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(54) **APPARATUS AND METHOD FOR EXERCISING CALF AND THIGH MUSCLES**

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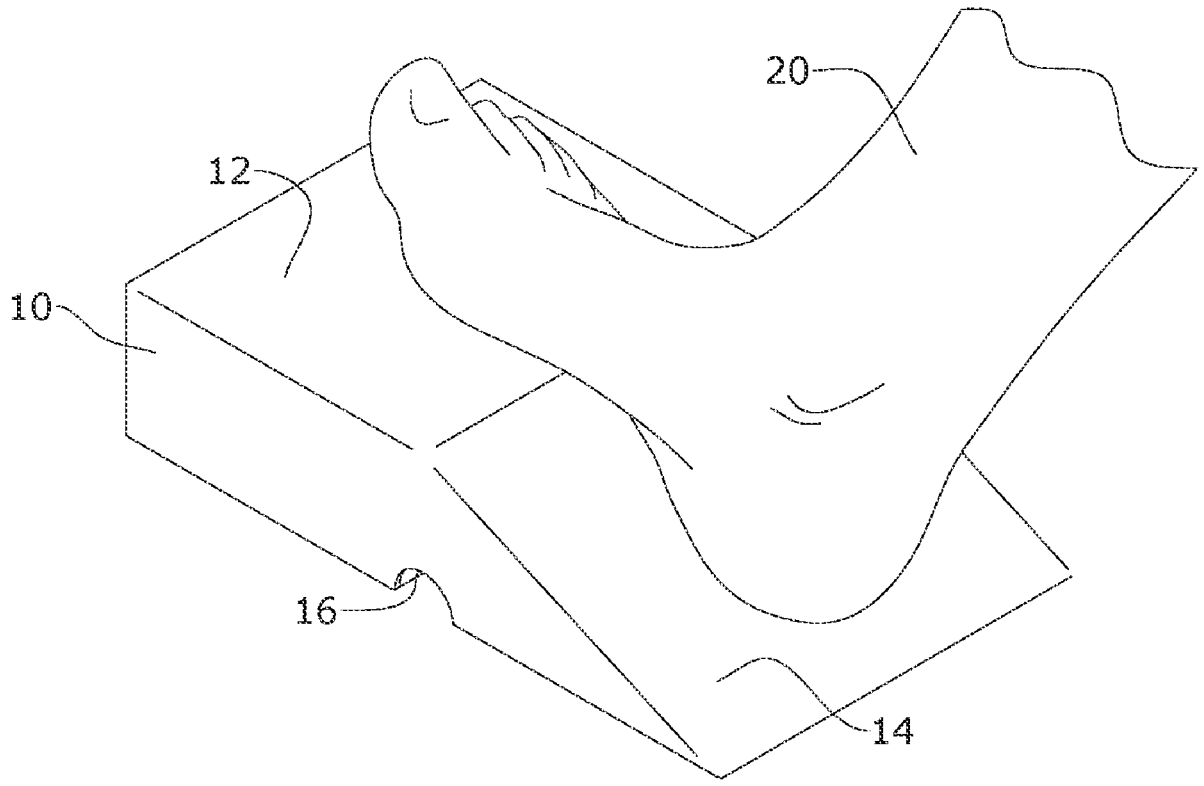
(57) **ABSTRACT**

An exercise step and method of exercising a user's legs is disclosed. The exercise step includes a main body which has a substantially planar and horizontally oriented upper wall and a sloped wall extending from bottommost surface of the exercise step to the upper wall. In use, a user steps on the sloped wall with a heel portion of his or her foot and raises the heel portion such that a sole portion of his or her foot is supported by the upper wall.



