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(54) **FIXED WEIGHT DUMBBELL ASSEMBLY**

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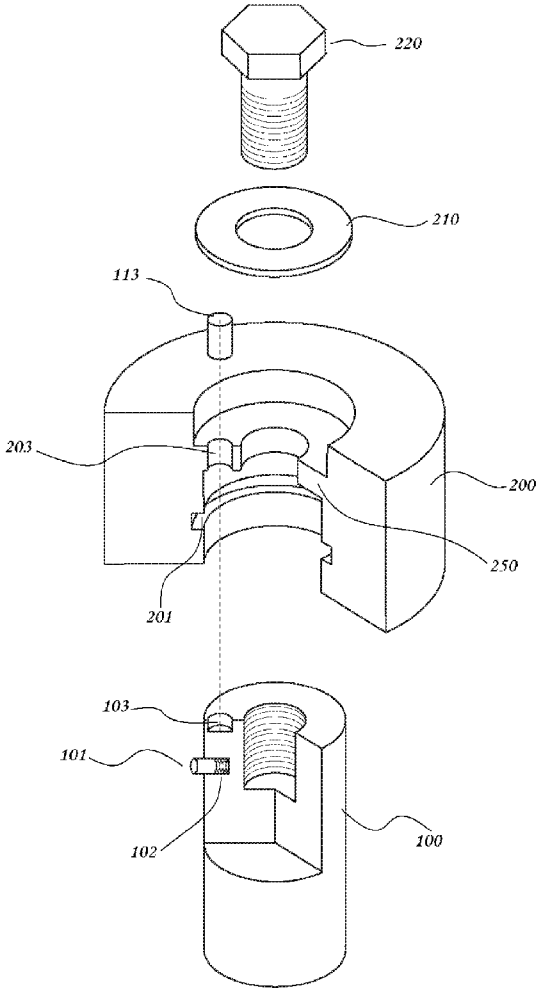
(57) **ABSTRACT**

An easy dumbbell assembly is presented herein, so that the weight heads are attached to handle bar in a very secured manner, without the process of welding, or the concern of cold weld. After a lock nut to tighten the assembly and eliminate the spin/rotate of the handle bar, a cap piece is pressed into the specially designed grooves on the weight heads, further securing the lock nut in place, for long period of extended use, reducing safety concern as a result of loose connection between weight heads and handle bar.



