US005445587A

United States Patent [19]

Brown

[11] Patent Number: 5,445,587

[45] Date of Patent: Aug. 29, 1995

[54] **LIQUID FILLABLE DUMBELL**

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[21] Appl. No.: **199,744**

[22] Filed: **Feb. 22, 1994**

[51] **Int. Cl.**[6] **A63B 21/075**

[52] **U.S. Cl.** **482/108**

[58] **Field of Search** 482/105–109, 482/92, 93

[56] **References Cited**

U.S. PATENT DOCUMENTS

3,334,899	8/1967	Bosko et al.	482/108
4,029,312	6/1977	Wright	482/106
4,043,553	8/1977	Suarez	482/106 X
4,072,308	2/1978	Applegate	482/904 X
4,103,887	8/1978	Shoofler	482/106

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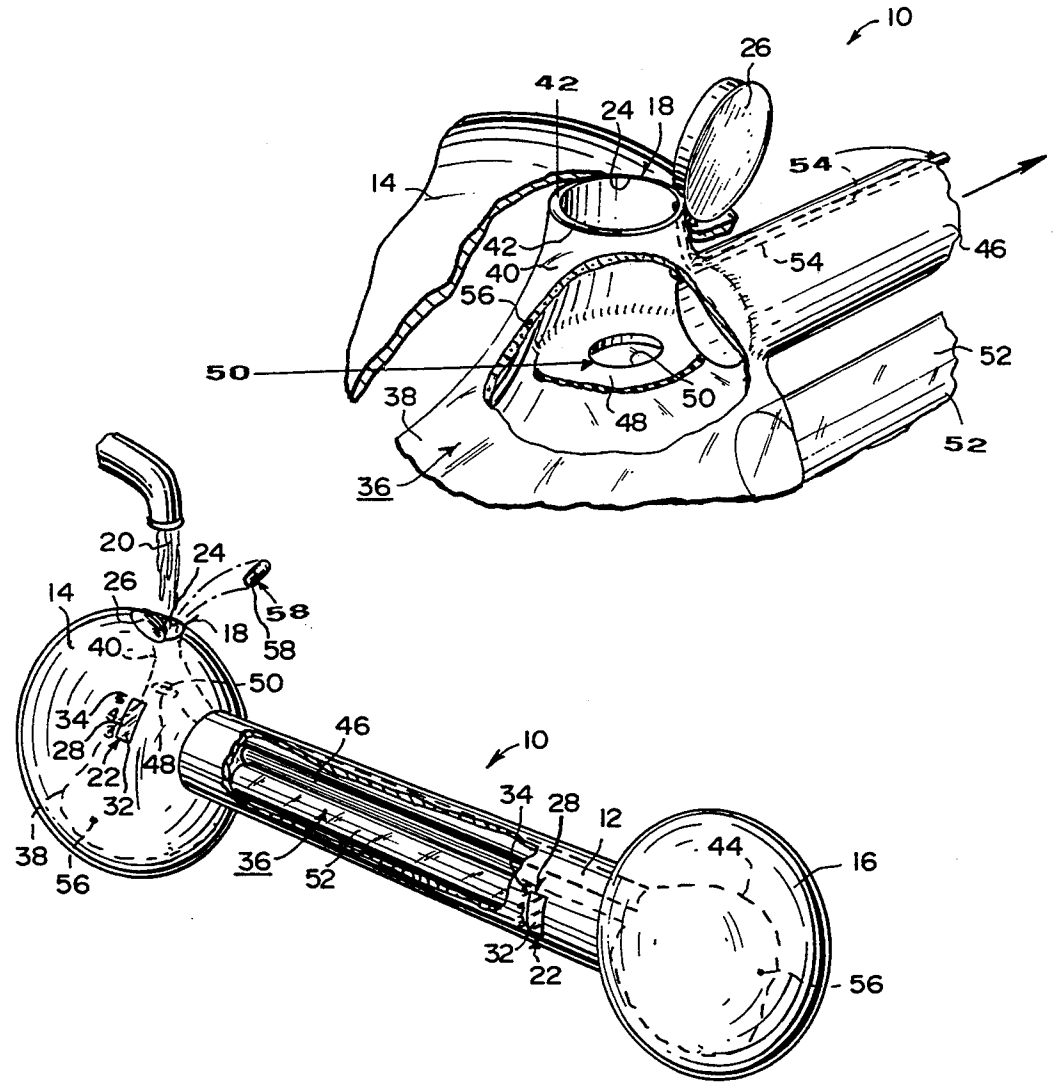
Assistant Examiner—John Mulcahy