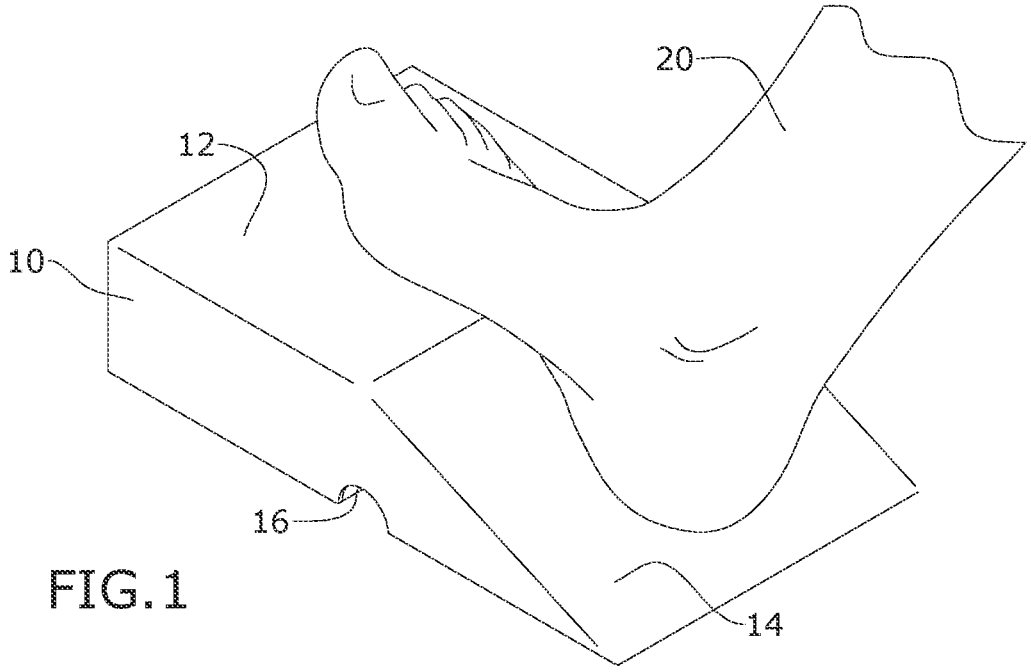


FIG. 1

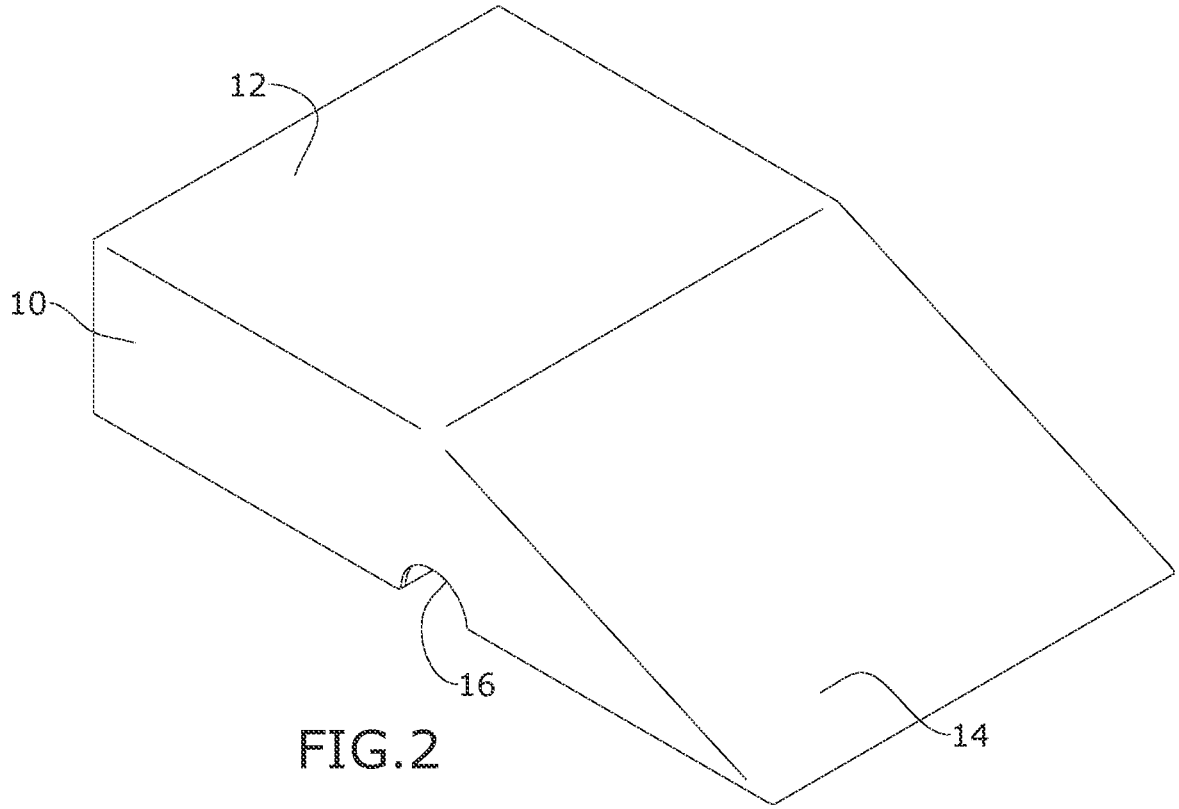


FIG. 2

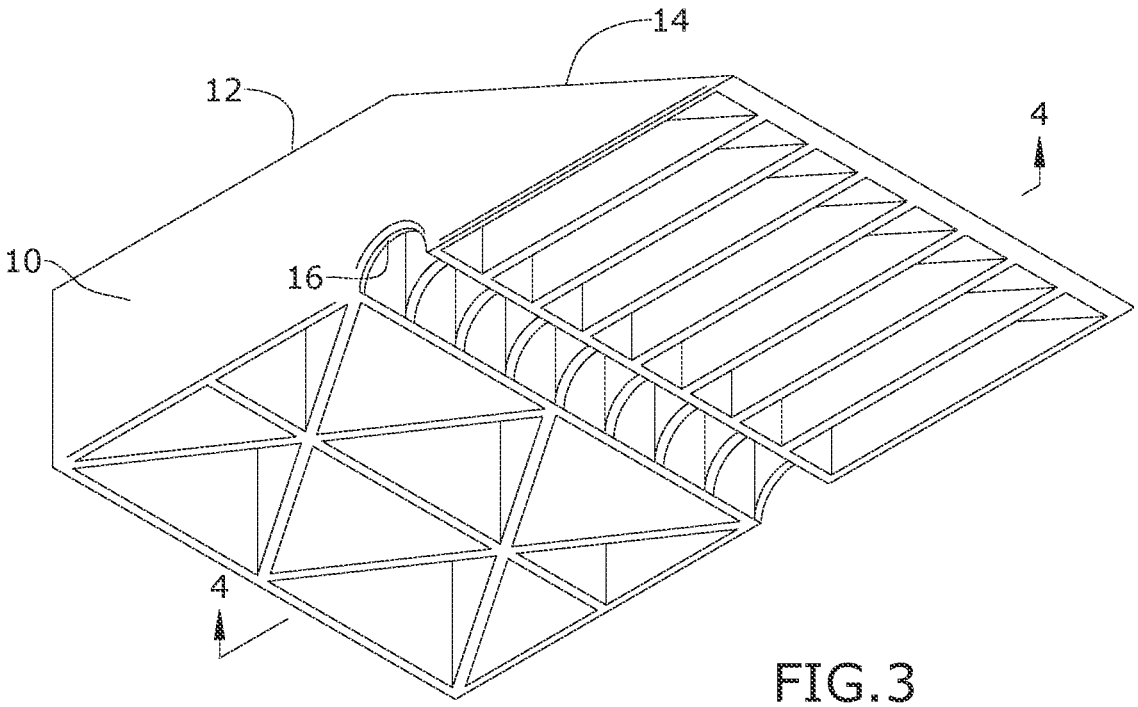


FIG.3

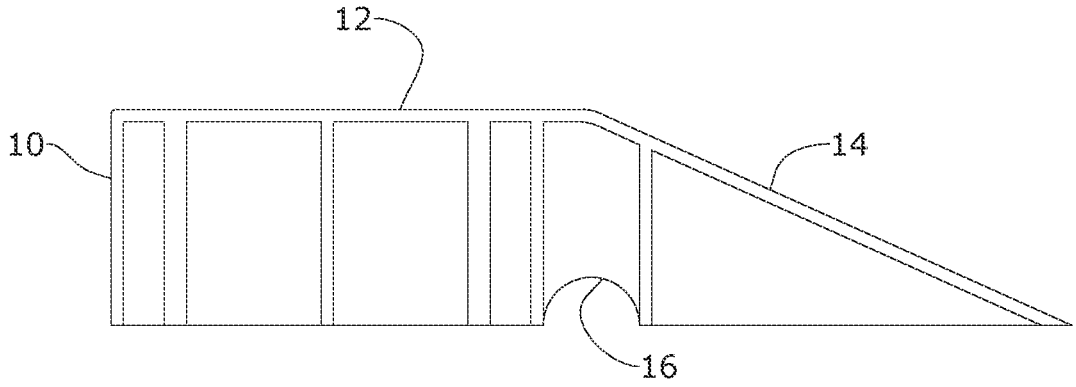


FIG.4

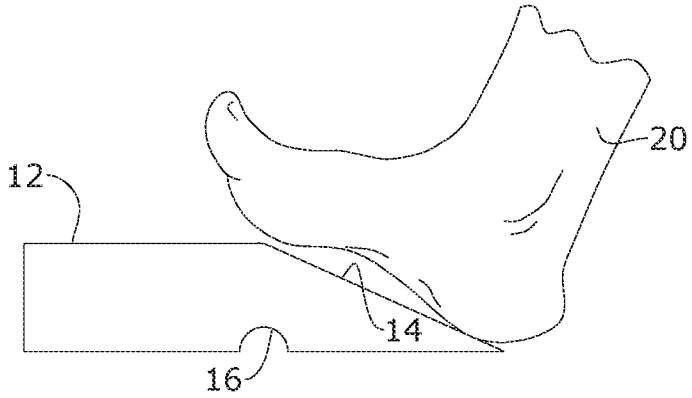


FIG.5A

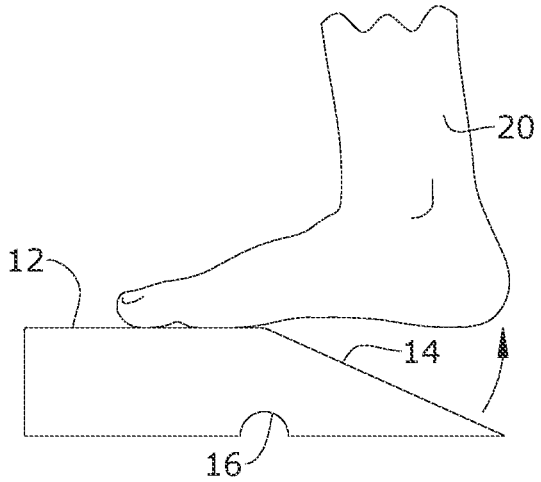


FIG.5B

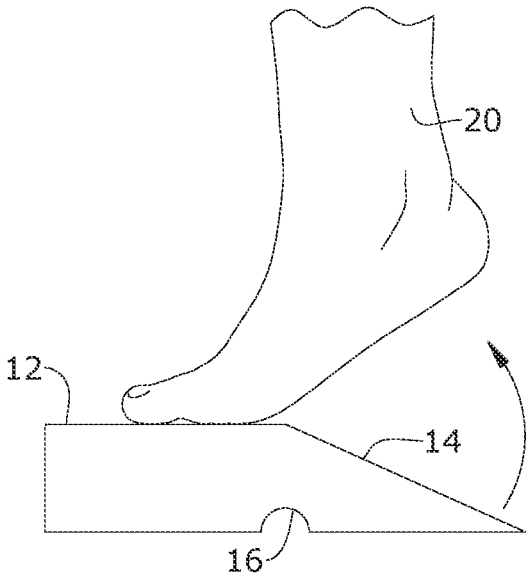


FIG.5C

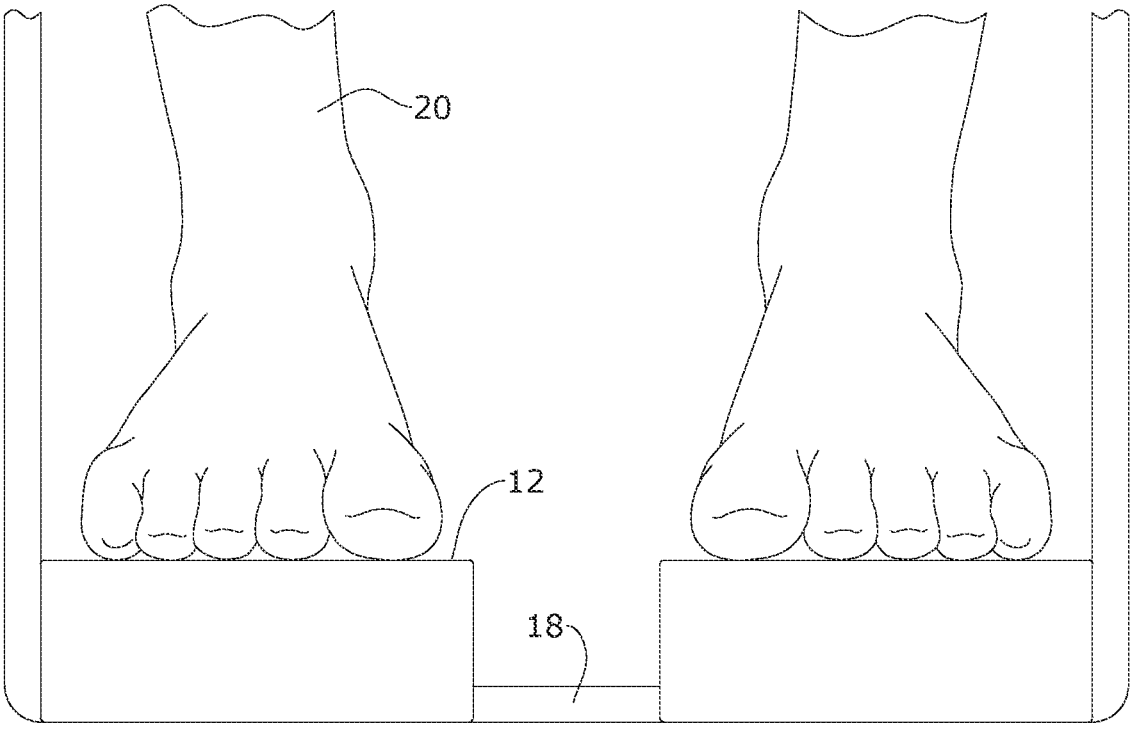


FIG.6

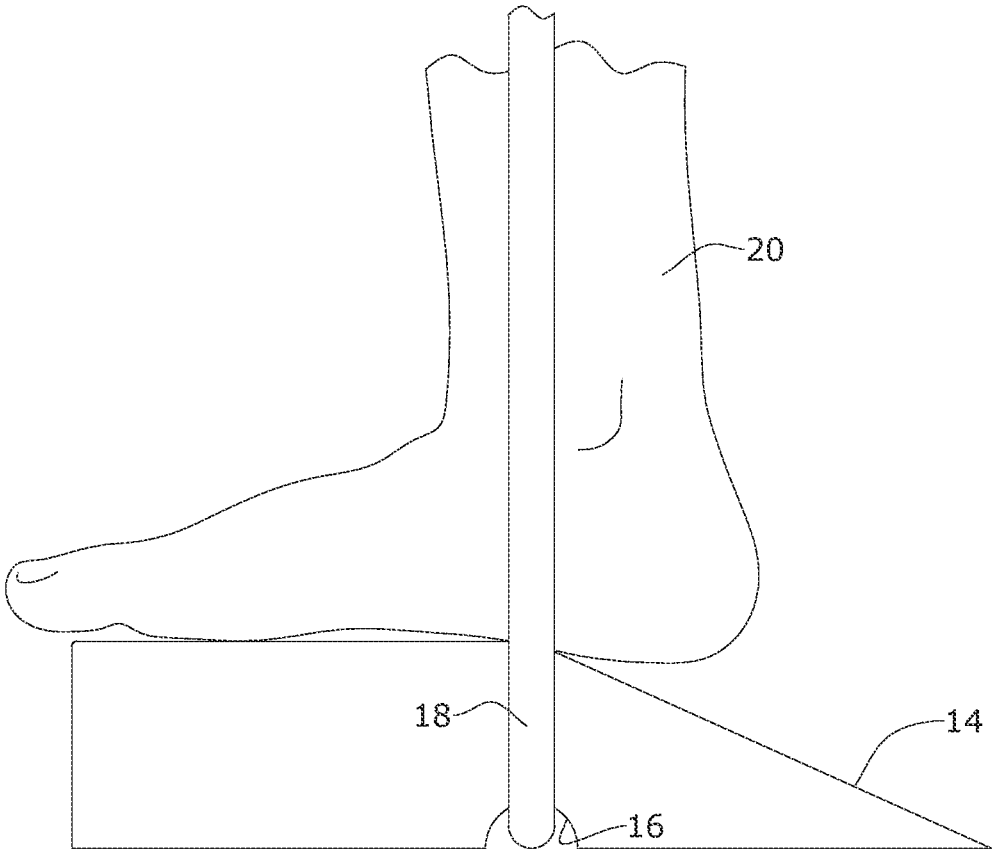


FIG.7

APPARATUS AND METHOD FOR EXERCISING CALF AND THIGH MUSCLES

CROSS-REFERENCE TO RELATED APPLICATION

