United States Patent

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[54] HAND WRESTLING EXERCISE APPARATUS

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[51] **Int. Cl.** **A63b 21/22**

[58] **Field of Search** ..... 272/83 R, 83 A, 82, 79 R, 79 A, 272/79 B, 79 C, 79 D, 67, 68, 72, DIG. 1, DIG. 2, DIG. 3, DIG. 4, DIG. 5, DIG. 6; 73/379 R, 379 G, 379 TB, 380 R, 380 A, 381 R, 381 G

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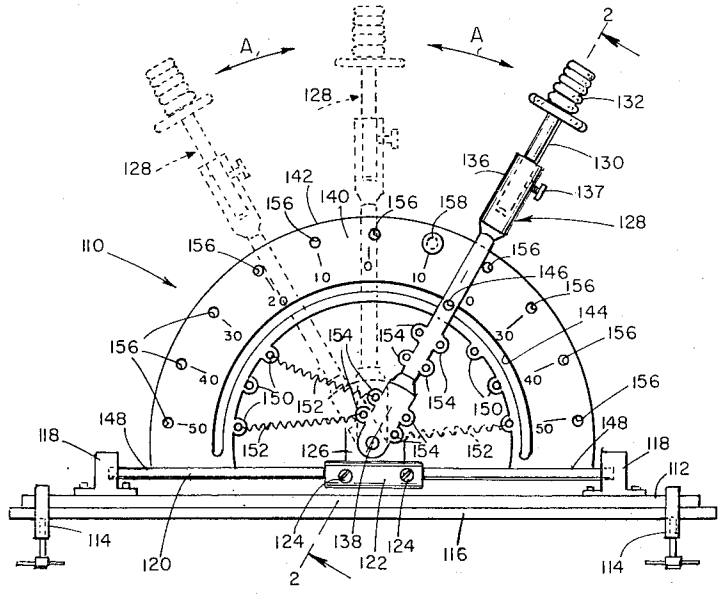
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[57] **ABSTRACT**

Hand wrestling apparatus comprising a base, and means for securing the base upon a table or the like at the edge thereof. The base includes a handle which is supported for universal articulation. A reference plate of disc-shaped character having a generally semi-circular peripheral extent is pivotally mounted upon the base and operatively associated with the handle so that the reference plate may be pivoted in a first direction toward and away from the base in unison together with the handle. A plurality of springs or the like interconnect the reference plate and the handle to one another for biasing the handle from movement in a second direction transversely of the direction of the reference plate displacement. The springs may be positioned in any of a number of locations on both the plate and handle so that the pressure exerted against the handle can be adjusted and controlled.