Attorney, Agent, or Firm—Michael I. Kroll

[57] **ABSTRACT**

An improved barbell is provided, which consists of a hollow elongated handle. A pair of hollow bulbous enclosures are fluidly connected to opposite ends of the hollow elongated handle. A structure is provided for filling the hollow bulbous enclosures and the hollow elongated handle with a liquid to increase the weight thereof, so that a person can properly exercise to promote physical fitness. A means is provided for evenly distributing the liquid through the hollow bulbous enclosures and hollow elongated handle when being filled. After exercising the liquid may be poured out of the filling structure, leaving the hollow elongated handle and the hollow bulbous enclosures in a lightweight condition to be easily handled, transported and stored.

7 Claims, 2 Drawing Sheets



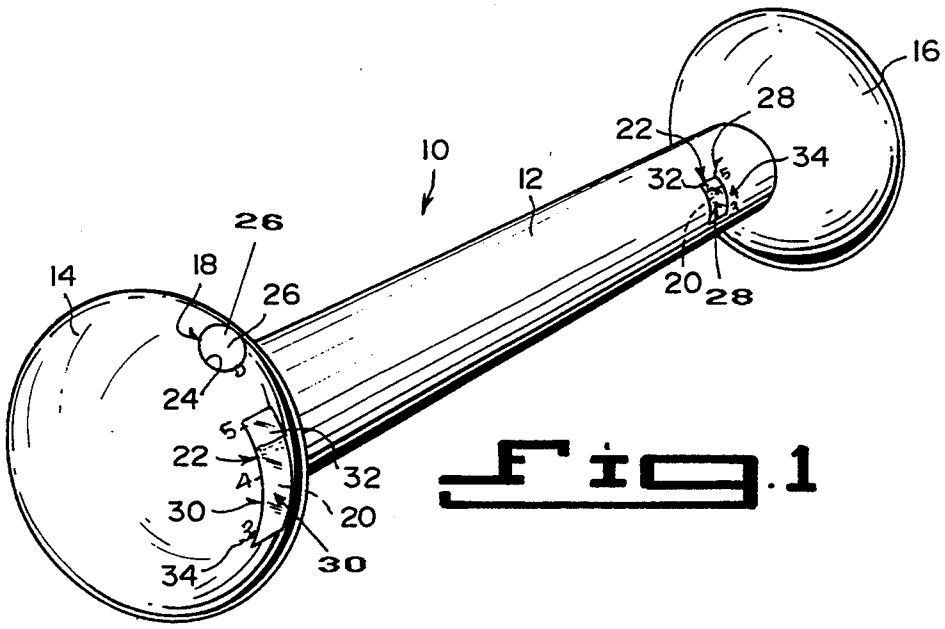


Fig. 1

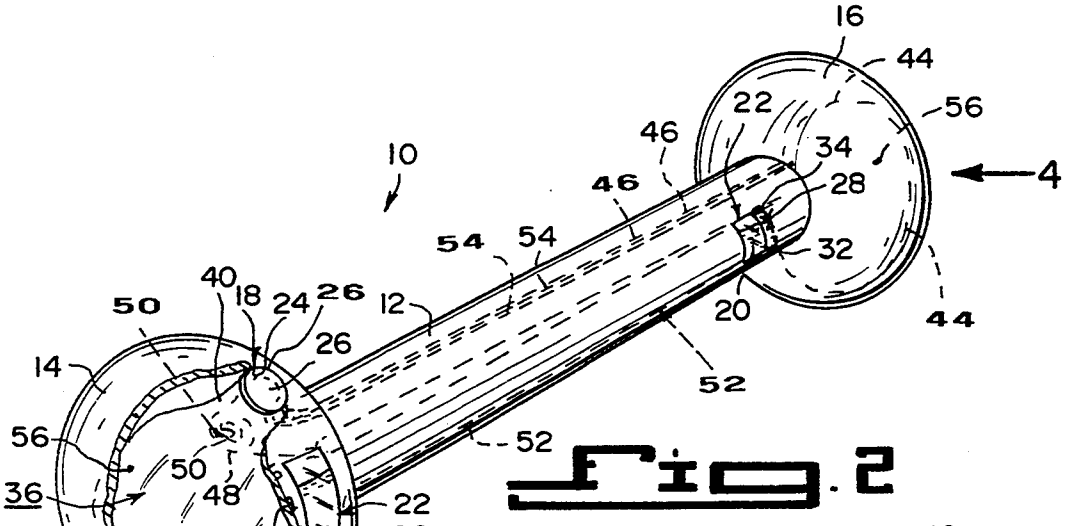


Fig. 2

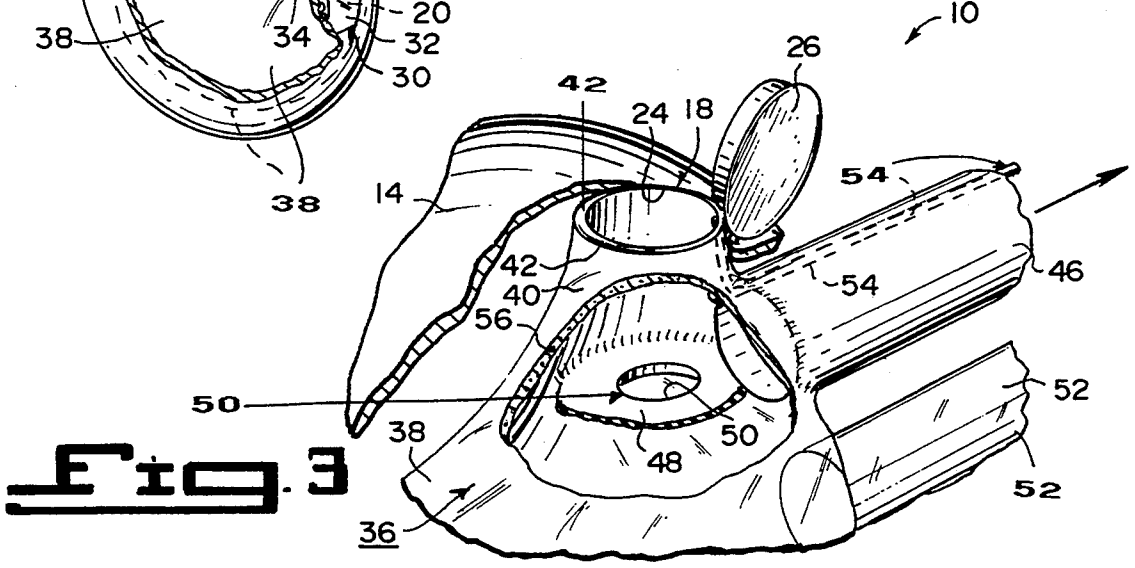


Fig. 3

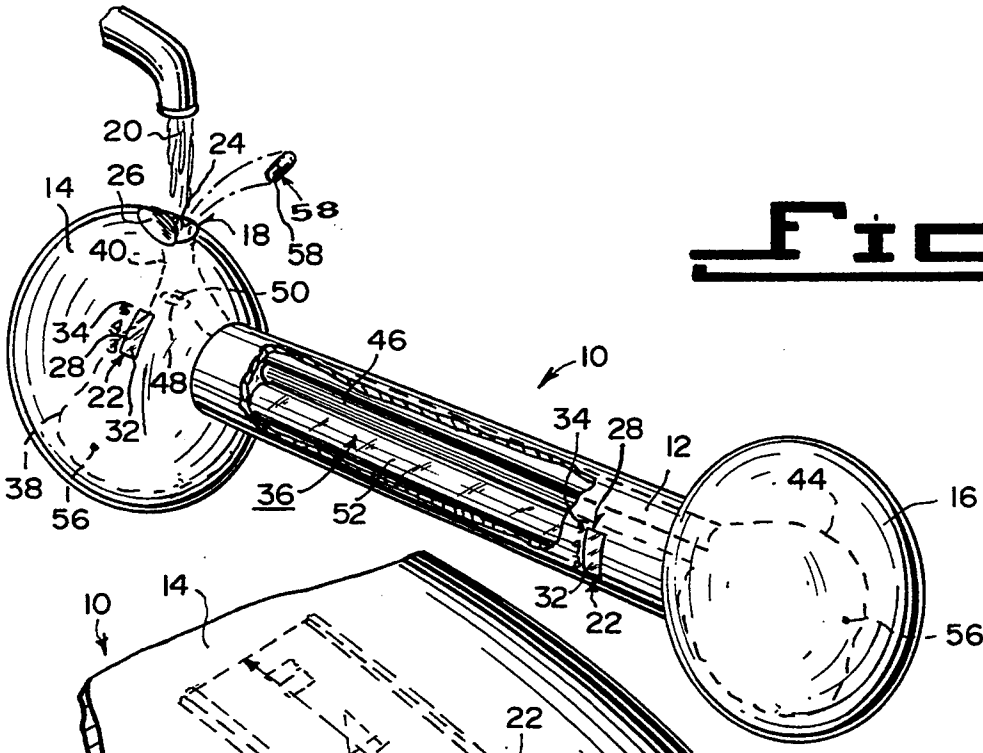


Fig. 4

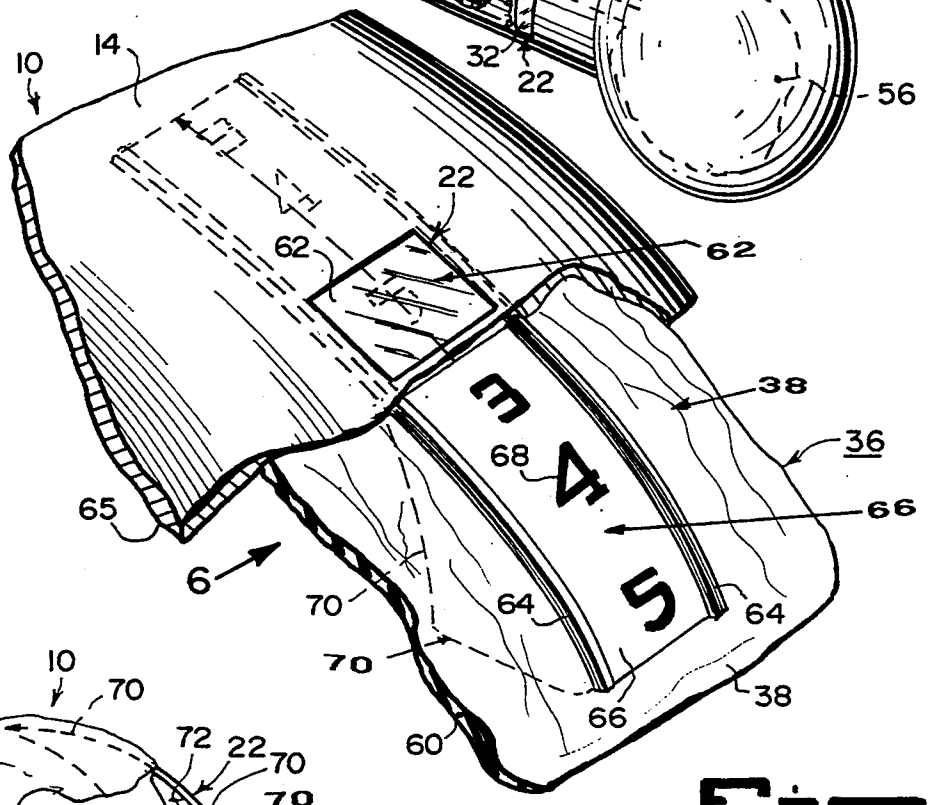


Fig. 5

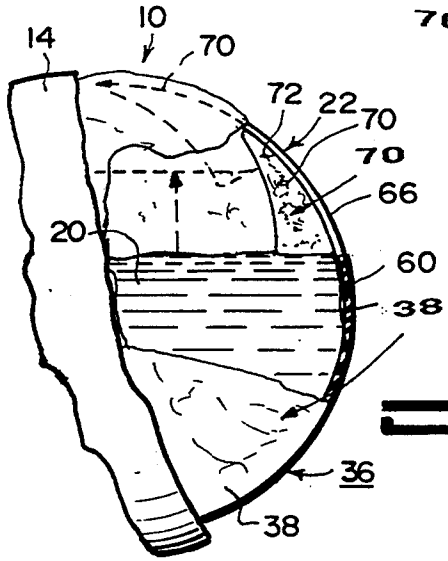


Fig. 6

LIQUID FILLABLE DUMBELL

BACKGROUND OF THE INVENTION

1. Field of the Invention

The instant invention relates generally to exercising devices and more specifically it relates to an improved barbell.

2. Description of the Prior Art

Numerous exercising devices have been provided in prior art. For example, U.S. Pat. No. 3,231,270 to Winer; U.S. Pat. No. 3,311,374 to Wittenberg et al.; U.S. Pat. No. 4,029,312 to Wright; U.S. Pat. No. 4,076,236 to Ionel; U.S. Pat. No. 4,103,887 to Shoofler; U.S. Pat. No. 4,361,324 to Barni; U.S. Pat. No. 4,905,992 to McWain and U.S. Pat. No. 4,913,422 to Elmore et al. all are illustrative of such prior art. While these units may be suitable for the particular purpose to which they address, they would not be as suitable for the purposes of the present invention as heretofore described.

