

[54] **SIMULATED WALKER, JOGGER, AND RUNNING EXERCISER**

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[52] U.S. Cl. 5/345, 272/65, 272/69, 272/57, 272/83

[51] Int. Cl. A47c 27/14

[58] Field of Search 128/25.2; 272/57, 59, 60; 5/345, 355, 361, 337, 338, 348; 248/9; 297/452; 108/51

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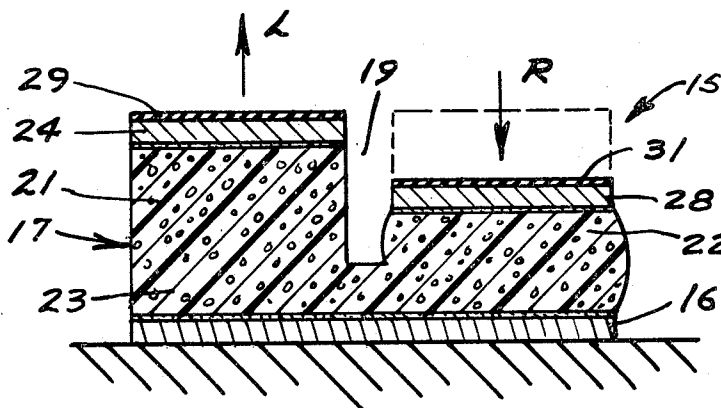
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[57] **ABSTRACT**

An exercising device usable to simulate walking, jogging and running. The device has a base carrying a pad of elastic compressible material, as yieldable foam rubber, foam plastic and the like, having air confining cavities, open cells and passageways. The pad has a longitudinal slot along the top dividing the pad into separate upwardly extended sections joined to a common lower section. Separate rigid platforms are secured to the top of each upper section to evenly distribute the pressures to the pad. Additional elastic means can be provided to hold the platforms in their upper positions. Also, a horizontal rail or handle can be used as a stabilizer for the person exercising on the device.