[0001] This application claims the benefit of priority of U.S. provisional application No. 63/200,278, filed Feb. 26, 2021, the contents of which are herein incorporated by reference.

BACKGROUND OF THE INVENTION

[0002] The present invention relates to exercise equipment and, more particularly, to an exercise step that helps exercise the calf muscles and thigh muscles in a user's legs.

[0003] Many forms of exercise equipment exist in the fitness industry. However, most of these devices are complex and mechanical in nature (i.e., has moving parts), which often results in them requiring significant space for use and/or are cost-prohibitive for an average user to acquire. Consequently, the overwhelming majority of available exercise equipment is mechanical and exists only in gyms.

[0004] Because this type of equipment is largely left for gym use, users have no viable exercise options for at home, work, or other locations they frequent (besides the gym). No non-mechanical exercise leg equipment exists to specifically target the calf and thigh muscles.

[0005] As can be seen, there is a need for an apparatus and method for non-mechanically exercising calf and thigh muscles, as described herein.

SUMMARY OF THE INVENTION

[0006] In one aspect of the present invention, an exercise step configured for use with leg exercises is disclosed, and comprises: a main body comprising: a substantially planar and horizontally oriented upper wall configured to support a sole portion of a user foot; and a sloped wall extending from a bottommost surface of the exercise step to the upper wall, the sloped wall being configured to support a heel portion of the user foot.

[0007] In another aspect of the present invention, a method of exercising a user's legs is disclosed, with the method comprising the steps of: providing an exercise step comprising a main body, the main body comprising: a substantially planar and horizontally oriented upper wall; and a sloped wall extending from a bottommost surface of the exercise step to the upper wall; stepping on the sloped wall with a heel portion of a user foot; and raising the heel portion such that a sole portion of the user foot is supported by the upper wall.

[0008] These and other features, aspects and advantages of the present invention will become better understood with reference to the following drawings, description and claims.