Winer, Marvin

BAR BELL HAVING COLLAPSIBLE CHAMBERS

U.S. Pat. No. 3,231,270

A bar bell comprising an elongated bar with a variable volume fluid chamber at each end of the bar. The bar extends centrally through each fluid chamber. Each fluid chamber has a first fixed portion and a second collapsible, movable portion that is continuously movable along the bar from a minimum volume position to a maximum volume position and vice versa. The bar has readily visible exposed indicia registering with a point on the second movable portion of each fluid chamber to indicate the volume of the fluid chamber at any position of the second movable portion and hence to indicate the weight of fluid within the fluid chamber.

Wittenberg, Edward H.

Wittenberg, Irving E.

VARIABLE WEIGHT BAR BELL EXERCISING DEVICE

A weight lifting exercise device comprising an elongated handle and a pair of chamber forming hollow bulbous members spaced apart at opposite ends of the elongated handle. The bulbous members are thin walled and each are comprised of a pair of mating deeply concave shells and secured to each other along an annular seam. The seams lie in spaced apart parallel planes and extend perpendicular to the longitudinal axis of the handle at opposite ends thereof. A reinforcing plate lies between each pair of the mating shells in the plane of the seams and is secured thereto. A stop structure on the handle is spaced inwardly from each end thereof by a distance just slightly in excess of the concave depth of the innermost of the mating shells. A central opening is in the innermost of the mating shells of each of the pair of shells. A central opening is in each of the reinforcing plates. The handle extends with a close slide fit into the opening in the shell so that the innermost shell rests against the stop structure. The handle also extends with a close slide fit through the central opening in the reinforcing plate and is rigidly secured thereto. An opening in the other and outermost of the mating shells of each of the pairs of shells is for introduction of a weight-adding material to each of the bulbous members. A removable closure is for the opening. Communicating ports between the chambers in the bulbous members are defined by the shells and reinforcing plate for passage of the weight-adding material.

Wright, Forrest S.

EXERCISING DEVICE

U.S. Pat. No. 4,029,312

A weight-lifting or exercising device wherein the spacing of the weights along the length of the bar and the masses of the individual weights may be selectively varied to accommodate people of different sizes and capabilities. Each of the weights is substantially hollow and includes a generally ovoid or egg-shaped shell. Each shell has a first axis, a central aperture transverse to the first axis, and tubular member aligned with the axis and extending across the aperture. A channel opens at one longitudinal end of the shell and extends along the axis and through the tubular member for telescopically receiving the bar therein. The aperture is adapted to receive a person's hand or foot to operatively engage the tubular member for exercising purposes and the weights may be used without the bar as individual dumbbells. The shells may be telescoped along the bar and selectively locked at spaced locations along its length. The shells also include compartments which can be filled or emptied of foreign materials such as water, sand, shot or the like to selectively increase or decrease the mass of the individual weights.

Ionel, Stefan

BAR-BELL TYPE EXERCISING DEVICE

U.S. Pat. No. 4,076,236

The invention relates to a hantel easy to transport and store and the weight of which can be adapted at will. This hantel comprises a handle and at least two hollow bodies each connected, in a removable way, to one end of the handle. A plug closes tightly each hollow body which may be filled with water or other materials for use.

Shoofler, Renald

BARBELL WITH COLLAPSIBLE LOAD CARRYING CHAMBERS

U.S. Pat. No. 4,103,887

Portable barbell apparatus is disclosed comprising a collapsible enclosure made of a synthetic polymeric material. The enclosure has a base and an aperture for filling the enclosure. The center of gravity of the enclosure is between the aperture and the base. An opening is provided in the enclosure for receiving the end of a weight supporting bar. The opening is positioned in between the center of gravity and the aperture. This arrangement allows for the positioning of a pair of the enclosures on either end of a weight supporting bar after which the enclosures may be filled with water, sand or other particulate material so that the assembly may be employed as a barbell. When not in use, the enclosures may be removed from the weight supporting bar, emptied and conveniently transported and/or stored. The aperture comprises a slit and has a resilient member extending around the periphery thereof to resiliently bias the slit to a closed position.

Baroi, Stephan I.

