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ISOMETRIC EXERCISER WITH ELONGATED NON-ELASTIC TENSION MEMBERS

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Fig. 1

Fig. 2

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ABSTRACT OF THE DISCLOSURE

An exercising assembly designed to reduce the possibility of muscle damage when performing isometric exercise by providing means whereby the exercising assembly will enable the exerciser to exert a force in one direction without muscle contraction and in a second lateral direction at the same time with muscle contraction.

This invention relates to a novel and useful exercising assembly and more specifically to an assembly adapted to allow the user to not only exert a maximum force in one direction but also an additional force in a direction laterally of that one direction.

In isometric exercises a person should exert substantially the greatest force possible against an immovable object. By this type of exercise the exerciser forces his muscles to be contracted without being shortened.

While isometric exercises have proven beneficial in many instances, it has been found that a substantial amount of exercising equipment or numerous adjustments in the equipment is needed before the exerciser may practice isometric forms of exercise on a majority of his muscles.

It is accordingly the main object of this invention to provide a combination exercising device which will enable a person to practice modified isometric exercises on two separate sets of muscles at the same time.

In addition to conventional isometric exercises being limited to exercising substantially only one particular set of muscles at a time, there is a recent theory that minor and sometimes major muscle and other damage can be caused by an inexperienced and even experienced persons attempting isometric exercises. This muscle damage is thought to result from persons exerting maximum forces against an immovable object. Such strain action might be considered somewhat like trying to lift a far greater weight than a person is capable of lifting and which strain sometimes results in severe physical damage in many persons.

It is accordingly another object of this invention to provide a modified isometric exercising assembly that will enable the exerciser to exert a force in not only one direction but also in a direction laterally of that one direction. By experiencing these modified exercises, it is unlikely that a person can actually exert maximum effort in each direction, the exerciser having to use substantial concentration in order to effect substantially his maximum effort in only one direction. Still further, in addition to an exerciser not being able to exert substantially maximum concentration for exerting maximum force in two different directions at the same time, by simultaneously exerting forces in two directions, the maximum force or effort possible in each direction is naturally somewhat reduced inasmuch as total effort in two separate directions at the same time would require substantially twice the total effort required by exerting a force in only one direction at a time.

It is yet another object of this invention to provide a combination exercising device, in accordance with the preceding objects, which will enable the exerciser to exert forces in at least one of two directions against yieldable resistance and also to produce a dual resistance on a single muscle group.

A final object of this invention is to provide a combination exercising device of the instant invention shown with a person using the exercising device to exert forces in two different directions at the same time.

FIGURE 2 is a fragmentary enlarged vertical transverse sectional view taken substantially upon a plane indicated by the section line 2-2 of FIGURE 1;

FIGURE 3 is a fragmentary side elevational view of the exercising device showing a second manner of its use;

FIGURE 4 is a front elevational view of a modified form of the exercising device showing a third manner of its use;

FIGURE 5 is a top plan view of the modified form of apparatus illustrated in FIGURE 4;

FIGURE 6 is a perspective view of yet another modified form of the exercising device showing a fourth manner of its use; and

FIGURE 7 is a perspective view of still another form of the exercising device illustrating a fifth manner of its use.

Referring now more specifically to the drawings, the numeral 10 generally designates the exercising device of which may be seen to include an elongated anchor bar generally referred to by the reference numeral 12, a pair of flexible tension members 14 and 16, a pair of hand grip assemblies 18 and 20, and a pair of deformeable elastomer blocks 22 and 24.

As can best be seen in FIGURES 1 and 2 of the drawings, the anchor bar 12 comprises a generally channel-shaped member 26 including upwardly extending legs 28 and 30 which are inter-connected at their upper ends by means of a horizontal bight portion 32 and which terminate at their lower edge portions in inturned abutment flanges 34 and 36. The inner longitudinal edge portions of the abutment flanges 34 and 36 terminate in upturned stiffening flanges 38 and 40.

The bight portion 32 has three generally U-shaped anchors 42, 44 and 46 secured thereto and the lower ends of the flexible tension members 14 and 16 are releasably secured to the anchors 42 and 44 by means of corresponding eye-anchors 48 which may be adjustably anchored to the corresponding tension member at selected points spaced longitudinal therealong.

Each of the hand grip assemblies 18 and 20 includes a pair of divergent arm members 50 and 52 removably secured together at their adjacent ends by means of a pivot fastener 54 and having a generally cylindrical hand grip 56 secured between the other set of corresponding ends.
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An eye anchor \(53\) similar to the eye anchors \(45\) is pivotally secured to each of the pivot fasteners \(54\) and may also be engaged with the corresponding tension member at points spaced longitudinally therealong.

