow joints of the user. It is a further object of the invention to allow for the use of variable weights on the same device. It is yet another object of the present invention to provide a device that is comfortable and easy to use without special training or supervision. In accordance with these objectives the device includes the arm-straightening frame with means for attaching variable weights at the distal end.

[0010] The device is sized to fit an arm of average adult, but will perform equally well with the users of different sizes.

BRIEF DESCRIPTION OF THE DRAWINGS

[0011] FIG. 1 is a side view of the device of the first preferred embodiment with the weight attached.

[0012] FIG. 2 is a side view of the device of the first preferred embodiment with the weight removed.

[0013] FIG. 3 is a view of the weight assembly means.
FIG. 4 is a view of the user's arm engaging the device of the first preferred embodiment.

FIG. 5 is a view of the user holding the device of the first preferred embodiment.

FIGS. 6 A-F show various exercises that can be done using the device of the first preferred embodiment.

FIG. 7 is a view of the second preferred embodiment.

FIGS. 8 A-B show various exercises that can be done using the device of the second preferred embodiment.

DETAILED DESCRIPTION OF THE INVENTION

The invention provides a free weight device that can easily be used by experienced weightlifters and novices alike. As shown on FIG. 1, the exercise device (1) involves a weight (2) attached to the end of a straightening feature. For convenience the end of the device closest to the user's body is termed "proximal" and the end farthest away from the body is called "distal". Thus the weight is attached to the distal end. The straightening feature in turn comprises two long members (3) connected by a ring (4) at the proximal end. The device further provides a grip bar (5) to be held by the user's hand. An additional ring or arc (6) may be provided proximally to the grip bar. The position of the ring or arc is such that it protects the wrist joint of the user during exercise as will be further explained below. The weight (2) rests on a post (7). On the proximal side the weight abuts a stopper-ring (8). On the proximal side the weight is held in place by a holding ring (9).

FIG. 2 shows the disassembled device with the weight (2) shown separately. For example, the weight can be a traditional removable disk having an aperture (21) as is commonly used with dumbbells. However, the weight can have any other shape and form that is convenient to use and aesthetically pleasing. For individual users it would be especially advantageous to have removable weights. A user can purchase a single device and a set of different weights so that the level of exercise could be varied. The removable weight can be attached by any of the suitable means. For example, the weight can be held in place by a holding ring (9). As shown in more detail on FIG. 3, the holding ring (9) has an aperture (91) through which the post (7) passes. The holding ring is secured on the post via a screw (92) that passes through the hole (95). The screw can be tightened using a post (93) that passes through the hole (96) in the head of the screw. The weight may also be screwed on via threads provided on the weight (2) and the post (7) or secured by any other suitable means. Alternatively, the weight (2) can be permanently secured to the device. For example, commercial gyms may offer a set of such devices each with a different weight. The user would not need to spend time replacing the weight, but would merely select from the set the device with desired weight.

FIG. 4 shows the position of a user's arm engaging the device. The user passes the arm through the shoulder ring (4) and grips the grip bar (5). The wrist protector (6) prevents the wrist from bending. Similarly, the ring (4) prevents the arm from bending at the elbow. The side bars (3) are designed to be of such length that the ring (4) is between the shoulder and the elbow joints of the user. The positioning of the ring (4) anywhere within this range ensures that the arm would not bend at the elbow. As long as the above condition is met, the device will function with users of different sizes.

FIG. 5 shows a user holding the device. The shape of the device and the position of the grip bar make the device easy to understand. Even a novice user will recognize to pass the arm through the ring (4) grip the grip bar (5). In this example the user lifts the device to the side of the body. The device is used as a free weight that allows one to exercise anywhere without the need of the special equipment or trainers.

FIGS. 6 A-F show various exercises that can be performed using the device. Notably, the figures show a user with only one device. It is also possible to perform each exercise with two devices simultaneously. In each exercise the device keeps the user's arm straight. FIG. 6A shows a lateral raise, where the arm is lifted to the side of the body. Keeping the arm straight during this exercise allows maximum engagement of the deltoid muscles. FIG. 6B shows a front raise, where the arm is lifted to the front of the body. Keeping the arm straight during this exercise allows maximum engagement of the front deltoid and pectoral muscles. FIG. 6C shows a rear deltoid fly, where the body is bent at the hip and the arm is lifted behind the body. Keeping the arm straight during this exercise allows maximum engagement of the rear deltoid muscles. FIG. 6D shows an overhead tricep curl. This exercise is performed lying on one's back by lifting the arm overhead. Keeping the arm straight during this exercise allows maximum engagement of the triceps and abdominal muscles including the oblique muscles. FIG. 6E shows a pectoral fly. This exercise is also performed lying down by lifting the arm in front of the body and lowering it down to the side. Keeping the arm straight during this exercise allows maximum engagement of the pectoral muscles. FIG. 6F shows a straight-arm circular fly, where the arm is held to the side of the body and rotated around the shoulder joint. Keeping the arm straight during this exercise allows maximum engagement of the deltoid muscles.

