A dumbbell with adjustable weight includes a plurality of weighty disks each having an axial opening and an off-centered track extending partially across the axial opening. A bar has two ends received in the axial openings of the weighty disks and is formed with a plurality of spaced notches defined in each end thereof. The weighty disks are each provided with a positioning member movably connected thereto. Furthermore, each of the weighty disks is formed with a first retainer and the positioning member is formed with a second retainer cooperative with the first retainer for releasably retaining the positioning member in the first position once the positioning member is moved to this position, thereby locking the corresponding one of the weighty disks on the bar.
FIG. 9 (Prior Art)
DUMBBELL WITH ADJUSTABLE WEIGHT

BACKGROUND OF THE INVENTION

[0001] 1. Field of the invention

[0002] The present invention relates to a dumbbell, more particularly, to a dumbbell with adjustable weight, which has a positioning member movably in the off-centered track of the weighty disk to lock the weighty disk on the bar or to detach the same from the bar to adjust the weight of the dumbbell to an extent desired by a user for a muscle exercise.

[0003] 2. Description of the Prior Art

[0004] At present, many types of dumbbells for the same purpose of muscle exercise with adjustable weighty disks are available. However, due to the difference of the adjustable structure, the cost, assembly and operation of each dumbbell is different as well.

[0005] As shown in Fig. 9, a conventional dumbbell includes a bar “a” with a plurality of weighty disks “b” attached to each ends thereof. In detail, each of the disks “b” has an elongated opening “b1” extending inwardly from an outer periphery thereof; and a pin “d” movable within the disk “b” in a direction intersecting the elongated opening “b1”. The pin “d” is additionally urged by a spring “c” so that a front end of the pin “d” is extended into the opening “b1” and engaged with the bar “a” at a point, thus locking the disk “d” on the bar “a”.

[0006] Although the weighty disks can be assembled and detached easily and quickly, the conventional dumbbell still has disadvantages as follows:

[0007] 1. It is manufactured expensively because it consists of excessive components, including the spring “c” and a cover “e” fixed on the outer periphery of the weighty disk “b”, which are both required to ensure the engagement of the pin “d” with the bar “a”.

[0008] 2. It may not be used safely because the pin “d” has a projecting back end, upon which any action taken by mistake will result in sudden detachment of the weighty disk “b” from the bar “a”, especially when being used, it may bring the user into danger.

[0009] Therefore, there is a need for an improved dumbbell to overcome the above-mentioned disadvantages of the conventional structure. The inventor therefore with years experience has developed a dumbbell with adjustable weight according to the invention.

SUMMARY OF THE INVENTION

[0010] It is an object of the present invention to provide a dumbbell with adjustable weight, which is simplified and can be manufactured cheaply by providing an off-centered track of the weighty disk and a movable positioning member that can make the weighty disk and bar lock or detach.

[0011] Another object of the present invention is to provide a dumbbell with adjustable weight, which can be used safely by providing a positioning member that can be completely placed into the off-centered track of the weighty disk.

[0012] To achieve the above objects, the present invention provides a dumbbell including a plurality of weighty disks, a bar and a plurality of positioning member. The weighty disks have respectively an axial opening and an off-centered track extending partially across the axial opening. A stop and a first retainer are provided in the off-centered track. A bar has two ends received in the axial openings of the weighty disks and is formed with a plurality of spaced notches defined in each end thereof. The plurality of positioning members is each movably received in the off-centered track of each weighty disk respectively. The positioning members are each provided with longitudinal slot to receive the stop therein, in order to control the movement of the positioning member. And the positioning member is provided with the second retainer cooperative with the first retainer to limit the positioning member at the predetermined position.

[0013] When the positioning member moves from the periphery of the weighty disk inwardly, one end of the positioning member is engaged with the spaced notch of the bar, the weighty disk is accordingly locked on the bar for muscle exercise purpose. When the positioning member moves outwardly from the center of the weighty disk, the bar is detached from the control of the positioning member, the weighty disk is hence detach from the bar for adjusting the weight of the dumbbell.