16 Claims, 12 Drawing Figures



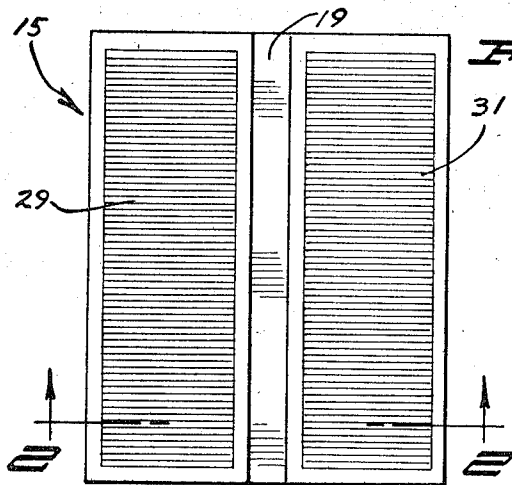


FIG. 1

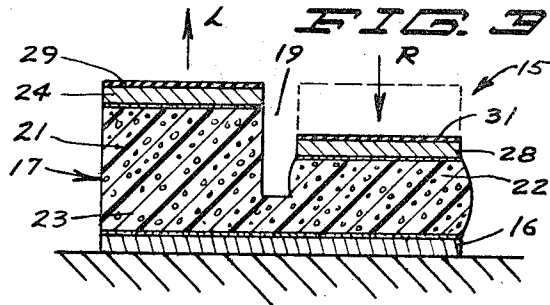


FIG. 3

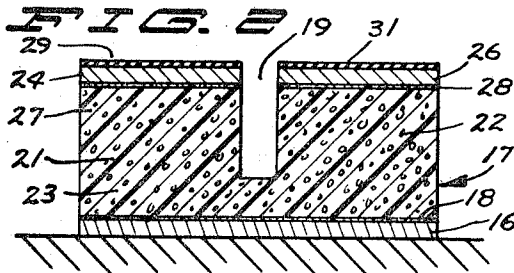


FIG. 2

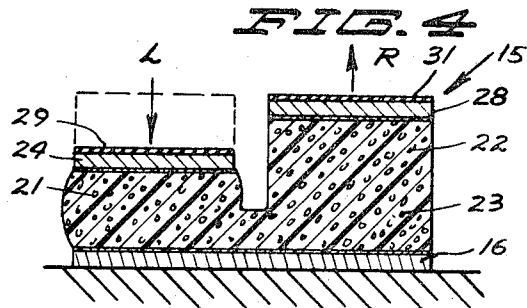


FIG. 4

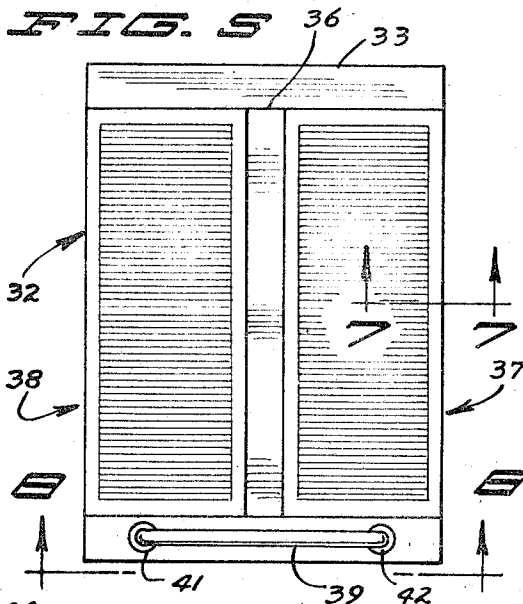


FIG. 5

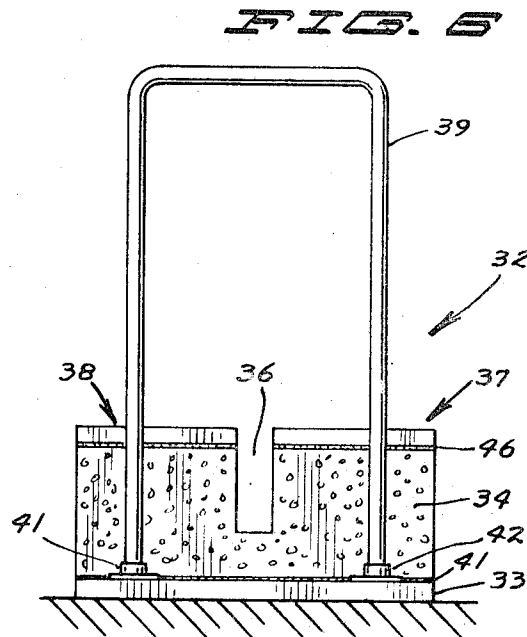


