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EXERCISING DEVICE FOR ROCKING THE FOOT TO EXERCISE THE LOWER LEG

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FIG. 1

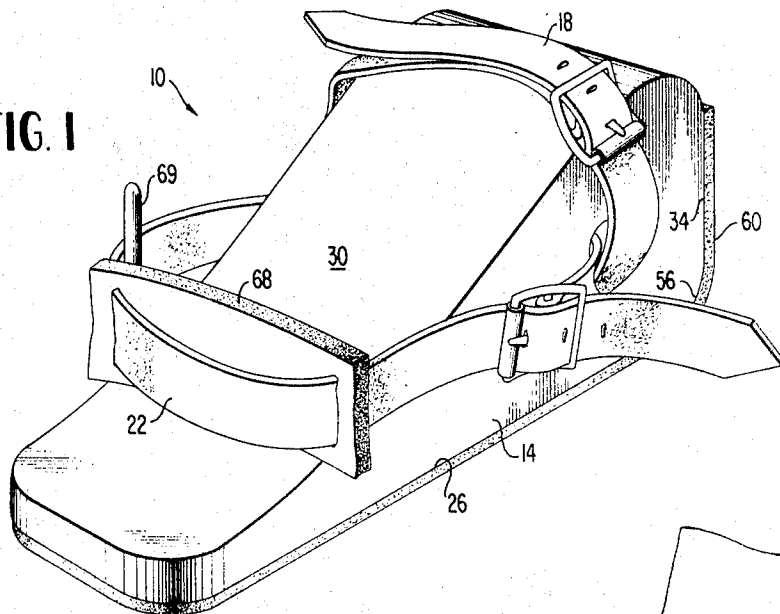


FIG. 2

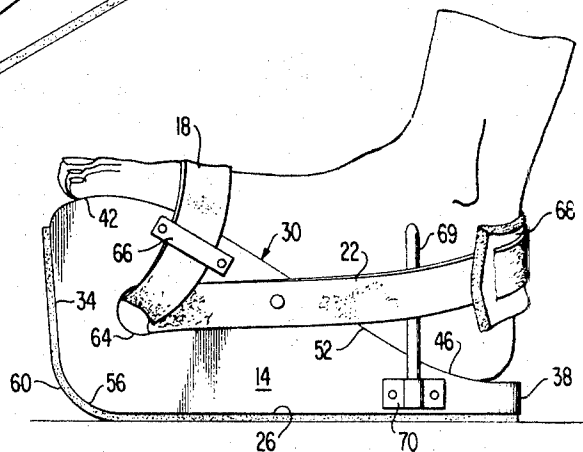
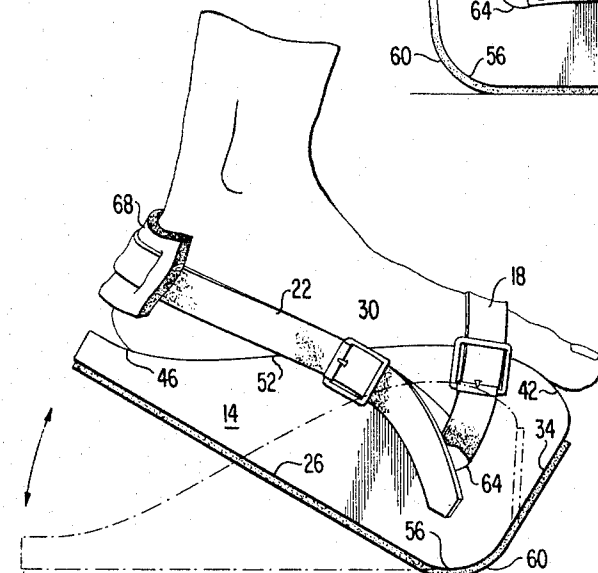


FIG. 3



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EXERCISING DEVICE FOR ROCKING THE FOOT TO EXERCISE THE LOWER LEG

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7 Claims

ABSTRACT OF THE DISCLOSURE

A foot and calf exercising device that is releasably held on the foot by straps. The device rests on the floor and the exerciser's foot engages the top surface thereof so that the ball of the foot is higher than the heel. The higher front and bottom of the device join in a curve so that the device can be rocked forwardly and backwardly to stretch and release the muscles of the lower leg.

BACKGROUND OF THE INVENTION

This invention relates to exercising devices and more particularly to a novel device than can be used to exercise the muscles of the foot and lower leg including the calf.

It is often desired to exercise the muscles of the lower leg to the exclusion of all other muscles in the body. This is particularly true when the muscles have atrophied as a result of disease, sustained inactivity or inadequate activity. Devices for exercising the calf muscles and the muscles of the lower leg shown in the prior art are relatively complex comprising many parts that are specially joined together with ball and socket joints, electric heaters and other complex mechanisms making them generally quite expensive and yet not wholly effective at best.