14 Claims, 3 Drawing Figures



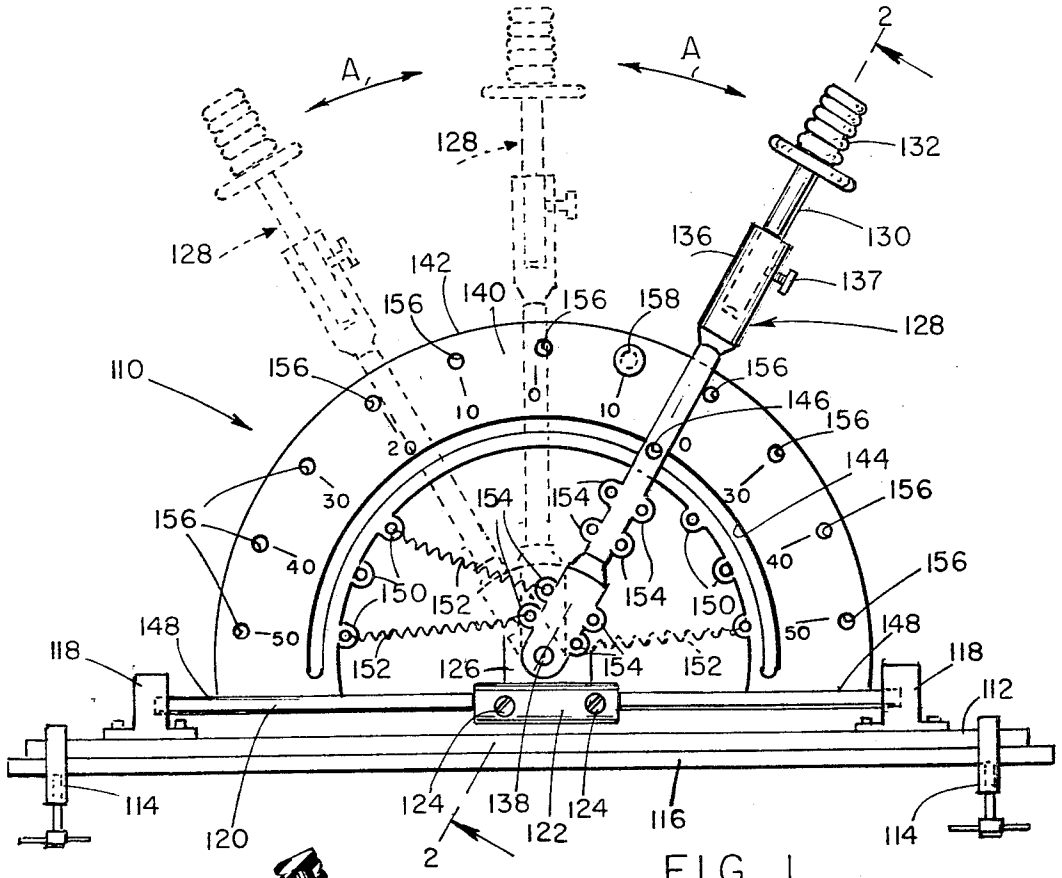


FIG. 1.

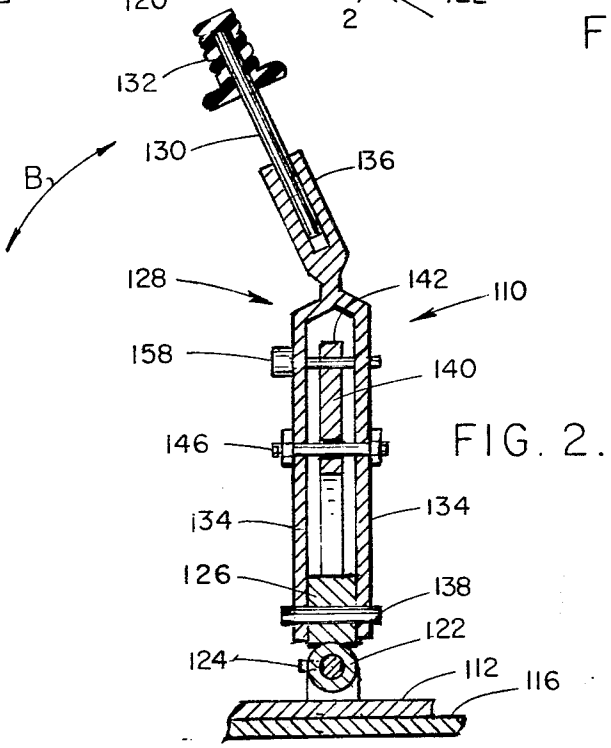


FIG. 2.

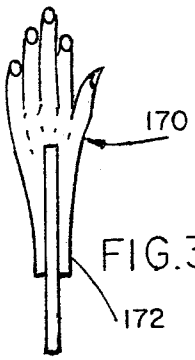


FIG. 3.

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HAND WRESTLING EXERCISE APPARATUS

BACKGROUND OF THE INVENTION

The present invention relates generally to exercising apparatus, and more particularly to exercising apparatus of the hand and arm strengthening variety.