FIG. 6

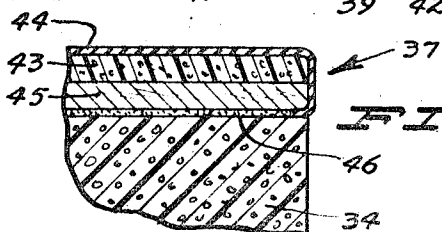


FIG. 7

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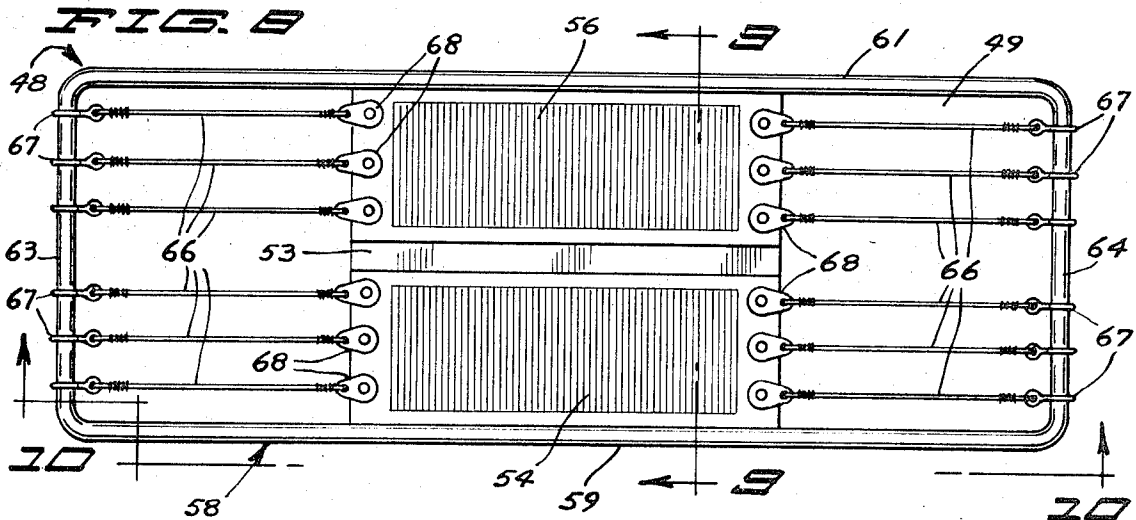
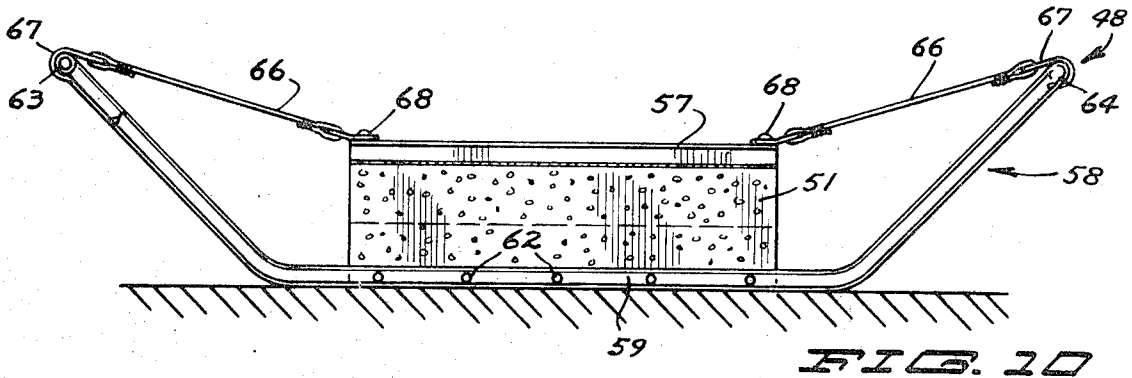
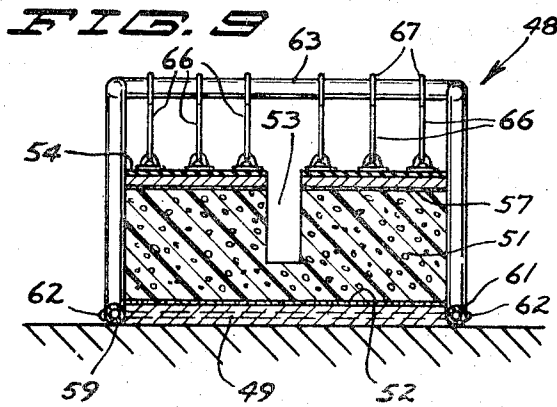
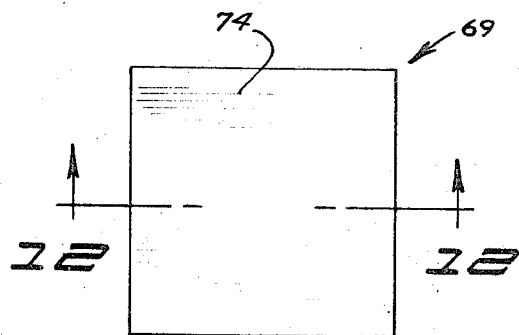
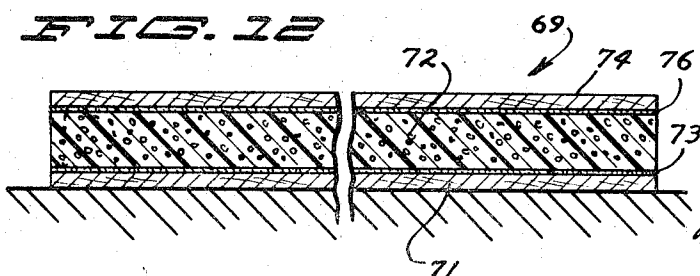