The invention disclosed herein provides an apparatus for exercising the muscles of the foot and lower leg and particularly the calf by inducing the exerciser to shift from a position where the calf muscles are stretched or tensioned to where they are released. Initially, the device positions the ball of the foot higher than the heel so that, in an upright standing position, the muscles in the back of the lower portion of the leg are stretched. When the device is rocked forwardly, the heel is raised above the level of the ball of the foot and the muscles are contracted. This alternate extension and contraction of these muscles results in improved muscle tone and muscle size. In addition, by the use of this device the strength of the ankles is increased and the foot muscles are flexed and strengthened.

SUMMARY OF THE INVENTION

Generally, the invention comprises a foot exerciser with a bottom surface adapted to rest on a supporting floor and an upper surface including a forward convex portion for engaging the ball of the foot followed by a concave portion, lower than the convex portion, for engaging the heel of the foot. The device also includes a front wall interconnecting the upper and bottom surfaces that is rounded at its juncture with the bottom surface so that the device can be readily rocked about the rounded juncture to raise the heel above the toe. Adjustable straps are provided to engage over the forward portion of the foot

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and around behind the heel of the foot to insure that the device is securely mounted on the foot.

It is a primary object of this invention to provide a device for exercising the muscles of the lower leg in building up the size and strength of the calf.

It is still a further object of this invention to provide an exercising device that is securely strapped on the foot for ease of use in performing the desired exercises.

It is a further object of this invention to provide an exercising device that causes the ball of the foot to be disposed above the heel in the initial upstanding position and then is capable of being rocked so that the heel is then above the ball so that the muscles of the leg are initially stretched and then contracted or released.

Further objects and advantages of the invention will become apparent upon a detailed description thereof with reference to the accompanying drawing wherein:

BRIEF DESCRIPTION OF THE DRAWINGS

FIGURE 1 is a perspective view of the device of the subject invention.

FIGURE 2 is a side view of the device shown in FIGURE 1 illustrating an exerciser's foot strapped therein.

FIGURE 3 is a side view of the device shown in FIGURE 1 showing the device rocked by the exerciser into an intermediate position in carrying out the desired exercises.

DESCRIPTION OF A PREFERRED EMBODIMENT

In FIGURE 1 the exercising device shown generally at 10 comprises a generally triangular shaped block 14 which can be made of wood, plastic, metal or any other convenient material. Associated with the block are straps 18 and 22 for respectively holding the ball of the foot and the heel in engagement with the upper surface of the block. The straps 18 and 22 can be provided with buckles or any suitable fastening means to render them adjustable to accommodate different foot sizes of individual exercisers.

In FIGURE 2, it is seen that the block 14 has a relatively flat bottom and a sloped upper surface 30. The relatively flat bottom can be defined by at least three spaced points in non-linear relation for stably supporting the bottom on a flat surface. A front wall 34 connects the upper surface to the bottom 26 of the device while a relatively short rear wall 38 connects the aforementioned surfaces at the back of the device.

Upper surface 30 is provided with a convex portion 42 adjacent the front wall 34 to support the ball of the foot and the toes. This convex portion merges rearwardly into a concave portion 46 at the rear of block 14 which supports the heel of the foot. The portion of surface 30 intermediate convex surface 42 and concave surface 46 is relatively flat at 52 so that upper surface 30 comprises a smooth continuous generally S curve for the support of the foot. This curve is formed to accommodate the ball of the foot and the toe at one end and the heel at the other end. It is to be noted that the ball of the foot is substantially higher than the heel in the upstanding position of the exerciser shown in FIGURE 2 so that when the device is worn the muscles in the back of the leg are stretched substantially.

The juncture of the bottom surface 26 and the front wall 34 is rounded as shown at 56 so that the device may be easily rocked thereabout in performing the exercises.

In order to assure that the block 14 will not slip on the

floor, a strip of non-slip material 60 such as rubber or the like is employed to cover front wall 34, the rounded juncture 56 between the bottom and the front wall, and the bottom 26 of the device, or said surfaces have a non-slip property derived from the material of which block 14 is made. In another form, this non-slip property could be obtained by scoring or knurling wall 34, juncture 56 and bottom 26 so that they present a relatively roughened surface adapted to frictionally engage the floor.

An opening 64 extending through the block 14, generally disposed beneath the convex portion 42, receives straps 18 and 22. If desired, the straps can be provided with cushions such as that shown at 68 on strap 22 so that they will not bind the foot while the device is being used. It should be understood that opening 64 and straps 18 and 22 are merely a preferred form of securing the foot to the exercising device. A retaining plate 66 can be fixed to either side of block 14 in clamping engagement with strap 18 to restrain against the tendency of the toe of the foot to slip laterally off the top surface of the block. It should be apparent to those skilled in the art that other means could be provided for securing the foot to the device such as laces or straps fastened to various portions along the block 14 or a shoe-like form connected to top surface 30, and that the surfaces of the front, rear, and side walls can be sculptured in a variety of forms extending into the subsurface for structural and aesthetic variations.

If the user's toes cannot properly grip the convex surface 42, the foot will tend to slide about the big toe so that the heel tends to slip laterally off the block. This tendency to slide can be overcome by suitable means disposed on the sides of the block. An example of such a means is elongated pin 69 fixed to the side of block 14 adjacent to concave surface 46 by a retaining plate 70. The pin 69 is of sufficient height to allow strap 22 to pass outside of it and thus to modify its direction of pull and to thereby prevent the heel of the user from sliding laterally off surface 46. If desired, another retaining plate can be provided opposite the first retaining plate 66 and another pin can be provided opposite the first pin.