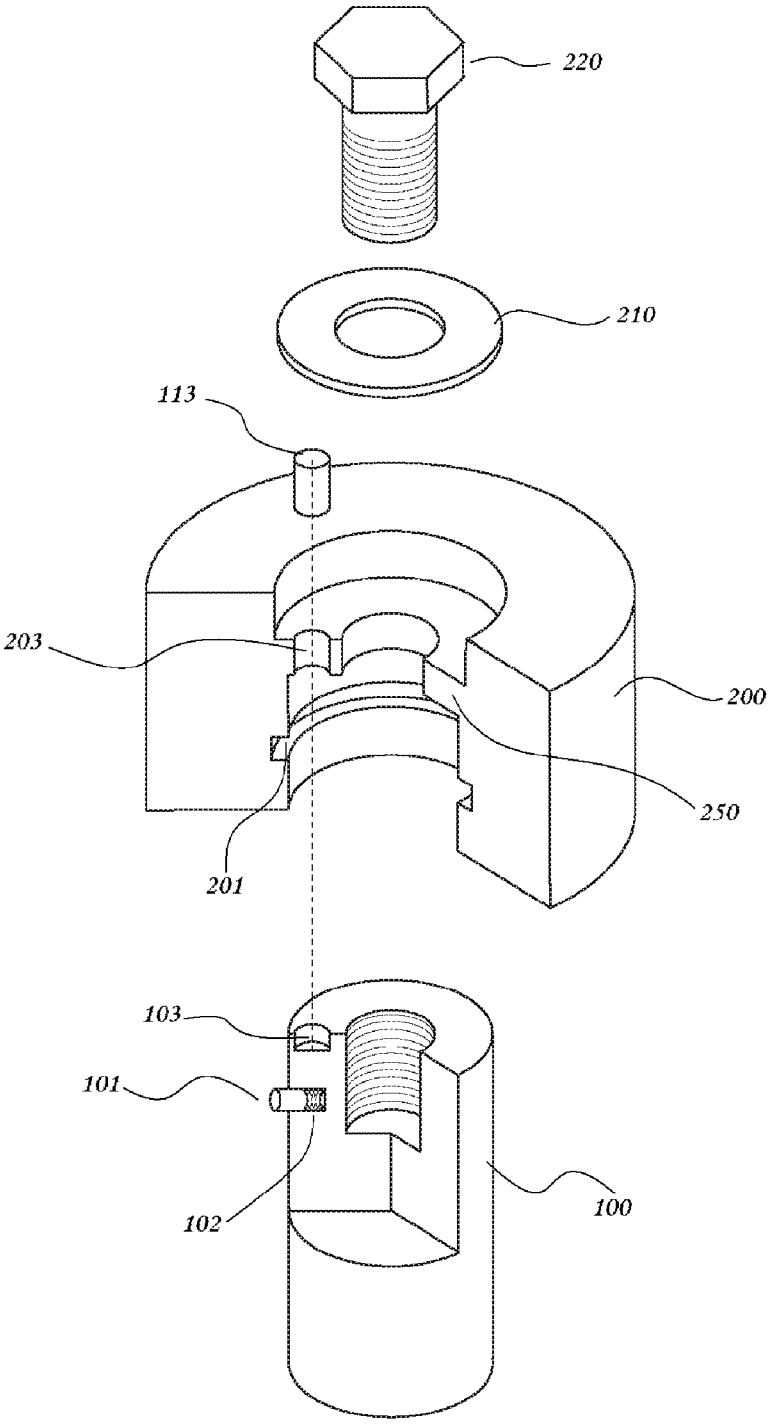


Figure 1

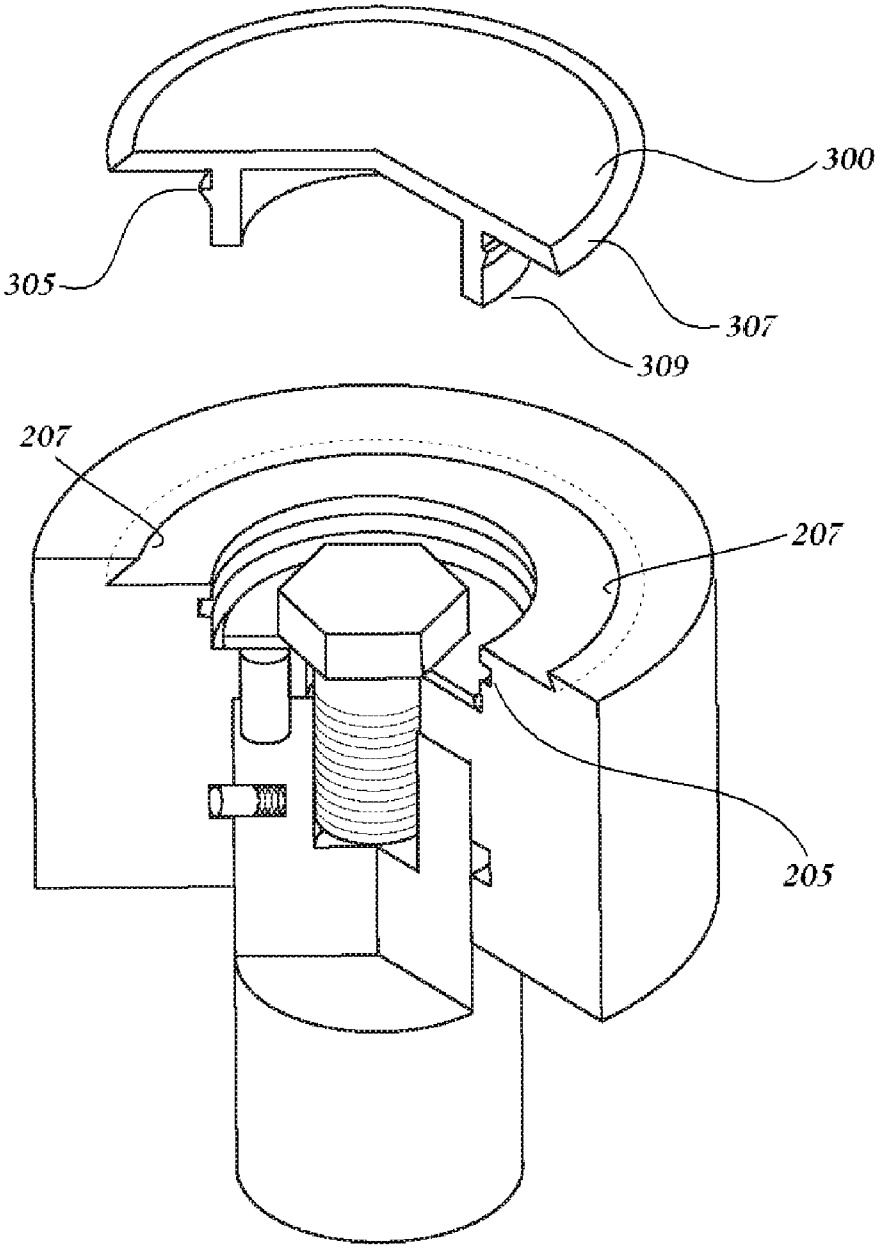


Figure 2

FIXED WEIGHT DUMBBELL ASSEMBLY

FIELD AND BACKGROUND OF THE INVENTION

[0001] The present invention relates generally to an improved design and construction of fixed weight dumbbell assembly for use in fitness training wherein the assembly process is made simple and conducive to user safety.

[0002] Dumbbells are commonly found in fitness centers and gyms, as well as for sale to private users. Typically, two weight-heads are attached to the two ends of a handle bar, forming a fixed weight dumbbell.

[0003] Oftentimes, the mechanism for attaching the two weight-heads to the handle bar is by welding, since most handle bar and weight head materials are made of iron. The problem with welding is that because metals absorb heat, by its nature, points of "cold weld" often form on the junction and is a part of latent defect that may cause breakage during later usage. This type of inherent weakness due to the "cold weld" is hard to detect at a reasonable cost.

[0004] Another commonly used attaching means is by using lock nuts or screws to fit weight heads to the handle. Although there is no inherent weakness, the nuts or screws inevitably become loose, during the useful lifetime of the dumbbell and needs constant checkup to make sure the weigh heads are not loose, posing dangers to unwitting users.

[0005] Present invention introduces a cost-effective construction of a fixed weight dumbbell assembly that provides secured assembly and heightened safety for long-term usage.

OBJECTS AND SUMMARY OF THE INVENTION

[0006] Present invention essentially employs two locking pins to guide and secure the assembly of weight heads to a handle bar, enabling easy and secured assembly, while reducing the possibility that the weight heads might become loose even after repeated use of knocking around in a less-than-tended-to settings such as fitness centers or gyms.

DESCRIPTION OF THE DRAWINGS

[0007] The accompanying drawings, which are incorporated in and constitute a part of this specification, illustrate the preferred embodiments of the invention and together with the description, serve to explain the principles of the invention.

[0008] A brief description of the drawings is as follows:

[0009] FIG. **1** shows the exploded view of present invention.

[0010] FIG. **2** shows the partially assembled view of present invention, having the handle bar locked in place.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0011] In FIG. **1**, a handle bar **100** contains a spring pin **101** and a spring **102** in a hole near one end of said handle bar. On the opposite end of the handle bar **100**, identical construction of present invention needs no further explanation.