FIG. 11

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SIMULATED WALKER, JOGGER, AND RUNNING EXERCISER

BACKGROUND OF INVENTION

The beneficial effects of running, walking, and jogging as an exercise are well known. This form of exercising for adults, except in connection with conventional sports, is regarded as do-it-later behavior. Simulated running devices and jumping shoes, as shown in U.S. Pat. No. 3,338,245, have been proposed as leg and body exercising devices. These devices must be attached to a shoe and are not particularly suitable as simulated running and exercising equipment. The simulated running and jogging consists of standing in one spot while pumping the legs up and down. The movement or bobbing of the center of gravity of the person's body is a partial measure of the energy expended. On a flat nonyielding surface, this movement is relatively small, being in the neighborhood of one-quarter to one inch. An increase in the up and down movement of the center of gravity of the body will increase the energy expended during exercising.

SUMMARY OF INVENTION

The invention relates to a portable exercising device used to simulate natural walking, running, or jogging motions. The exercising device has pad means of elastic, compressible, open cell material confining fluid, as air. The pad means is divided into two separate top portions for independent exercising action. Platforms mounted on the upper sections distribute the weight and forces to the pad means. In one form of the invention, the pad means is mounted on a base carrying an upright handle to provide a gripping structure to stabilize the user. In another form of the invention, the platforms are biased in an upward direction by biasing means which work in conjunction with the pad means to resist downward movement of the platforms. In yet another form of the invention, the pad means is sandwiched between a rigid base support and a rigid platform means providing a yieldable exercising surface.

An object of the invention is to provide a portable and durable exercising device that can be used by adults in the home to simulate walking, running, or jogging. A further object of the invention is to provide an exercising device which sequentially utilizes the downward stroke of the feet and the displacement of the center of gravity of the body to expend energy. A further object of the invention is to provide an exercising device that is economical in cost, reliable and durable in use, and is usable by all age groups.

IN THE DRAWINGS

FIG. 1 is a plan view of the exerciser of the invention;
FIG. 2 is a sectional view taken along line 2—2 of FIG. 1;
FIGS. 3 and 4 are sectional views similar to FIG. 2 showing the use of the exerciser;

FIG. 5 is a plan view of a modification of the exerciser of the invention;

FIG. 6 is an end view taken along line 6—6 of FIG. 5;

FIG. 7 is an enlarged sectional view taken along line 7—7 of FIG. 5;

FIG. 8 is a plan view of a further modification of the exerciser of the invention;

FIG. 9 is a sectional view taken along line 9—9 of FIG. 8;

FIG. 10 is a side view taken along line 10—10 of FIG. 8;

FIG. 11 is a plan view of yet a further modification of the invention; and

FIG. 12 is an enlarged foreshortened sectional view taken along line 12—12 of FIG. 11.