APPARATUS FOR PHYSICAL CULTURE AND PHYSIOTHERAPY

U.S. Pat. No. 4,361,324

The apparatus for physical culture and physiotherapy comprises a set of different hollow interchangeable members made from a plastics material. It comprises, for example, two hollow bodies, each having the filling opening scaled by a plug and two tubular skirts having on their outer or inner walls respectively a thread which constitutes a coupling. The two hollow bodies are fixed to the ends of a connecting bar formed by the assembly of three rectilinear elements in order to form a dumb-bell. The latter also has at its ends two supplementary hollow bodies, identical to the two first hollow bodies and separated therefrom by a supplementary rectilinear element. A sleeve is mounted so as to rotate freely on each of the two supplementary rectilinear elements, so as to provide a more complete apparatus and offering more different possibilities of use than a conventional dumb-bell.

McWain, Richard J.

COLLAPSIBLE WEIGHT SYSTEM

U.S. Pat. No. 4,905,992

A collapsible weight system provides a collapsible/expandable diaphram for containing a liquid which includes a closed hub disclosed on one end thereof and an open hub disposed on another end thereof. A tubular cap is provided to seal the collapsible/expandable diaphragm while engaging both the closed hub and the open hub to provide axial support of the diaphragm a pin locking system is provided in order to lock the tubular cap to a bar for lifting the weights. When the bar is engaged and locked with the cap, it extends therethrough providing additional strength and support for the collapsible/expandable diaphragm.

Elmore, Connie

Elmore, Jennifer C.

Elmore, John-Michael

Elmore, Michael R.

BARBELL HAVING HOLLOW INTERLOCKING WEIGHTS

U.S. Pat. No. 4,193,422

In one embodiment of the present invention, a tubular body defines a handle and sleeves at each end of the tubular body. Hollow fillable add-on weights include an outer wall that defines an annular step that is sized to be received within a sleeve of the tubular body. The add-on weights are engaged with the tubular body by a peg and thru-hole or dimple arrangement that holds the add-on weights against rotation and axial separation within the sleeve of the tubular body. The add-on weights and hollow body combine to form an annular indentation around which a strap-on weight can be fastened. The strap-on weight includes a hollow flexible elongated pouch, one surface of which includes a recess having a fill nozzle projecting therefrom onto which a cap can be mounted for filling the hollow pouch with water, sand or other suitable material. An attachment strap extends from one end of the pouch and includes a number of snap-on holes spaced along the length of the strap. The surface of the pouch also includes a pair of raised buttons projecting from a reinforced wall of the hollow pouch onto which the holes in the strap are snapped so that the pouch can be retained in an encircling relationship.

SUMMARY OF THE INVENTION

A primary object of the present invention is to provide an improved barbell that will overcome the shortcomings of the prior art devices.

Another object is to provide an improved barbell which is hollow, so that it can receive a liquid to increase its weight, allowing a person to properly exercise with it, to help promote physical fitness and after exercising the liquid may be drained leaving the barbell in a lightweight condition to be easily handled, transported and stored.

An additional object is to provide an improved barbell that contains weight calibrated sight windows built into it, so that a person can see how to vary the weight by putting in the correct amount of liquid.

A further object is to provide an improved barbell that is simple and easy to use.

A still further object is to provide an improved barbell that is economical in cost to manufacture.

Further objects of the invention will appear as the description proceeds.

To the accomplishment of the above and related objects, this invention may be embodied in the form illustrated in the accompanying drawings, attention being called to the fact, however, that the drawings are illustrative only, and that changes may be made in the specific construction illustrated and described within the scope of the appended claims.

BRIEF DESCRIPTION OF THE DRAWING FIGURES

FIG. **1** is a left side perspective view of a first embodiment of the instant invention.

FIG. **2** is a left side perspective view of a second embodiment with parts broken away and some of the internal elements shown in dotted lines.

FIG. **3** is an enlarged left side perspective view of a portion of the second embodiment showing the fill plug seal therein.

FIG. **4** is a right side perspective view taken in the direction of arrow **4** in FIG. **2** with parts broken away and some of the internal elements shown in dotted lines.

FIG. **5** is an enlarged perspective view of a portion of a third embodiment showing an alternative weight indicator therein.

FIG. **6** is an elevational view of the third embodiment with parts broken away taken generally in the direction of arrow **6** in FIG. **5**.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Turning now descriptively to the drawings, in which similar reference characters denote similar elements throughout the several views, FIG. **1** illustrates an improved barbell **10**, which consists of a hollow elongated handle **12**. A pair of hollow bulbous enclosures **14**, **16** are fluidly connected to opposite ends of the hollow elongated handle **12**. A structure **18** is for filling the hollow bulbous enclosures **14**, **16** and the hollow elongated handle **12** with a liquid **20** to increase the weight thereof, so that a person can properly exercise to promote physical fitness. After exercising the liquid **20** may

be poured out of the filling structure **18**, leaving the hollow elongated handle **12** and the hollow bulbous enclosures **14**, **16** in a lightweight condition to be easily handled, transported and stored.