FIG. 7 shows the second preferred embodiment of the device. This version is shorter but still includes the main features of the invention: the long side-bars (3), the wrist shield (6) and the hand grip (5). However, the ring (10) is closer to the distal end of the device. Most critically, the ring is placed below the elbow. As in the first preferred embodiment, the weight (2) rests on a post (7) at the end of the device. On the proximal side the weight abuts a stopper-ring (8). On the distal side the weight is held in place by a holding ring (9).

FIG. 8A shows a bicep curl performed with the second preferred embodiment of the device. The ring (10) is below the wrist allowing the elbow (11) to bend. The side bars (3) prevent the wrist from bending. The wrist shield (6) also protects the wrist of the user. FIG. 8B shows a tricep extension performed with the second preferred embodiment of the device. The side-bars (3) and the wrist shield (6) ensure that the user does not instinctively bend the wrist during the flexion of the arm. As FIGS. 8A and 8B illustrate, the second preferred embodiment is capable of exercising the arm muscles, such as biceps and triceps.

As is demonstrated above, during each exercise the user's arm (with the first preferred embodiment) or forearm (with the second preferred embodiment) remains straight. This ensures that the primary target muscles get the maxi-
mum workout. In addition, as a result of the proper form, the target muscles get a maximum stretch. This ensures that the muscle can become longer and develop a greater strength thus reducing the chance of injury. Furthermore, a longer muscle is a part of the overall leaner (as opposed to bulkier) physique often desired by female exercisers. Finally, keeping the arm straight efficiently redistributes the weight among the muscles of each target group. Thus, some muscles traditionally only minimally involved in a workout, get the full benefit of the weight-bearing exercise as well as the stretch.

0027 An additional advantage of the invention is its safety. Traditional dumbbells often cause injuries when they are dropped. The injuries usually result from one of the two events. First, a user may accidentally release his grip and be hit by the falling dumbbell. Second, a dropped dumbbell may roll on the floor and hit a person. Both types of accidents can be avoided by the use of the device of the present invention. First, if the user accidentally releases his grip, the device will remain encircling the arm and not fall. The device will drop only if it is pointed straight down. Furthermore, when on the floor, the device of the present invention does not roll because it lacks the perfect cylindrical shape. The safety advantage will be especially appreciated by commercial gyms where multiple users share the limited space.

0028 The device of the present invention may be made of metal or any suitable material acceptable in the art. For the comfort of the user the device may be equipped with padding. For example, the grip bar may be made of metal with non-slip etching, or rubber or a synthetic polymer. In addition, the shoulder ring and the wrist protector may be also made of a synthetic polymer or lined with such material. Other forms of soft padding may also be used. The device may be covered with any of the protective coatings known in the art. For example, the device may be coated to withstand rust or damage by human sweat. The device may also be covered with an antibacterial or scratch-resistant coating. Finally, the surface of the device may be used to prominently display a trademark or an advertisement for the device itself or a different product.

0029 While the invention is described in connection with the illustrations, it is understood that it is not intended to limit the invention to the models depicted in the drawings, but on the contrary, it is intended to cover all alternative modifications and equivalents that may be included in the spirit and the scope of the invention as defined by the appended claims.

I claim:

1. A free exercise device designed to keep the user’s forearm straight while exercising comprising:

   one or more elongated members having a proximal end and a distal end, said members connected at the proximal end by a ring member;
   transverse gripping means connected to at least one of said elongated members;
   and means for attaching a weight on the distal end of said elongated members;
   wherein said elongated members have the length of a portion of an average human forearm measured from the hand to the upper portion of the forearm just below the elbow.

2. The free exercise device of claim 1 wherein said weight is removably attached to said device.

3. The free exercise device of claim 1 further comprising a transverse bar positioned between said gripping means and said ring, wherein said transverse bar is located above the wrist joint of a human hand gripping said gripping means.

4. The free exercise device of claim 3 wherein at least one of said ring and said grip bar is padded with material selected from the group consisting of fabric, rubber and synthetic polymer.

5. The free exercise device of claim 1 wherein said gripping means have a non-slip surface.

6. The free exercise device of claim 1 coated with material having properties selected from a group consisting of anti-corrosion, anti-scratch and anti-bacterial.

7. A method of exercising the muscles of the arm involving a step of utilizing a device comprising one or more elongated members having a proximal end and a distal end, said members connected at the proximal end by a ring member, said ring member being positioned below the elbow, transverse gripping means connected to at least one of said elongated members and means for attaching a weight on the distal end of said elongated members.

8. The method of claim 7 wherein at least one forearm is raised and lowered while remaining straight.

9. The method of claim 7 wherein at least one arm is bent and straightened.

10. A method of elongating the muscles of the arm by performing an exercise utilizing a device comprising one or more elongated members having a proximal end and a distal end, said members connected at the proximal end by a ring member, said ring member being positioned below the elbow, transverse gripping means connected to at least one of said elongated members and means for attaching a weight on the distal end of said elongated members, wherein at least one forearm is raised and lowered while remaining straight.

11. The method of claim 10 wherein at least one arm is bent and straightened.

* * * * *