Referring to FIG. 1, there is shown an exercising device of the invention, indicated generally at 15, for simulated walking, running, or jogging. The exercising device 15 comprises a rectangular flat base 16 which may be plywood, metal, plastic or the like. Mounted on the top of the base 16 is a block or pad of compressive material, indicated generally at 17. A layer of adhesive or bonding material 18 secures the entire bottom of the pad 17 to be base 16. The pad 17 is a unitary, resilient and

elastic member having a plurality of air-containing cavities, cells and passageways which restrict the movement of air into and out of the pad. The pad 17 may be of foam rubber, foam plastic, sponge material, and similar open cell materials that return to their original shape after being compressed, similar to a spring. The upper part of the pad 17 is divided with a longitudinal slot 19 into upper sections 21 and 22. The slot 19 extends approximately halfway down into the pad 17 so that the upper pad sections 21 and 22 are attached to a common lower or base section 23 which is secured to the base 16.

Located on top of the upper sections of 21 and 22 are flat platforms 24 and 26. Layers or films of bonding or adhesive materials 27 and 28 secure the platforms 24 and 26 to the entire top of the upper sections 21 and 22 respectively. The platforms 24 and 26 are rectangular rigid members which may be formed from wood, plywood, plastic, metal, and like rigid materials. Covering the top of each platform 24 and 26 are sheets or pads 29 and 31 of antiskid or antislip material, as rubber pads, having a plurality of transverse grooves and similar antislip structure. The top of platforms 24 and 26 can be coated with antislip material as rubber, plastic, paint and the like.

Referring to FIGS. 3 and 4, there is shown the action of the exercising device 15 during use. In FIG. 3, the right foot, indicated with arrow R, is being forced downwardly thereby compressing the upper section 22 down toward the base 23. The pad material bulges or expands outwardly and compresses and forces the air from the cavities of the pad. The left foot L is raised from the platform 24. As shown in FIG. 4, the left foot L has been forced downwardly on the platform 24 compressing the upper pad section 21 toward the base section 23, compressing and expelling the air from this portion of the pad.

The full up and down movements of foot L followed by a full up and down movement of foot R constitutes an exercising stride. A walking exercise takes place at between 50 to 60 strides per minute. A jogging exercise takes place at approximately 90 strides per minute. The effects of more rapid running may be simulated by higher stride rates. During use of the exercising device the center of gravity of a person's body will bob or oscillate up and down approximately 2 to 3 inches. This is considerably greater movement than when running or walking on a hard surface thereby increasing the amount of energy expended. Additional exercise is achieved on the movement of the legs on the down stroke as they must apply a compressive force through the distance that the pad compresses. Leg muscles of each leg are made to exert forces and expend energies at least equivalent to those involved in actual walking, running or jogging.

The pad 17 may be formed from the plurality of layers of sponge rubber or plastic material secured to each other. The adhesive or other joining material will limit the flow of air between the pads so that each pad acts as a separate compressive means. In addition, the several pads may be made of different types of material to form a one-piece compressive pad.

The following description is an example of an exercising device of the invention. The invention is not intended to be limited to this example. The base 16 is a flat wood member approximately 18 inches square. The pad 17 has a height of approximately 8 inches and is bonded with an adhesive to the top of the base. The slot 19 extends down toward the base approximately 4 inches and is about an inch and one-half to 2 inches wide. The upper sections 21 and 22 of the pad are equal in width and are approximately 8 inches wide. The pad 17 is formed from a single block of flexible urethane foam. The urethane foam is light in weight and has a high strength-to-weight ratio and an even open cell structure. The urethane foam also has a high resiliency and elasticity under dynamic pressure with excellent resistance to tear, abrasion, creep, and flexural stresses. There is little compression set. The urethane foam pad quickly returns to its initial shape after the force has been released. Other types of flexible cellular foams can be used such as natural rubber, butadiene-styrene, silicone foam, and vinyl foams. Flame retardance may be added to the foams so that they may be termed as self-extinguishing materials.

