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VARIABLE FRICTION TYPE EXERCISING DEVICE

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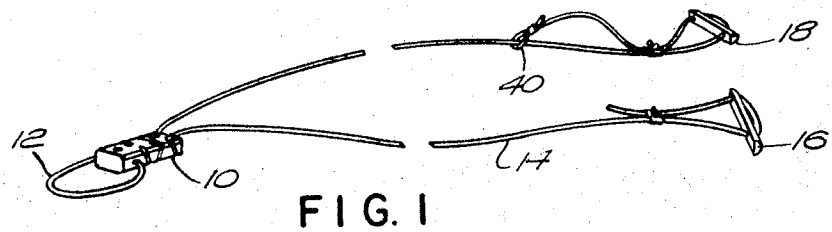


FIG. 1

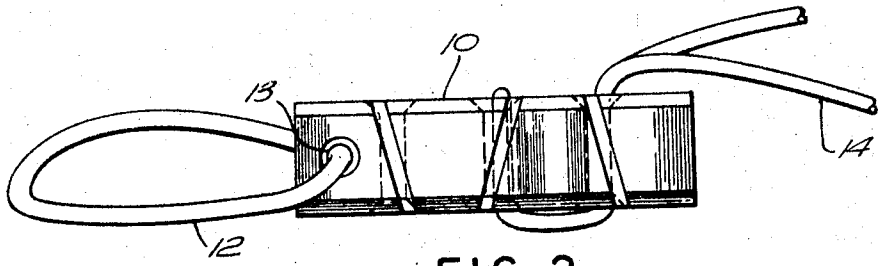


FIG. 2

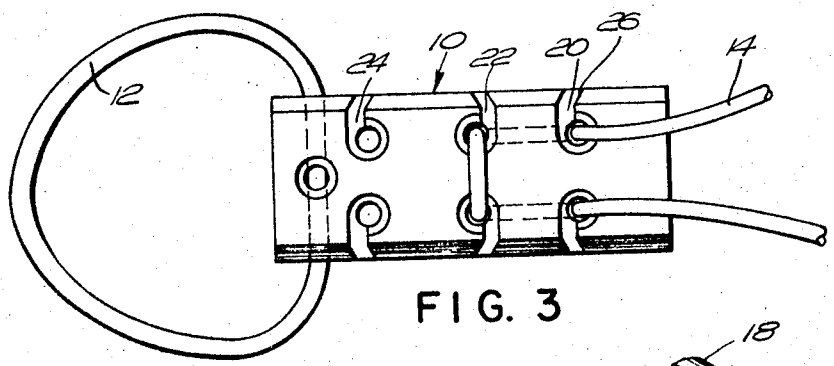


FIG. 3



FIG. 5

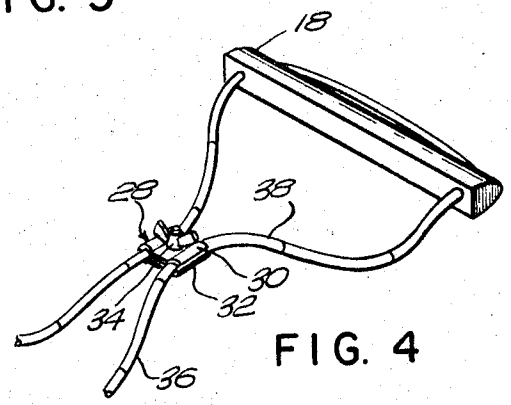


FIG. 4

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VARIABLE FRICTION TYPE EXERCISING DEVICE

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ABSTRACT OF THE DISCLOSURE

A device is provided for performing isometric exercises. The device comprises a block having sets of cooperating grooves in which a length of cord is slidably received in various selected arrangements. Depending upon the selection of grooves in which the cord is mounted the frictional resistance against pulling on the end of the cord is increased or decreased as desired. Means are provided for securing the block during the exercises.

This invention relates generally to exercising equipment and more particularly is directed towards a new and improved device for use in performing a variety of physical exercises.

There are a wide variety of exercising devices now available for use in individual or group exercising programs. Most exercising equipment, however, is relatively expensive often heavy and restricted as to the type of exercises which may be performed with it. For example, weight lifting equipment generally requires a good deal of storage space and involves a relatively high investment. Rowing machines, bicycling machines and similar apparatus serve but a single function and are not readily transportable. While there are available portable exercising devices employing variable resistance pull cords for use in performing isometric exercises, these also are relatively expensive and somewhat difficult to manufacture.

Accordingly, it is a general object of the present invention to provide improvements in exercising devices.

A more particular object of this invention is to provide a simple, low cost exercising device that is readily adjustable, compact for easy carrying, versatile for performing a variety of exercises and adjustable for selectively increasing or decreasing the effort required to perform the exercises.

More particularly, this invention features an exercising device, comprising a block formed with a plurality of re-entrant openings, a cord fastened to one end of the block for attachment to a stationary object and an elongated pull cord adapted to be wrapped over the block in the re-entrant openings in any one of a variety of courses according to the degree of resistance to cord pull desired. The elongated cord is provided with handles at its free ends, one of these handles being adjustably connected for selectively increasing or decreasing the effective length of the cord. To use the exerciser, the operator will restrain the block by attaching the shorter cord to his foot, for example, and pull on the free ends of the cords back and forth so that the cord will be pulled through the block openings with the friction developed thereby providing resistance to the pull.