An apparatus **22** is for visually indicating the amount of liquid **20** being filled therein, so that the person can see how to vary to weight by putting in the correct amount of liquid **20**. The filling structure **18** includes the first hollow bulbous enclosure **14**, having a top aperture **24** to allow the liquid **20** to enter and exit therefrom. A fill plug **26** is to seal closed the top aperture **24**.

The visually indicating apparatus **22** consists of a first weight calibrated sight window **28** built into the hollow elongated handle **12**. A second weight calibrated sight window **30** is built into the first hollow bulbous enclosure **14**. The first and the second weight calibrated sight windows **28**, **30** each include a curved transparent plate **32**, so as to see the liquid **20** therebehind. A weight scale **34** is adjacent to the curved transparent plate **32**, to indicate the weight amount of the liquid **20** retained therein.

The improved barbell **10**, as shown in FIGS. **2** through **6** further include an assembly **36** within the hollow elongated handle **2** and the hollow bulbous enclosures **14**, **16**, for evenly distributing the liquid **20** therethrough when being filled.

The liquid evenly distributing assembly **36** includes a first bladder **38**, with a neck portion **40** having a fill plug seal **42** carried within the first hollow bulbous enclosure **14**, so that the fill plug seal **42** will fit into the top aperture **24** a second bladder **44** is carried within the second hollow bulbous enclosure **16**. A fill tube **46** is carried within the hollow elongated handle **12** and is fluidly connected between one side of the neck portion **40** of the first bladder **38** and the second bladder **44**. A partition **48** having a restricted fill orifice **50** extends across the neck portion **40** of the first bladder **14** below the connection of the fill tube **46**. A liquid equalization tube **52** is carried within the hollow elongated handle **12** below the fill tube **46** and is fluidly connected between the first bladder **38** under the partition **48** and the second bladder **44**. A fill vent tube **54** carried within the fill tube **46** is fluidly connected at one end to the second bladder **44**. The other end extends into the neck portion **40** of the first bladder **38** and up to the fill plug seal **42**.

The first and the second bladders **38**, **44** in FIGS. **2** through **4** are fabricated out of transparent expandable material **56**. The visually indicating apparatus **22** is the same as in FIG. **1** and includes the first weight calibrated sight window **28** built into the hollow elongated handle **12**. The second weight calibrated sight window **30** is built into the first hollow bulbous enclosure **14**. The first and the second weight calibrated sight windows **28**, **30** each include the curved transparent plate **32**, so as to see the liquid **20** therebehind. The weight scale **34** is adjacent to the curved transparent plate **32**, to indicate the weight amount of the liquid **20** retained therein.

FIG. **4** shows a color dye capsule **58** that can be deposited into the top aperture **24** in the first hollow bulbous enclosure **14**. When the color dye capsule **58** dissolves in the liquid **20** therein a person can better see the liquid **20** through each curved transparent plate **22**.

In FIGS. **5** and **6**, the first and the second bladders **38**, **44** are fabricated out of stretchable rubber material **60**. The visually indicating apparatus **22** consists of a curved weight indication window **62** built into the first hollow bulbous enclosure **14**. A pair of curved tracks **64** are built into a rear surface **65** of the first hollow bulbous enclosure **14** on opposite sides of the curved weight indication window **62**. A curved weight indicator plate **66** is provided, having weight scale indicia **68** thereon. The curved weight indicator plate **66** slides within the curved tracks **64**. A float **70** on a back surface **72** of the curved weight indicator plate **66** extends into and is affixed to the first bladder **38**. When the liquid **20** enters the first bladder **38**, the float **70** will rise causing the curved weight indicator plate **66** to slide upwardly in the curved tracks **64**, to allow a person to see the proper weight scale indicia **68** through the curved weight indication window **62**.

LIST OF REFERENCE NUMBERS

10 improved barbell
12 hollow elongated handle
14 first hollow bulbous enclosure
16 second hollow bulbous enclosure
18 filling structure
20 liquid
22 visually indicating apparatus **22**
24 top aperture in **14**
26 fill plug
28 first weight calibrated sight window in **12**
30 second weight calibrated sight window in **14**
32 curved transparent plate
34 weight scale adjacent **32**
36 liquid evenly distributing assembly
38 first bladder in **14**
40 neck portion of **38**
42 fill plug seal on **40**
44 second bladder in **16**
46 fill tube in **12**
48 partition in **40**
50 restricted fill orifice
52 liquid equalization tube in **12**
54 fill vent tube in **46**
56 transparent expandable material for **38**, **44**
58 color dye capsule
60 stretchable rubber material for **38**, **44**
62 curved weight indication window
64 curved track on **65**
65 rear surface of **14**
66 curved weight indicator plate
68 weight scale indicia on **66**
70 float
72 back surface of **66**

It will be understood that each of the elements described above, or two or more together may also find a useful application in other types of methods differing from the type described above.