Referring to FIGS. 5 and 6, there is shown a modification of the exercising device, indicated generally at 32. The device 32 has a flat base 33 carrying a pad 34 of cellular compressive material having the characteristics of the pad 17 shown in FIG. 4. The pad 34 is divided into separate upper sections with a longitudinal slot 36 extended downwardly toward the bottom of the pad along the center of pad 34. The slot 36 extends into the pad 34 approximately one-half the thickness of the pad. Mounted on the top of the separate upper sections of the pad are platforms 37 and 38 for evenly distributing the forces applied to the pad over the upper section.

The base 33 is longer than the pad 34 whereby end portions of the base are exposed on opposite ends of the pad. Secured to the base adjacent one end of the pad 34 is an upright handle or grip unit 39 having a transverse crossbar providing a hand grip for the user of the device. The handle is an inverted U-shaped member having feet 41 and 42 attached to the base 33. Other shapes of handles, as T-shaped handles, can be used.

The platforms 37 and 38, as shown in FIG. 7, carry a cushion or pad 43 of resilient elastic material, as sponge material, foam rubber and flexible foam plastic materials. A cover 44 of fabric, leather, vinyl, and like material, is placed over the cushion 43 and secured to the rigid back 45 of the platform. A layer of adhesive or bonding material 46 secures the back 45 of platforms 37 and 38 to the separate top of the pad 34. In a similar manner, an adhesive material 47 secures the entire bottom of pad 34 to the base 33.

The exercising device 33 is used in the same manner as the exercising device as shown and described in FIGS. 3 and 4. The user of the device may stabilize himself by gripping the handle 38.

Referring to FIGS. 8, 9, and 10, there is shown a further modification of the exercising device, indicated generally at 48, for simulating walking, running and jogging. The exercising device 48 can be adjusted to provide for progressively greater exercising effort as the user increases his muscular ability. The exercising device 48 comprises a flat rigid base 49 carrying a pad of compressive cellular material similar to the material of the pad 17. A layer of adhesive 52 secures the bottom of the pad 51 to the base 49. The pad 51 has a longitudinal center slot 53 dividing the top portion of the pad into separate upper sections. Platforms 54 and 56 are positioned over the upper sections and secured thereto with adhesive layers 57.

A tubular frame 58 circumvents the platform 49. The frame 58 has side members 59 and 61 located adjacent to the sides of the base 49 and secured thereto with fasteners 62, as screws, bolts or the like. The side members 59 and 62 have ends which turn upwardly and join to transverse members 63 and 64 located upwardly and outwardly from the ends of the platforms 54 and 56. The transverse members extend substantially parallel to the ends of the platforms 54 and 56 and at a higher elevation than the platforms. The crossmembers 63 and 64 are used as anchors for plurality of elastic members 66, as springs or elastic bands, operatively connected to the platforms 54 and 56. Each elastic member has a hook 67 positioned about the adjacent transverse member. The opposite end of the elastic member has a connector 68 securing the elastic member to the end of the platform. The number of elastic members 66 attached to each platform may be varied to increase the biasing forces acting on the platform to hold the platform in its up position. The connector 68 is preferably a releasable member so that the elastic members can be changed and added to the device.

Referring to FIGS. 11 and 12, there is shown a yieldable jumping and skipping mat, indicated generally at 69. The mat 69 may be approximately 3 foot square to provide a bounce surface for use in exercising. The mat 69 has a flat rigid base 71 carrying a pad of compressible foam material as the material of pad 17. A layer of adhesive 73 secures the pad to the base. Positioned over the pad is a rigid deck 74 of masonite, plywood, or similar material to provide a hard work surface. A layer of adhesive 76 secures the deck to the entire top of pad 72. The pad may be divided with one or more slots opened to

the base or deck to increase the magnitude of the up and down movement of the deck when used as a skipping and jumping mat. The deck 74 can be covered with canvas, fabric, leather, vinyl and like sheet material.

The above description and drawings are directed to preferred embodiments of the invention. It is understood that various modification and changes in size and materials and shapes may be made by those skilled in the art without parting from the spirit of the invention.