In FIGURE 1 of the drawings, the person \(60\) using the combination exercising device \(10\) of the instant invention has placed the anchor bar \(12\) over the threshold \(62\) of a doorway \(64\) and is standing on the anchor bar \(12\) with his feet spread apart approximately shoulder width. The person \(60\) is gripping the hand grips \(56\) of the assemblies \(18\) and \(20\) secured to the anchor bar \(12\) by means of the flexible tension members \(14\) and \(16\), the latter having been adjusted in effective length so as to position the hand grips \(56\) slightly above the elevation of the hands of the person \(60\) when the hands of the person \(60\) are fully lowered along each of his sides. The yieldable elastomeric blocks \(22\) and \(24\) are disposed between the backs of the person's hand and the vertical sides or abutment surface means or jambs \(66\) and \(68\) of the doorway \(64\) with the tension members \(14\) and \(16\) being slightly upwardly convergent. By thus positioning the combination exercising device \(10\) of the instant invention the person \(60\) may exert a substantial upward force on the hand grips \(56\) as well as a lateral outward force on each of the resilient and deformable blocks \(22\) and \(24\). With attention now directed more specifically to FIGURE 3 of the drawings, there will be seen a modification of the combination exercising device which is generally designated by the reference numeral \(19\) and which includes the same structural components as the exercising device \(10\). However, when using the exercising device \(19\), the person \(60\) is seated on a bench \(70\) or the like with his feet resting on the abutment bar \(13\). The resilient and deformable blocks \(22\) and \(24\) are disposed between the person's fists and his chest thereby enabling the person \(60\) to exert an upward force on the hand grips as well as a lateral force against the resilient blocks \(22\) and \(24\). With attention now invited to FIGURE 4 of the drawings, there will be seen a still further modified form of the combination exercising device generally designated by the reference numeral \(10^\prime\) and which includes the abutment bar \(12\) but the hand grip assemblies \(18\) and \(20\) and the corresponding flexible and adjustable tension member \(14\). In using the exercising device \(10^\prime\), the person \(60\) stands on the abutment bar \(12\) with the latter positioned on a suitable supporting surface such as a floor \(76\) and with the block \(22\) disposed on the end of the abutment bar \(12\) to which the tension member \(14\) is secured. The person \(60\) then places one foot on top of the block \(22\) and grips the hand grip assembly \(18\) with the corresponding hand and exerts an upward force with that hand as a downward force against the resilient deformable block \(22\) with the corresponding leg.

With attention now invited to FIGURE 5 of the drawings, there will be seen yet another modified form of the exercising device generally designated by the reference numeral \(110\) and in this form of the invention the hand grip assemblies \(18\) and \(20\) are interconnected by means of a single tension member \(14\) and the person \(60\) is disposed in a reclining position on the bench \(70\) with the tension member \(14\) passing beneath the top \(74\) of the bench \(70\) and the opposite ends thereof are passing upwardly along the sides of the chest of the person \(60\). The resilient and deformable blocks \(22\) and \(24\) are disposed between the hand grip assemblies \(18\) and \(20\) and in this manner the person \(60\) may exert an upward force with his arms on the hand grip assemblies \(18\) and \(20\) as well as opposite horizontal lateral forces on the hand grip assemblies \(18\) and \(20\) to compress the resilient and deformable blocks \(22\) and \(24\) therein.

It may therefore be seen that the combination exercising device of the instant invention may be utilized in numerous ways, all of which are not illustrated and described, and in a manner such that the person \(60\) may exercise two different sets of muscles simultaneously and without the person exerting the absolute maximum effort with either set of muscles being exercised.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. An exercise assembly adapted for providing modified isometric exercises including at least one hand grip assembly, at least one elongated and non-elastic tension member, and block-shaped body means constructed of resilient material, said hand grip assembly and at least one end portion of said tension member including coating means securing said tension member to said hand grip assembly, the other end portion of said tension member including means adapted for securing to an anchor member, abutment surface means facing and spaced slightly from said hand grip assembly in a direction extending laterally of the longitudinal axis of said tension member, said body means of resilient material being disposed adjacent said hand grip assembly and said abutment surface means, said body means being adapted to be held between the hand grip assembly and said abutment surface means by a user while exerting a pull on said hand grip assembly.

2. The combination of claim 1 wherein said tension member is flexible.

3. The combination of claim 1 wherein said hand grip assembly includes a pair of hand grip members secured to opposite end portions of said tension member, said abutment surface means including portions thereof spaced slightly from both hand grip assemblies.

4. The combination of claim 3 wherein said tension member is flexible, an elongated stationary member, said tension member being connected to said stationary member and disposed with its opposite end portions generally paralleling each other and extending outwardly from said stationary member with said hand grip assemblies spaced apart.

5. The combination of claim 1 wherein said hand grip assembly includes a pair of hand grip members secured to opposite end portions of said tension member, said abutment surface means including portions thereof spaced slightly from both hand grip assemblies, said tension member being rigid.

6. The combination of claim 1 wherein said hand grip assembly includes a pair of hand grip members, a pair of tension members including one pair of corresponding ends to which said hand grip members are secured and a pair of resilient means securing said tension member to whose opposite ends the other pair of corresponding ends of said tension members are secured, said anchor member being adapted to rest upon the floor in position extending between the lower ends of a pair of jambs defining a doorway opening therebetween, said abutment surface means comprising the opposing surface portions
5 of said jambs, said hand grip members being disposed between said jambs.

7. The combination of claim 6 wherein said tension members are flexible.

8. The combination of claim 1 wherein said hand grip assembly includes a pair of hand grip members, a pair of tension members including one pair of corresponding ends to which said hand grip members are respectively secured and said body means comprises a pair of resilient members and an elongated anchor member to whose opposite ends the other pair of corresponding ends of said tension members are respectively secured.

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