[0014] Other objects, advantages and novel features of this invention will become more apparent from the following detailed description when taken in reference to the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0015] Fig. 1 is a perspective view of the first embodiment of the present invention;

[0016] Fig. 2 is an exploded view of the elements of the first embodiment of the present invention;

[0017] Fig. 3 is an enlarged sectional view showing a first retainer cooperating with a second retainer;

[0018] Fig. 4 is an enlarged sectional view showing a stop extending through a positioning member and connected to a weighty disk;

[0019] Fig. 5 is a sectional view showing a status in operation when the weighty disk is connected with the bar;

[0020] Fig. 6 is a sectional view showing a status in operation when the weighty disk is detached from the bar;

[0021] Fig. 7 is a perspective view of the second embodiment of the present invention;

[0022] Fig. 8 is a perspective view showing a cutout defined in the periphery of the weighty disk of the present invention; and

[0023] Fig. 9 is a sectional view of a conventional dumbbell.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0024] Referring to Figs. 1 and 2, they show the first embodiment of a dumbbell 1 with adjustable weight in
accordance with the present invention that includes a plurality of weighty disks 2, a bar 3 and a plurality of positioning members 4.

[0025] The weighty disks 2, preferably cylindrical in shape, each has an axial opening 21 and an off-centered track 22 extending across the axial opening 21. Wherein, the axial opening 21 is configured as an elongated opening extending inwardly from an outer periphery to a center of the weighty disk 2, and the track 22 is configured as a groove defined in one side of the weighty disk 2 and extending apart from the abovementioned center. Each of the weighty disks 2 is further formed with a first retainer 5, which preferably is a spring-loaded member arranged in the off-centered track 22, such as a compression spring 51 or a ball 52 spring-loaded by a compression spring 51, as shown in FIG. 3.

[0026] The bar 3 is an elongated cylindrical body, its intermediate portion to be gripped by a user. Further, the bar is formed in its each end with a plurality of equi-spaced necks 31, each having a pair of opposed chamfers 311 which are spaced apart at a distance slightly smaller than the width of the elongated axial opening 21 of the weighty disk 2. This allows the neck 31 to be moved along the elongated axial openings 21 to the center of the weighty disks 2. Additionally, the bar 3 is formed with a plurality of spaced notches 312 defined in respective necks 31 between the chamfers 311.

[0027] Each of the weighty disks 2 is provided with a positioning member 4 movably connected thereto. The positioning member 4 is preferably an L-shaped strip having an arm 41 movably received in the off-centered track 22 of the weighty disk 2 and a lateral end 42 provided for the user to pull and push the positioning member 4. In the illustrated embodiment, the arm 41 of the positioning member 4 has a longitudinal slot 43 defined therein. And a large head stop 6, such as a screw, has a shank extending through the longitudinal slot 43 and connecting to the weighty disk 2, as shown in FIGS. 1 and 4, whereby the stop 6 is movably connected the positioning member 4 to the weighty disks 2 and keeps the arm 41 in the track 22.

[0028] The positioning member 4 is movable along the weighty track 22 between a first position in which the arm 41 is moved into and engaged with one of the notches 312 to lock the weighty disk 2 on the bar 3, as shown in FIG. 5, and a second position in which the arm 41 is moved out and disengaged from the same notch 312 to unlock the weighty disk 2 from the bar 3, as shown in FIG. 6. Furthermore, the positioning member 4 is formed with a second retainer 44 in its arm 41. The second retainer 44 preferably includes a recess into which the spring-loaded ball 52 may snap once the positioning member 4 is moved to its first position, thus releasably retaining the positioning member 4 in this first position.