Exercising apparatus of the hand and arm strengthening variety are well known and conventional and are assembled in numerous shapes and arrangements for permitting a user to exercise and strengthen his hands and arms. The present invention relates to a hand wrestling assembly and there are many specific conventional arrangements that are conventional for this particular purpose. In this respect, the conventional type of hand wrestling or hand exercising assemblies include ball and socket arrangements for supporting the exercising member or handle, which ball and socket are resiliently associated with one another so that the pressure required for displacing the handle relative to the socket may be adjusted. The ball and socket arrangement of the conventional type does not however permit fine control over the pressure inducing elements.

In this respect, when the ball and socket arrangement is employed, a threaded control pin is utilized for increasing or reducing pressure against the ball. These types of ball and socket control arrangements incorporate internal springs against which the threaded control pin may be urged for increasing or decreasing the compression thereof and, therefore, the resultant pressure against the exercising handle. Generally, the user, therefore, is limited to the control capacity of the built-in control elements in the exercising apparatus. Thus, if the user wishes to increase the pressure against the exercising handle beyond that pressure which is provided by the built-in control structure, the user is generally at a loss for doing so. Thus, the apparatus may not be satisfactorily used by persons widely differing from one another in strength.

A further disadvantage with regard to the conventional so-called hand wrestling apparatus is that the apparatus does not include a reference structure to which the user may refer to permit determination of the strength of the user or the user's day to day progress over extended periods of exercise. Furthermore, even in those exercising assemblies that do have some sort of reference means to which the user may refer, the reference means is generally rigid and not displaceable. Thus, when the user wishes to refer to the reference means, he must do so by eye and more or less gauge the displacement of the exercising handle relative to the reference means merely as an estimation inasmuch as the exercising handle when supported for universal articulation is generally displaced away from the reference means and prevents an accurate reading.

SUMMARY OF THE INVENTION

Accordingly, it is an object of the present invention to provide an exercising apparatus of the hand and arm strengthening variety having an exercising handle which is supported for universal articulation.

It is a further object of the present invention to provide an exercising apparatus having means for accommodating both different positions and different numbers of springs acting against the exercising handle so that the extent of control or pressure urged against the exercising handle may be essentially universally controlled.

It is another object of the present invention to provide an exercising apparatus of the hand and arm strengthening variety in which there is provided a reference plate to which the user may refer, which reference plate is displaceable together with the exercising handle so that the user may know with precision his exercising progress.

It is still another object of the present invention to provide an exercising apparatus that may be utilized either by left-handed or right-handed individuals and by children and adults alike.

It is a further object of the present invention to provide an exercising apparatus that is easily mounted on a table in fixed relation with the latter so that it may be readily utilized.

To this end, the above objects and further objects as will become apparent in the description below, are affected by providing a hand wrestling apparatus comprising a base, and means for securing the base upon a table or the like at the edge thereof. The base includes a handle which is supported for universal articulation. A reference plate of disc-shaped character having a generally semi-circular peripheral extent is pivotally mounted upon the base and operatively associated with the handle so that the reference plate may be pivoted in a first direction toward and away from the base in unison together with the handle. A plurality of springs or the like interconnect the reference plate and the handle to one another for exerting pressure against the handle in a second direction transversely of the direction of the reference plate displacement. The springs may be positioned in any of a number of locations on both the plate and handle so that the pressure exerted against the handle can be adjusted and controlled.

