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2,590,951

ELASTIC CORD EXERCISER

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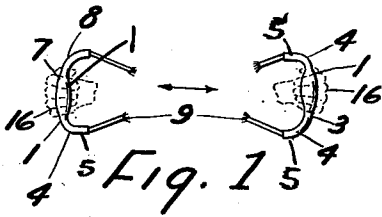


Fig. 1

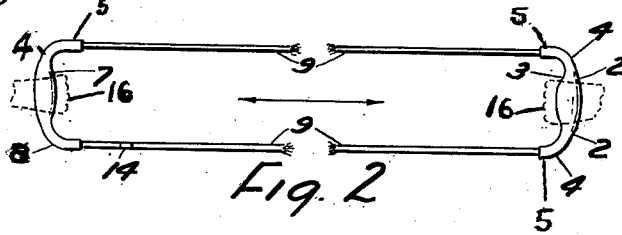


Fig. 2

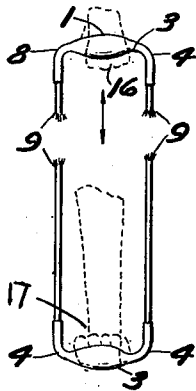


Fig. 3

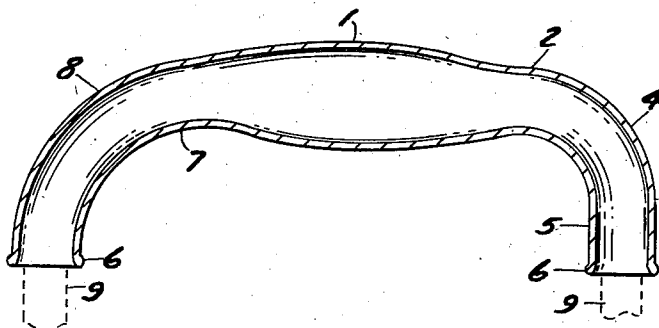


Fig. 4

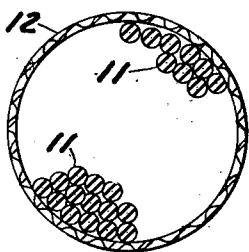


Fig. 5

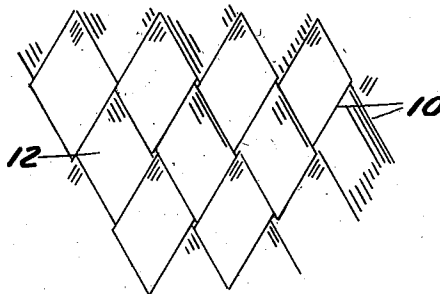


Fig. 6



Fig. 7

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UNITED STATES PATENT OFFICE

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ELASTIC CORD EXERCISER

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1 Claim. (Cl. 272-82)

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This invention relates to muscular exercising, especially in physique upbuilding, as for limb use in hospital or home service, whether or not the patient or user be prone, sitting up or standing erect.

This invention has utility when incorporated in grip or foot engageable seats, provided with distensible connection of flexibility readily to conform to varied start positions from which arm pull or foot thrust may be initiated. It is up to the operator in carrying thru the extent of pull or thrust, the time interval for such connection lengthening, as well as the frequency in the direct succession of pullings and thrustings, the wide range of directions to place into use different muscles. Also time intervals should be adopted to the end that the total may be constructive, instead of health undermining as from fatigue excess.

Referring to the drawings:

Fig. 1 is a front elevation of an embodiment of the unit, wherein the distensible connection or elastic cord is crossed by twisting one grip or handle 180 degrees relatively to the other grip, the medial portions of the cord being broken away;

Fig. 2 is a straight pull of the unit, but untwisted as to the showing in Fig. 1, which may be between different persons, as distinguished from Fig. 1 as over chest or across the back;

Fig. 3 is a front view, with dotted line showing of foot thrust as opposed by hand grasp of the unit in distension thereof;

Fig. 4 is an enlarged view, in section of one of the grips, being the unsymmetrical one thereof for the cord progress control;

Fig. 5 is an enlarged view in section of the fabric jacketed bundle of elastic elements, such as rubber bands;

Fig. 6 is a fragment, much enlarged, of the flat clusters of threads in flat strands as simulating basket weave to respond to the rubber core extension; and

Fig. 7 is a broken away detail of a splice for the cord and suitable for progressing thru the grips.