However, these and other features of the invention, along with further objects and advantages thereof, will become more fully apparent from the following detailed description of a preferred embodiment of the invention, with reference being made to the accompanying drawings in which:

FIG. 1 is a view in perspective of an exercising device made according to the invention,

FIG. 2 is a view in side elevation of the block portion on an enlarged scale showing the pull cord in one selected arrangement,

FIG. 3 is a top-plan view thereof,

FIG. 4 is a view in perspective of the adjustable handle portion of the device, and,

FIG. 5 is a view in perspective showing one of many exercises that may be performed with the device.

Referring now to the drawings, the reference character **10** generally indicates a one-piece block which may be shaped from wood, molded from plastic, or otherwise fabricated from any suitable material. In association with the block **10** is a relatively short closed loop cord **12** on the order of 24 inches or so in length and connected to the block by passing through a transverse opening **14** formed through the left-hand end of the block as viewed in FIGS. 1, 2 and 3. Also in association with the block is an elongated pull cord **14** on the order of eight feet or so in length with the free ends thereof looped through handles **16** and **18**.

Block **10**, which may be on the order of 6" or so in length by 1½" in thickness and 2½" in width, is formed with a plurality of pairs of re-entrant openings **20**, **22** and **24** along opposite faces of the block. In the illustrated embodiment there are shown three pairs of openings in parallel pairs, one of each pair on either side of the block and preferably extending diagonally through the block as best shown in FIG. 2. The several pairs of openings alternate in diagonal direction between adjacent pairs.

The recessed inner portion of each opening is preferably circular in cross-section with the top and bottom portions thereof being countersunk in the top and bottom faces of the block to eliminate sharp edges which may cut or abrade the cord. Between the circular cross-section inner portion of each opening and the outer side face of the block is a relatively restricted slot entrance **26** whereby the cord **14** may be readily laid into or removed from the opening. Each slot is so positioned with respect to the inner portion of the opening and the countersunk ends that once the cord is laid in the selected openings, the cord will not pull free of the block in normal use and can be removed only intentionally by slacking off on the cord and guiding it out through the slot. In this fashion, the device may be used in a variety of exercising positions without the cord accidentally disengaging the block.

In practice, the mid-portion of a cord may be connected to the block in any one of a variety of courses. In the embodiment shown in FIGS. 2 and 3 the cord is laid into the pairs of slots **20** and **22**, coming in from the top of the block, running down through the openings **20** to the bottom of the block, rearwardly to the openings **22**, and then upwardly and over the top of the block. Thus, one pulling on either free end of the cord **14** will encounter a certain amount of resistance occasioned by the frictional engagement between the cord and the block.

This resistance may be selectively increased or decreased by changing the course of the cord about the block. For example, the resistance may be decreased by disengaging the cord and re-engaging it so that it is laid only into the slots **20** for a minmum amount of resistance. A miximum amount of resistance may be obtained by utilizing the last pair of openings **24** in addition to the first two pairs so that the cord is roven through all of the openings. The resistance may also be varied by using the first and last pair of openings **20** and **24** which would provide somewhat less resistance than the combination shown in FIG. 2 by reason of the direction of the diagonal openings. In any event, it will be seen that resistance available may be readily varied in a quick and easy fashion by merely disengaging the cord from the slot openings and then laying it in other selected slot openings according to the desired course.

In order to change the effective length of the cord **14** an adjustable clamp **28** is provided for the free end of the cord connecting handle **18**. The clamp **28** comprises a pair of matching plates **30** and **32** formed with gripping end portions clamped over the two sections of cord as shown in FIG. 4 and held together by a screw and wing nut **34** or the like. In this fashion the effective length of the cord may be increased or decreased by merely loosening the clamp and pulling the cord through to the desired length. In this connection the cord **14** may be provided with a number of distinctive color bands **36** and **38**, etc., along the free end of the cord, each band of color being different so that the user may quickly locate the position of the adjustable handle to a desired length for a particular exercise.

The adjustable free end of the cord may be formed with a loop **40** through which the cord passes, as shown best in FIG. 1, in order to keep the loose end from interfering with the operation of the device.

The device may be used for a variety of different exercises and for simulating many of the common types of athletic actions. For example, the block may be held in position by the foot engaging the looped cord **12** and by shortening up on the elongated pull cord **14** weight lifting operations can be simulated by the user grabbing the handles and alternately pulling in one direction and then the other. The friction between the cord and the block provides a preselected resistance equivalent to the effort required to lift a weight. Other arrangements may include placing the feet in the handles and securing the block to a fixture or holding it in the hand and then working the cord back and forth in the manner of pumping a bicycle. Numerous other exercises may be performed with the device.

The device, by reason of its simplicity, may be manufactured at extremely low cost and because of its small size may be readily carried about in a brief case, for example, for use when travelling. In practice, the cord may be made of nylon or the like to minimize wear due to abrasion.

While the invention has been described with particular reference to the illustrated embodiment, it will be understood that numerous modifications thereto will appear to those skilled in the art. Accordingly, the above description and accompanying drawings should be taken as illustrative of the invention and not in a limiting sense.

Having thus described the invention, what I claim and desire to obtain by Letters Patent of the United States is:

1. An exercising device, comprising

(a) a flexible elongated cord,

(b) a rigid member formed with a plurality of grooves adapted to receive said cord, and

(c) means for restraining said member against pulling of the free ends of said cord,

(d) said member being formed with a pair of substantially parallel faces on opposite sides thereof and said grooves being formed in pairs spaced along said faces, each pair comprised of two parallel grooves, one on each face.

2. An exercising device according to claim **1** wherein said pairs of grooves extend in alternating diagonal directions across said faces.

3. An exercising device according to claim **1** wherein each of said grooves in cross-section is formed with curved inner walls and a restricted slot opening along said face slightly offset from said inner walls but in communication therewith.

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