BRIEF DESCRIPTION OF THE DRAWINGS

With the above and additional objects and advantages in view as will hereinafter appear, this invention comprises the devices, combinations, and arrangements of parts hereinafter described and illustrated in the accompanying drawings of a preferred embodiment in which:

FIG. **1** illustrates an elevational view of the apparatus according to the present invention;

FIG. **2** illustrates a cross-sectional view taken along the line **2—2** in FIG. **1**; and

FIG. **3** illustrates a plan view of the portion to be grasped by a user of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

Referring now to the drawings and specifically to FIGS. **1** and **2** thereof, the present invention comprises a hand wrestling assembly **110**. The assembly **110** includes a base **112** and clamping members **114** for clamping the base in detachable yet fixed relation to an external source such as the edge of a table **116**. Fixedly connected as by conventional means is a pair of opposite mounting brackets **118** for freely receiving in rotatable fashion an elongate pivot rod **120**. Fixedly connected between the mounting brackets **118** and on the elongate pivot rod **120** is a sleeve **122**. The sleeve is fixed to the elongate pivot rod **120** for pivotal displacement therewith through the intermediary of set screws **124**.

The sleeve **122** includes a projecting extension **126** extending generally transversely of the elongate rod **120**. An exercising handle assembly **128** is connected to the projecting extension **126** in a pivotal fashion as will be discussed below. The handle assembly **128** includes a gripping portion or rod **130**, the latter terminating in a free or endmost elastomeric grasping member **132** which is to be grasped by a user for exercising purposes. The handle assembly **128** includes a pair of spaced parallel limbs **134** in generally U-shaped relation. Integrally connected to the pair of spaced parallel limbs **134** is an extension portion **136** which is inclined relative to the limbs in a manner as illustrated clearly in FIG. **2**. Both the extension portion **136** and the gripping portion **130** are telescopically arranged relative to one another such that the gripping portion **130** may be received internally of a bore provided in the extension portion **136**. The gripping portion **130** may be detachably fixed internally of the extension portion **136** through the intermediary of a clamping screw **137**. The end portions of the spaced parallel limbs **134** are pivotally connected to the projecting extension **126** by means of a pivot rod **138**. Thus, as illustrated in FIGS. **1** and **2**, both the elongate pivot rod **120** and the pivot rod **138** are associated with one another in mutually perpendicular relation so that the handle assembly **128** may be universally articulated or universally displaced such as along arrows A and B in FIGS. **1** and **2** respectively for exercising purposes.

The hand wrestling assembly **120**, according to the present invention, furthermore includes reference means or a plate **140** which is generally disc-shaped and has a generally semi-

circular peripheral extent **142**. The plate **140** includes, or is provided with, an arcuate guide slot **144** which extends generally in parallel relation to the arcuate periphery **142**. The spaced parallel limbs **134** of the handle assembly **128** include a reinforcing stud **146** which interconnects the latter limbs for reinforcing purposes and extends transversely through the arcuate guide slot **144** so that it may be displaced therealong. The reference means or plate **140** is fixedly connected to the elongate pivot rod **120** such as by conventional means, i.e., welding or the like, at **148** substantially along the entire extent of the pivot rod **120**. Thus, as the pivot rod **120** is rotated in the brackets **118**, the reference means or plate **140** is displaced therewith. As illustrated most clearly in FIG. **2**, the pair of spaced parallel limbs **134** embrace the entire reference means or plate **140** such that the extension portion **136** of the handle assembly **128** is pivotally displaceable along the periphery **142** of the plate **140** in embracing relation.

The reference means or plate **140** includes a plurality of spaced retaining ears **150** arcuately arranged generally parallel to the periphery **142** thereof. Either one or a plurality of resilient elements such as springs **152** or the like are utilized for interconnecting the reference means or plate **140** through the intermediary of the ears **150** of the latter to the handle assembly **128**. In this respect, the handle assembly **128** also includes a plurality of axially spaced retaining ears **154** for retaining one end of the spring or springs **152**, the other end of each of the springs **152** being connected or retained by the spaced ears **150** extending outwardly of the reference means or plate **140**.

The reference means or plate **140** is furthermore provided with a plurality of arcuately spaced openings **156** arranged generally parallel to its periphery **142** for receiving a reference abutment pin **158** in detachable fashion for the purpose as will be discussed further below. As illustrated clearly in FIG. **1**, each of the spaced openings **156** is denoted further by an indexing scale or graduated reference scale to which the user may refer upon displacing the handle assembly **128** when exercising.