In exercising in the preferred manner two of the devices are used with one block strapped to each foot. Both feet are initially disposed as shown in FIGURE 2 wherein the straps 18 and 22 are adjusted to hold the foot in proper position on the block and in firm engagement with top surface 30. The straps can be fastened after the foot is placed on the block or the block can be slipped onto the foot after a prior adjustment of the straps. While the straps should be secure, they should not subject the foot to uncomfortable pressure. The ball of the foot is disposed well above the heel so that the muscles in the back of the leg are stretched. The device is operated by rocking forwardly on rounded surface 56 until the desired contraction of the back muscles is achieved. In FIGURE 3, the device is shown rocked to an intermediate position wherein the heel has risen to substantially the same horizontal plane as the toe and the muscles in the back of the leg are disposed in the position that they would be in a normal standing position. Of course, if desired or if needed for therapeutic or general muscle building reasons, the device could be rotated forwardly about rounded section 56 until the front wall portion 34 were to approach a position of resting on the ground.

With the two pin and two plate construction, a single exerciser can be used to exercise either foot by selectively wrapping the strap 22 outside one pin 69 and inside the other. For example, when exercising the right foot, the strap is outside the right pin and inside the left pin, and when exercising the left foot, the strap is outside the left pin and inside the right pin. In such exercising, the single device is affixed to the particular foot and calf to be strengthened. Then in use, the person rests the other foot on top of the foot wearing the device while the device is rocked back and forth in performing the exercising. In this manner, the foot wearing the device carries the en-

tire weight of the user; thus, that foot gets maximum benefit from the exercise. Of course, using either one or two of the exercising devices can be aided, if desired, by supporting the body upright by grasping an adjacent table, wall or other support.

The device may conveniently be made in a variety of different maximum toe heights. Then a beginner might start with a device having a relatively low toe height for the device and work up to models of the device providing a greater toe height as the exerciser's proficiency and muscle development permitted the greater muscle flexing. Normally the length of even the different toe height models would be maintained the same within a foot size group and different foot lengths of the users would simply be accommodated by taking up or letting out on the straps for fastening the foot to the device. However, to accommodate unusually long or short foot lengths, special devices of comparable length would be required.

Even using a high toe height model of the device, greater muscle tension or elongation can be obtained by leaning forward to a wall or table while still pressing the heels on the devices down to the floor following each forward rock on the devices.

By use of the device of this invention basically, a build-up in the strength and size of the calves results. However, there is some therapeutic benefit through use of this device. Used by women, it is advantageous in relieving strain created by wearing, walking and standing in high heels for extended periods of time. Further, use of the device of this invention offers some strengthening of the instep of the foot and strengthens the foot in general. Such use would also generally have the effect of thinning down the ankle.

By utilizing an exercising device such as that described regularly every day for a short while and merely rocking back and forth about the rounded juncture 56 the muscles in the lower leg, particularly the calf, as well as the foot muscles will be subjected to regular alternate extension and contraction, promoting an increase in the blood supply thereto and resulting in increased muscle size and muscle tone.

While the invention has been described with particular reference to building up the muscles of the foot, lower leg and calf, it is to be understood that various changes and modifications may be made in the preferred embodiment thereof by those skilled in the art to accomplish muscle buildup without departing from the concept of the invention as disclosed herein.

What is claimed is:

1. A foot and calf exerciser comprising:

a member including a bottom surface defined by at least three spaced points in non-linear relation, for stably resting on a flat support and an upper surface means for supporting a foot so that the ball thereof is higher than the heel thereof when said bottom surface is resting on the support;

a front wall joining said bottom surface and said upper surface; the juncture of said front wall and said bottom surface being rounded so said member can be rocked thereabout; and

means on said member for securing the foot of the user of the exerciser in engagement with said upper surface means as said member is rocked.

2. An exerciser as defined in claim 1 wherein said upper surface means includes a convex surface portion for supporting the ball of the foot, a concave surface portion for engaging the heel of the foot and a relatively flat inclined portion interconnecting said convex and concave portions.

3. An exerciser as defined in claim 2 wherein said securing means includes first strap means for holding the ball of the foot in engagement with said convex surface portion and second strap means for holding the heel of the foot in engagement with said concave surface portion.

4. An exerciser as defined in claim 3 wherein the connection between said first and second strap means and said member is disposed below said convex surface portion.

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5. An exerciser as defined in claim 1 wherein frictional means is provided on said bottom surface, said juncture and said wall to facilitate the rocking of said member about said juncture.

6. An exerciser as defined in claim 5 wherein said frictional means includes a non-slip material mounted on said bottom surface, said juncture and said wall.

7. An exerciser as defined in claim 3 wherein said securing means further includes at least one retaining means adapted to cooperate with at least one of said straps to limit lateral sliding movement of the foot on said upper surface.

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U.S. Cl. X.R.

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