BRIEF DESCRIPTION OF THE DRAWINGS

[0009] FIG. **1** is a top perspective view of an embodiment of the present invention, shown in use with a user's leg;

[0010] FIG. **2** is an enlarged top perspective view of the embodiment of the present invention;

[0011] FIG. **3** is a bottom perspective view of the embodiment of the present invention, showing an exemplary ribbing configuration;

[0012] FIG. **4** is a cross-sectional view of the embodiment of the present invention, taken along line **4**-**4** in FIG. **3**;

[0013] FIG. **5**A is a side view of the embodiment of the present invention, shown in use with a user foot in a first, lowered position;

[0014] FIG. **5**B is a side view of the embodiment of the present invention, shown in use with the user foot in a second, horizontal position;

[0015] FIG. **5**C is a side view of the embodiment of the present invention, shown in use with the user foot in a third, raised position;

[0016] FIG. **6** is a front elevation view of two embodiments of the present invention, shown in use with an exercise cord; and

[0017] FIG. **7** is a side elevation view of the two embodiments of the present invention of FIG. **6**, shown in use with the exercise cord.

DETAILED DESCRIPTION OF THE INVENTION

[0018] The following detailed description is of the best currently contemplated modes of carrying out exemplary embodiments of the invention. The description is not to be taken in a limiting sense, but is made merely for the purpose of illustrating the general principles of the invention, since the scope of the invention is best defined by the appended claims.

[0019] Broadly, an embodiment of the present invention provides an exercise step including a main body that comprises: (1) a substantially planar and horizontally oriented upper wall that is configured to support a sole portion of a user foot; and (2) a sloped wall that extends from a bottommost surface of the exercise step to the upper wall, with the sloped wall being configured to support a heel portion of the user foot.

[0020] Making reference to FIGS. **1**-**4**, an exercise step includes a main body **10**. As shown, the main body **10** comprises a step portion **12** and a wedge portion **14** on an upper side thereof. As seen, for example, in FIG. **2**, the step portion **12** is constituted by a substantially planar horizontal upper wall, and the wedge portion **14** is constituted by a sloped wall/surface extending downwardly from the step portion **12**. As can be readily seen, the step portion **12** defines an uppermost surface of the exercise step and functions as a platform for a user **20** to step on during a portion of an exercise, as described in greater detail below. As shown, for example, in FIG. **4**, the horizontal lengths (relative to FIG. **4**) of the step portion **12** and the wedge portion **14** are approximately equal, resulting in a large foot sole landing area (the step portion **12**), which will be described in greater detail with reference to FIGS. **5**A-**5**C. As shown in FIGS. **3**-**4**, the wedge portion **14** terminates at a bottommost surface of the main body, resulting in a smooth, continuous surface for users **20** to place the heels and middle portions of their feet in use, which will also be described in greater detail below.

[0021] As shown in FIG. **3**, a band channel **16** is defined on a bottom side of the wedge **10**, which allows an exercise cord **18** to pass under the main body **10** for optional use by the user **20**. Further, a plurality of ribs are provided on the underside of the exercise step such that overall material may be reduced (as opposed to a solid block of material) while still providing a wedge **10** capable of withstanding large loads (e.g., various weights of users **20** as well as any additional exercise equipment, such as dumbbells, the users **20** may be holding).

[0022] FIGS. **5**A-**5**C show one method of using the exercise step. First, a user **20** (by way of example, a male) places a heel on the wedge portion **14**. Because the wedge portion **14** extends all the way to the ground, in use, the surface in which the user **20** places his heel is ensured to be smooth (i.e., the user **20** won't mistakenly step on any sharp edges). Gradually, the user **20** transfers his weight to the sole portion of his foot by raising his heel, as shown by the counter-clockwise arrow in FIG. **5**B. This movement results in the sole portion (which includes the toes) of his foot engaging the step portion **14**, as shown in FIG. **5**B. The step portion **14** is sized lengthwise such that any length foot can use this exercise step The user can then continue to raise his foot until he is standing on his toes, as shown in FIG. **5**C. The user can then follow the reverse steps to lower his foot and may repeat in an up and down motion.