While certain novel features of this invention have been shown and described and are pointed out in the annexed claims, it is not intended to be limited to the details above, since it will be understood that various omissions, modifications, substitutions and changes in the forms and details of the device illustrated and in its operation can be made by those skilled in the art without departing in any way from the spirit of the present invention.

Without further analysis, the foregoing will so fully reveal the gist of the present invention that others can, by applying current knowledge, readily adapt it for various applications without omitting features that, from the standpoint of prior art, fairly constitute essential characteristics of the generic or specific aspects of this invention.

What is claimed is new and desired to be protected by Letters Patent is set forth in the appended claims:

1. An improved barbell which comprises:

a) a hollow elongated handle;

b) a pair of hollow bulbous enclosures fluidly connected to opposite ends of said hollow elongated handle;

c) means for filling said hollow bulbous enclosures and said hollow elongated handle with a liquid to increase the weight thereof, so that a person can properly exercise to promote physical fitness and after exercising the liquid may be poured out of said filling means leaving said hollow elongated handle and said hollow bulbous enclosures in a lightweight condition to be easily handled, transported and stored, said filling means including said first hollow bulbous enclosure having an aperture to allow the liquid to enter and exit therefrom, and a fill plug to seal close said aperture;

d) means for visually indicating the amount of liquid being filled therein, so that the person can see how to vary the weight by putting in the correct amount of liquid, said visually indicating means including a first weight calibrated sight window built into said hollow elongated handle, and a second weight calibrated sight window built into said first hollow bulbous enclosure, said first and said second weight calibrated sight windows each including a curved transparent plate, so as to see the liquid therebehind, and a weight scale adjacent to said curved transparent plate to indicate the weight amount of the liquid retained therein; and

e) means within said hollow elongated handle and said hollow bulbous enclosures for evenly distributing the liquid therethrough when being filled, said liquid evenly distributing means including a first bladder with a neck portion having a fill plug seal carried within said first hollow bulbous enclosure, so that said fill plug seal will fit into said aperture, a second bladder carried within said second hollow bulbous enclosure, a fill tube carried within said hollow elongated handle and fluidly connected between one side of said neck portion of said first bladder and said second bladder, a partition having a restricted fill orifice extending across said neck portion of said first bladder below the connection of said fill tube, a liquid equalization tube carried within said hollow elongated handle below said fill tube and fluidly connected between said first bladder under said partition and said second bladder, and a fill vent tube carried within said fill tube fluidly connected at one end to said second bladder, while other end extends into said neck portion of said first bladder and up to said fill plug seal.

2. An improved barbell as recited in claim 1, wherein said first and said second bladders are fabricated out of transparent expandable material.

3. An improved barbell as recited in claim 2, wherein said visually indicating means includes:

a) a first weight calibrated sight window built into said hollow elongated handle; and

b) a second weight calibrated sight window built into said first hollow bulbous enclosure.

4. An improved barbell as recited in claim 3, wherein said first and said second weight calibrated sight windows each include:

a) a curved transparent plate, so as to see the liquid therebehind; and

b) a weight scale adjacent to said curved transparent plate to indicate the weight mount of the liquid retained therein.

5. An improved barbell as recited in claim 4, wherein the liquid is dyed so that a person can better see the liquid through each said curved transparent plate.

6. An improved barbell as recited in claim 1, wherein said first and said second bladders are fabricated out of stretchable rubber material.

7. An improved barbell as recited in claim 6, wherein said visually indicating means includes:

a) a curved weight indication window built into said first hollow bulbous enclosure;

b) a pair of curved tracks built into a rear surface of said first hollow bulbous enclosure on opposite sides of said curved weight indication window;

c) a curved weight indicator plate having weight scale indicia thereon, whereby said curved weight indicator plate slides within said curved tracks; and

d) a float on a back surface of said curved weight indicator plate extending into and affixed to said first bladder, so that when the liquid enters said first bladder, said float will rise causing said curved weight indicator plate to slide upwardly in said curved tracks, to allow a person to see the proper weight scale indicia through said curved weight indication window.

* * * * *