[0029] Referring to FIG. 5, each of the weighty disks 2 can be attached to the bar 3 by placing one of the necks 31 of the bar 3 into the center of the weighty disk 2 through the axial opening 21. As soon as the positioning member 4 is pushed to its first position so that the arm 41 is moved into the notch 312 defined in the neck 31, the weighty disk 2 is locked on, being impossible to be moved along or to be turned up or to bar 3. At this time, the ball 52 of the first retainer 5 also snaps into the recess of the second retainer 44, and so retains the positioning member 4 in its first position. It is in this first position that the arm 41 of the positioning member 4 blocks the way along which the neck 31 of the bar 3 may otherwise exit. The disk 2 is then so surely attached to the bar 3 at the neck 31 that the user may use the resulting dumbbell 1 safely to exercise the muscles of the arms. Referring to FIG. 6, each of the weighty disks 2 can also be detached from the bar 3 by pulling the lateral end 42 of the positioning member 4 until the positioning member 4 is moved to its second position. The neck 31 of the bar 3 then can be removed from the axial opening 21 of the weighty disk 2. This results in the separation between the weighty disk 2 and bar 3. The inventive dumbbell 1 can be adjusted to a desirable weight by attaching or detaching weighty disks 2 in the aforementioned manner.

[0030] Referring to FIG. 7, it shows a second embodiment of the dumbbell 1 with adjustable weight in accordance with the present invention. In this embodiment, each weighty disks 7 has an axial opening (not shown) in a round shape and has an off-centered track 71 extending partially across a radially outer part of the round opening. Furthermore, a bar 8 is formed with a plurality of spaced notches 81 directly defined in each end thereof. The combination of these components may also achieve the same purpose of the present invention as in the first embodiment.

[0031] Referring to FIG. 8, each weighty disk 9 may be formed with an additional cutout 91 defined in its periphery thereof, for the purpose of receiving the lateral end 42 when the positioning member 4 is moved to its first position. This provides the weighty disk 9 with a perfect appearance.

[0032] Therefore, the present invention has the following advantages:

[0033] 1. The dumbbell of the present application can be manufactured cheaply because it consists of simplified components, which enable reliable attachment of the weighty disks to the bar, as well as adjustment for the weight of the dumbbell.

[0034] 2. The dumbbell of the present application can be used safely without any risk of accident separation between the weighty disks and the bar because the whole positioning member is retracted into the disk as the disk is locked on the bar.

[0035] In conclusion, the present invention can achieve its objectives and provide a dumbbell with adjustable weight, which consists of simplified components and can be used safely.

1. A dumbbell with adjustable weight, comprising:

a plurality of weighty disks each having an axial opening and an off-centered track extending partially across said axial opening, a stop and a first retainer, which located in the off-centered track;

a bar having two ends received in said axial openings of said weighty disks, said bar being formed with a plurality of spaced notches defined in each of said ends;

said weighty disks each being provided with a positioning member movably connected thereto, said positioning member being movable along said off-centered track between a first position in which said positioning member is moved into and engaged with one of said spaced notches to lock corresponding one of said
weighty disks on said bar, and a second position in which said positioning member is moved out and disengaged from said one of said spaced notches to unlock said corresponding one of said weighty disks from said bar; and

wherein each of said weighty disks is formed with a first retainer and said positioning member is formed with a second retainer cooperative with said first retainer for releasably retaining said positioning member in said first position once said positioning member is moved to said first position, thereby locking said corresponding one of said weighty disks on said bar.

2. The dumbbell as claimed in claim 1, wherein said axial opening is configured as an elongated opening extending inwardly from an outer periphery of each of said weighty disks.

3. The dumbbell as claimed in claim 2, wherein said bar is formed with a plurality of spaced necks defined at each of said ends, and wherein said spaced notches are defined in said necks between said chambers, respectively.

4. The dumbbell as claimed in claim 3, wherein each of said spaced necks has a pair of opposed chamfers spaced apart at a distance suitable to be moved along to the interior of said elongated opening.

5. The dumbbell as claimed in claim 1, wherein said positioning member has a longitudinal slot defined therein, and wherein a large-head stop has a shank extending through said longitudinal slot and connected to corresponding one of said weighty disks, thereby movably connecting said positioning member to said corresponding one of said weighty disks.

6. The dumbbell as claimed in claim 1, wherein said first retainer comprises at least one spring-loaded member, and said second retainer comprises at least one recess into which said spring-loaded member may be snapped once said positioning member is moved to said first position.

7. The dumbbell as claimed in claim 1, wherein said positioning member has an L-shaped configuration.

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