I claim:

1. An exercising device comprising: a base having a rigid flat member, pad means of elastic compressible material mounted on the base, said flat member being secured to the bottom of the pad means, said pad means having a longitudinal slot along the top of the pad means dividing the pad means into separate upper sections joined to a common lower section, and platform means mounted on said upper sections, said platform means comprising a first flat rigid member secured to the top of one upper section and a second flat rigid member secured to the top of the other upper section.

2. The device of claim 1 wherein: said pad means comprise a plurality of layers of material secured together.

3. The device of claim 1 wherein: said pad means is formed from foam material having interconnecting air cavities.

4. The device of claim 1 wherein: said pad means is foam rubber.

5. The device of claim 1 wherein: said pad means is urethane foam plastic.

6. An exercising device comprising: a base, pad means of elastic compressible material mounted on the base, said pad means having a longitudinal slot along the top of the pad means dividing the pad means into separate upper sections joined to a lower section, and platform means mounted on said upper sections, said platform means comprising a separate rigid member secured to the top of each upper section of the pad means.

7. The device of claim 6 wherein: said pad means comprise at least two layers of material secured together.

8. The device of claim 10 including: a layer of compressible elastic material positioned on each rigid member, and means covering and holding said layer of material on the platform means.

9. The device of claim 10 wherein: the pad means are elastic compressible open cell foam material that returns to its original shape after being compressed, said foam material having air-containing cells and passageways that restrict movement of air into and out of the foam material.

10. An exercising device comprising: rigid platform means for supporting a body, pad means of elastic compressible open cell foam material that returns to its original shape after being compressed substantially covered by said platform means, said pad means having substantially the same area as the platform means, said foam material having air-containing cells and passageways that restrict movement of air into and out of the foam material, slot means dividing the material into separate sections, and side portions fully exposed to the atmosphere to allow for the movement of air into and out of the open cell foam material, means securing the platform means to a top portion of the pad means, cushion means carried on the top of the platform means, and cover means located over the cushion means and secured to the platform means.

11. The device of claim 13 including: a flat base and means securing the bottom of the pad means to the base.

12. The device of claim 14 wherein: the means securing the platform means to the pad means and the means securing the pad means to the base is an adhesive material bonding the platform means and base to the pad means.

13. The device of claim 13 wherein: the means securing the platform means to the pad means is an adhesive material bonding the platform means to the pad means.

14. An exercising device comprising: a base, pad means of elastic compressible material mounted on the base, said pad means having a longitudinal slot open along the top of the pad

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means dividing the pad means into separate sections, and platform means mounted on top of said sections, said platform means comprising a separate rigid member secured to the top of each section of the pad means.

15. The device of claim 14 including: cushion means positioned on each rigid member, and means covering and holding said cushion means on each rigid member.

16. The device of claim 14 wherein: the pad means are elastic compressible open cell foam material that returns to its original shape after being compressed, said compressible material having air-containing cells and passageways that restrict movement of air into and out of the foam material.

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UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 3,641,601 Dated February 15, 1972

Inventor(s) Dillon W. Moffatt

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Column 1, line 9, "3,338,245" should be --3,388,285--.

Column 4, line 41, "10" should be --6--;
line 45, "10" should be --6--;
line 64, "13" should be --10--;
line 66, "14" should be --11--;
line 70, "13" should be --10--.

Signed and sealed this 11th day of July 1972.

(SEAL)
Attest:

EDWARD M. FLETCHER, JR.
Attesting Officer

ROBERT GOTTSCHALK
Commissioner of Patents

UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

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Inventor(s) William F. Sieg

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Column 4, line 41, "10" should be --6--;
line 45, "10" should be --6--;
line 64, "13" should be --10--;
line 66, "14" should be --11--;
line 70, 13" should be --10--.

Signed and sealed this 3rd day of October 1972.

(SEAL)
Attest:

EDWARD M. FLETCHER, JR.
Attesting Officer

ROBERT GOTTSCHALK
Commissioner of Patents