In the carrying out of the invention herein disclosed, there is adopted tubular grip structure elements comprising a medial slightly enlarged grasp portion for a handle 1. At opposite ends thereof are somewhat minor internal diameter portions 2. One of the grips 3 has symmetrical, approximately 90° arc portions 4 to short straight ends 5 having bead rims 6 to clear of occasion for abrasion. The companion or other grip 7

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has a similar handle 1, portions 2, 4, 5, 6, one way from its medial handle 1. In the other direction, an approximately 90° arc portion or elbow 8 is provided with a different radius than the portions 4. As adopted herein, the radius of the arc portion 8 is greater. The portion 8 ends in a trim or bead 6.

Steel tubing of say 5/8" outside diameter and of light gage has worked out acceptably. Threaded thru the tubular grips 3, 7, is a distensible endless connector 9, say in the range of 1/4" to 3/8" in diameter. Flat fabric strands 10 in a sort of basket weave pattern provide a readily extensible jacket or coating for parallel rubber elements 11 forming a snugly held group housed by a jacket 12 of the woven strands 10.

A coupling or splice is provided at abrupt ends 13 of the extensible or readily stretchable cord 9. A short tube 14 of overall length in the range of twice the diameter of the cord 9 is sufficiently short as not to clog in the tubular grips 3, 7, even at the bends 4, 8. Claw ends 15 are press-embedded to crowd inward the jacket 12 with the ends 13 of the jacket 12 and the elements 11 abutting.

Tubing sections 8" long adopted for the respective grips 3, 7, and with 4'6" length for the cord 9, there is inert overall length for the unit of about 21", while its weight is hardly 1/2#. A pull of 12# may effect 1' further spacing between the grips 3, 7; 2' for 18#; 3' for 24#. With 1 5/8" radius for the bends 4 and slightly over 2" radius for the bend 8, ten stretches for exercising with the unit have caused the splice section 14 to progress as much as 1/2". This means that the tension wear may be automatically distributed thruout the length of the cord, thereby contributing materially to the useful life of the unit.

The parallel elements 11 of rubber-band-like character, when in a cluster or bundle as enveloped by the fabric jacket 12, may be operated over extended periods of time, with extension somewhat beyond twice the dormant length therefor and within the elastic limit for as many as one thousand stretch operations with the overall length increase noted as only 1/8" for a length of 4'6" as the initial unstretched length therefor.

The patient, athlete, or one seeking to build up physique as well as overcome hindrances from physical retarding influences, may have hands 16 (Fig. 1) firmly take hold of the grips 3, 7, and holding such forward with arms outstretched at about the shoulder position, exert

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muscular strength in repeating out-movement, or away from each other for the hands, symmetrically. These out-movements as synchronized with breathing, helpfully react to improve lung capacity. When there be the twist for the cord 9 (Fig. 1) there is a supplemental exercise or strain on the wrists of the individual, as well as at the biceps and chest muscles.

Whether twisted or straight reaches for the cord 9 between, the grips, other body muscles may be developed, as to the pulls. Such may be with one hand held and the other moving away therefrom. When the individual be in bed or sitting, there is not quite such a wide range open for adopting the exercises. One standing erect, may have arms directed upward or downward from the shoulders. The cord regions may be across or spaced away from the exerciser's back. As so far considered the arms and various muscles of the body are brought into play. The working values may extend to other limbs than the arms, for a foot 17 may be thrust into a grip-engaging position, with a hand 16 at the other grip. For this exercise, the thigh muscles may be brought into action, with the hand held, or the thrust requirement more or less built up by draw or pull action at the hand or forearm.

With the cord 9 untwisted, there is clearway for knee or elbow. The slight enlargements for the grips 1 provide grasping at spacing from the reaches of the cord 9, contributing to ease for use.

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What is claimed and it is desired to secure by Letters Patent is:

An exerciser comprising elastic elements, an extensible jacket therefor to form an endless cylindrical bundle, a pair of tubular hand grips thru which the bundle extends with the jacket spacing the elements from the grips, said grips being of general U-shape with a grasp enlargement at the cross over for the U-sufficient to centralize the band at grasping to be clear of the legs of the U, said legs being spaced to provide arm clearance to swing freely between reaches of the elastic body upon stretching thereof, one of said U-grips having its elbow arc connection to its cross over different in arc from the other elbow of said same grip, coacting thereby to differentiate between the tension action of the reaches upon stretchings of the body to respond upon tension release for step by step lineal progress of the body thru the respective grips in uniformly subjecting the body to wear action thruout its length.

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