[0023] Users **20** can use either a single exercise step to exercise a single leg, or two exercise steps to exercise both legs simultaneously, the method of using both simultaneously following the same procedure as described. Further, a resistance band **18** that slides in the band channel **16** at the bottom of the main body **10** may be used to further exercise the calf muscles in combination with the steps described above, as demonstrated, in part, by FIGS. **6**-**7**. Other exercises may be performed with the exercise step described herein, such as squats, to further exercise thigh muscles, in accordance with the present invention.

[0024] A method of making the present invention may include the following. For mass production, injection molding may be used to make the mold and wedge. A mold (such as a steel injection mold) is formed with, for example, a computerized numerical control (CNC) machine. Plastic granules are heated and injected into the steel mold to form a single piece plastic wedge. While other fabrication techniques may be employed, others, such as three-dimensional printing, are unsatisfactory because wedges made by that process would not be of sufficient strength to withstand the weight of an average human body.

[0025] In certain embodiments, the exercise step may consist essentially of the structure described and shown herein. Advantageously, and as mentioned above, embodiments of the present invention are single piece exercise blocks, which simplify the manufacturing process thereof and result in lower material and production costs. Thus, an end user **20** can perform various calf and thigh exercises without the need for expensive, mechanical equipment or a trip to the gym.

[0026] In summary, an embodiment of the present invention is a light, portable piece of exercise equipment specialized to work out the calf/thigh muscles. As discussed above, prior to the present invention, there were no at-home non-mechanical exercise equipment available that concentrate on working out the calf/thigh muscles. Embodiments of the present invention are non-mechanical (so there's no need to worry about a moving part breaking), lightweight, affordable, easy to use, and users can use their own weight(s) and/or resistance bands to work out their leg muscles.

[0027] It should be understood, of course, that the foregoing relates to exemplary embodiments of the invention and that modifications may be made without departing from the spirit and scope of the invention as set forth in the following claims.

[0028] In the following claims, any labelling of elements, limitations, steps, or other parts of a claim (for example, first, second, etc., (a), (b), (c), etc., or (i), (ii), (iii), etc.) is only for purposes of clarity, and are not to be interpreted as suggesting any sort of ordering or precedence of the claim parts so labelled. If any such ordering or precedence is intended, it will be explicitly recited in the claim or, in some instances, it will be implicit or inherent based on the specific content of the claim. To further aid the USPTO and any readers of any patent issued on this application, it is additionally noted that there is no intent any of the appended claims to invoke paragraph (f) of 35 U.S.C. § 112 as it exists on the date of filing hereof unless the words "means for" or "step for" are explicitly used in the particular claim.

What is claimed is:

1. An exercise step configured for use with leg exercises, the exercise step comprising:

a main body comprising:

a substantially planar and horizontally oriented upper wall configured to support a sole portion of a user foot; and

a sloped wall extending from a bottommost surface of the exercise step to the upper wall, the sloped wall being configured to support a heel portion of the user foot.

2. The exercise step of claim **1**, wherein the exercise step is a single-piece part.

3. The exercise step of claim **1**, wherein the upper wall and the sloped wall each have a horizontal length that are approximately equal to one another.

4. The exercise step of claim **1**, wherein the bottommost surface defines a band channel for receiving a resistance band.

5. The exercise step of claim **1**, further comprising a plurality of ribs that support the upper wall and the sloped wall.

6. The exercise step of claim **5**, wherein the bottommost surface defines a band channel disposed between a first set of ribs of the plurality of ribs and a second set of ribs of the plurality of ribs.

7. The exercise step of claim **1**, wherein the upper wall is an uppermost surface of the exercise step.

8. The exercise step of claim **1**, wherein the sloped wall is substantially planar.

9. A method of exercising a user's legs, the method comprising the steps of:

providing an exercise step comprising a main body, the main body comprising:

a substantially planar and horizontally oriented upper wall; and

a sloped wall extending from a bottommost surface of the exercise step to the upper wall;

stepping on the sloped wall with a heel portion of a user foot; and

raising the heel portion such that a sole portion of the user foot is supported by the upper wall.

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