[0012] Spring **102** is so situated in the hole to provide resilience force for spring pin **102** to move in radial direction of the handle bar **100**'s axis.

[0013] At end of handle bar **100**, a lock pin **113** is movably situated in a position hole **103** axially dug in to the cut off end of said handle bar **100**.

[0014] Said handle bar **100** further has an axial length of drilled opening from each cut-off end containing thread lines on the inside wall.

[0015] On weight head **200**, a ring of shoulder **250** is formed in its center through bore. Said shoulder **250** divides the center through bore into a first side and a second side. Said first side is to snuggly receive said handle bar **100**. Said second side is to receive a washer piece **210** and a lock nut **220**.

[0016] A locking hole **203** is drilled through shoulder **250**, having same diameter as that of lock pin **113**.

[0017] A groove AA **201** is formed around the inside wall of weight head **200** center bore, at proper distance from the shoulder **205**. This is the same distance as from the edge of said handle bar **100** to the point of said spring pin **101**. This is because, when handle bar **100** is inserted into weight head **200**, said spring pin **101** will pop in, thanks to the resilience of said spring **102**, into groove AA **201**, which is machined to snuggly receive spring pin **101**.

[0018] A locking hole **203** is formed through shoulder **205**, so that it is lined up with position hole **103**, allowing lock pin **113** to fit through locking hole **203** and into position hole **103**.

[0019] It can been seen clearly that when handle bar **100** is pushed into the first side of center bore of weight head **200**, with handle bar's cut-off end touching and being flush with shoulder **250**, spring **102** will push spring pin **101** into groove AA **201**, easily and securely attaching handle bar **100** to the weight head **200**.

[0020] By lining up the position hole **103** and locking hole **203**, via the use of lock pin **113**, handle bar **100** won't turn or spin relative to weight head **200**.

[0021] FIG. **2** shows that a washer piece **210** will be pressed down against lock pin **113**, by tightening lock nut **220** towards the handle bar **100**. The thread lines on lock nut **220** match those on the inside wall of said handle bar **100**.

[0022] A cap piece **300** has a ring of lip **305** on the outside surface of its cylindrical base **309**. The diameter of said cylindrical base **309** fits the second side of center bore of said weight head **200**. A ring of groove BB **205** is formed on the inside wall of said second side of center bore to snuggly receive said ring of lip **305**.

[0023] The edge of cap piece **300** is formed to have angled edge **307**. At the end of center bore on the weight head **200**, a ring of angled groove CC **207** is made to fit angled edge **307**.

What is claimed is:

1. Fixed weight dumbbell assembly, comprising:

a. handle bar having a spring, a spring pin and a lock pin, with axial opening on cut-off end of said handle bar made to contain thread lines;

b. a pair of weigh head each further having a ring of shoulder, a first ring of groove on first side of said shoulder and a second and third rings of groove on second side of said shoulder, with a hole formed through said shoulder;

c. a lock nut having matching washer piece, with thread lines formed to match those of said handle bar's thread lines in the axial opening; and,

d. a cap piece further having a ring of lip on its cylindrical base to fit said second ring of groove on said weight head and an angled edge to fit said third ring of groove.

2. Dumbbell assembly of claim 1 wherein said spring pin is so situated in radial direction of said handle bar to snuggly fit into said first ring of groove on said weight head when said handle bar is inserted into said first side of said center bore of weight head, having end of handle bar flush with said shoulder.

3. Dumbbell assembly of claim 2 wherein said washer piece is fit snuggly onto said shoulder, pressing down said lock pin through said hole on said shoulder, into a hole on the cut off edge of handle bar, so that said handle bar will not spin or turn relative to said weight head when said lock nut is tightened and said cap piece is pressed in place, causing said ring of lip to snuggly fit into said second ring of groove and said angled edge to fit into said third ring of groove.

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