In operation, the present invention may be utilized by securing the base **112** to a table edge **116** in detachable fashion through the intermediary of the clamping members **114**. The user then places his elbow adjacent the handle assembly **128** and grasps the grasping portion **132**, the latter being elastomeric so that it may be squeezed and held tightly by the user. As may be readily appreciated, the apparatus according to the present invention as illustrated in FIG. **1**, is set up for left-handed use. Thus, the user grasps the handle assembly **128** with his left hand and proceeds to pivot both the handle assembly **128** and the reference means or plate **140** about the pivotal axis **120**. This latter pivotal displacement of the handle assembly **128** is continued until the user's elbow is relaxed in contact with the base **112**. It is clear therefore, that any user, whether the user be a child or an adult, may readily utilize the present invention inasmuch as the latter accommodates all arm lengths in universal fashion. When the user's elbow is in relaxed position upon the base **112**, the user may then proceed to displace the handle assembly **128** along the periphery **142** of the reference means or plate **140**. As arranged in FIG. **1**, the user should displace the handle assembly **128** in clockwise fashion so that the springs **152** pull against the handle assembly **128** in opposition thereto.

Should the user be right-handed, then the assembly as illustrated in FIG. **1**, may be modified easily in that the springs **152** as shown on the left-hand portion of the reference means or plate **140** may be readily detached from the ears **150** on the left side and replaced or inserted into the ears **150** on the right side of the assembly as illustrated in phantom in FIG. **1**. Thus, the user then grasps the handle assembly **128** with his right hand and proceeds to displace the handle assembly **128** in a manner as was discussed above for the left-handed user.

It should be clear from the above discussion that any number of springs **152** may be utilized with the present invention whether they be connected in singular relation, in tandem relation or in spaced relation. Thus, the degree of pressure exerted against the handle assembly **128** can be readily controlled universally to account for the particular strength and weakness of the individual user. It is noteworthy, that the reference means **140** remains in constant association with the handle assembly **128** as the latter is displaced during the exercising procedure. Thus, the user or exerciser may readily refer to the reference means or plate **140** to determine his particular strength or particular progress on a day to day progress over extended periods of exercise.

It is significant to furthermore point out that the reference abutment pin **158** may be positioned or inserted into any of the openings **156** so that as the user displaces the handle assembly **128**, he may do so without specifically watching the reference means and displace the handle **128** until the latter engages or contacts the reference abutment pin **158**. Thus, the reference abutment pin **158** may be selectively positioned in any of the openings **156** to readily indicate to the user that he has displaced the handle **128** over the arcuate extent that he has chosen. In this respect, the arcuate extent may be chosen before hand either as a goal to be achieved eventually requiring the maximum strength of the user, or may merely reflect a selected degree of displacement which requires less than the maximum strength of the user, but is utilized for permitting the user to repeatedly displace the handle means **128** in rapid exercising fashion.

Another useful purpose of the reference abutment pin **158** is to secure the handle assembly **128** against displacement by the springs **152** when the assembly **110** is not in use. Thus, the assembly **110** can be stored with the handle assembly **128** in a selected position either upright or in any of the positions along the extent of the reference means or plate **140**.

As indicated above, the reference means or plate **140** is provided with a pair of oppositely extending graduated scales along the periphery thereof having indicies corresponding to the openings **156**. The indicies may be calibrated in terms of tension such as by conventional means to reflect the pound pressure or the like required to displace the handle assembly **128** over selected arcuate extents. Thus, when the springs **152** are positioned in a manner as illustrated in FIG. **1**, or positioned in any other manner such as in tandem, wherein two springs are connected to the very same ears **150** and **152** of the plate **140** and handle assembly **128** respectively, the user may identify before hand the specific pressure required for displacing the handle assembly **128** over the selected arcuate extents. The manner for calibrating these specific indicies for each particular spring arrangement, may be done in any number of conventional ways and therefore, the description of same is omitted herefrom for sake of clarity.

It is noteworthy that elastomeric grasping member **130** may be formed generally in the shape of a human hand **170**, illustrated in FIG. **3**, the hand **170** having a tapered wrist portion **172**. The purpose of the tapered wrist portion **172** is to universally accommodate all hand sizes of persons utilizing the apparatus according to the present invention, whether the user be a child with a rather small hand or an adult with an appreciably larger hand. Thus, a child grasps the lowermost portion of the wrist **172** and alternatively the adult simply grasps the uppermost portion of the wrist **172** or the hand **170** itself. The configuration of the hand **170** serves to more appropriately enhance the concept of "hand wrestling" and can easily be shaped in numerous hand configurations for accommodating either or both left and right-handed users.

Numerous alterations of the structure herein disclosed will suggest themselves to those skilled in the art. However, it is to be understood that the present disclosure relates to a preferred embodiment of the invention which is for purposes of illustration only and not to be construed as a limitation of the invention.

What is claimed is:

1. A hand wrestler comprising a base, handle means, means supporting said handle means on said base for universal articulation relative to the latter, reference means operatively as-

sociated with said handle means and displaceable together with the latter in a first direction toward and away from said base, and resilient means interconnecting said reference means and said handle means for biasing said handle means from movement in a second direction transversely of said one direction of the reference means displacement, said reference means and said handle means being operatively associated to indicate the force exerted on the handle means when the handle means is displaced in said second direction.

2. A hand wrestler as claimed in claim 1, including means for detachably connecting said base to an external source in fixed relation with the latter.

3. A hand wrestler as claimed in claim 1, including support means for accommodating different positions of said resilient means on said reference means to permit adjustment of the pressure exerted against said handle means.

4. A hand wrestler as claimed in claim 3, wherein said handle means includes a plurality of retaining elements for securing said resilient means in one of a plurality of positions.

5. A hand wrestler as claimed in claim 1, wherein said means supporting said handle means includes a pair of mutually perpendicular fulcrums, said reference means being operatively associated with one said fulcrum for pivotal displacement toward and away from said base.

6. A hand wrestler as claimed in claim 5, wherein said reference means is generally disc-shaped and has a generally semi-circular peripheral extent.

7. A hand wrestler as claimed in claim 6, wherein said handle means includes a pair of integrally interconnected spaced parallel limbs in generally U-shaped relation, said limbs having ends of which respectively are operatively associated with the other said fulcrum, said spaced limbs embracing said disc-shaped reference means and being pivotally displaceable along the arcuate periphery of the latter.

8. A hand wrestler as claimed in claim 7, wherein said handle means further includes a gripping portion and means for connecting said gripping portion to said limbs in telescopic relation with the latter to permit adjustment of the longitudinal extent of said handle means.

9. A hand wrestler as claimed in claim 8, wherein said gripping portion is inclined relative to said limbs in a plane extending transversely of said disc-shaped reference means.

10. A hand wrestler as claimed in claim 9, wherein said gripping portion includes an elastomeric grasping member.

11. A hand wrestler as claimed in claim 10, wherein said elastomeric grasping member is shaped generally as that of a human hand and includes a tapered wrist portion.

12. A hand wrestler as claimed in claim 7, wherein said disc-shaped reference means is provided with an arcuate guide slot extending generally parallel to the arcuate periphery thereof, said limbs including a reinforcing member extending therebetween in fixed relation and transversely through said guide slot for displacement therealong.

13. A hand wrestler as claimed in claim 1, wherein said reference means is provided with a pair of oppositely extending graduated index scales along its entire extent each initiating at the peripheral center of the reference means and terminating respectively at the opposite peripheral ends of the reference means.

14. A hand wrestler as claimed in claim 13, including abutment means adjustably associated with said reference means for engagement by said handle means at one of a plurality of selected indicies of said scales respectively.

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