

March 29, 1949.

M. H. HERZMARK

2,465,725

FOOT EXERCISER PAD

Filed April 8, 1947

Fig. 1.

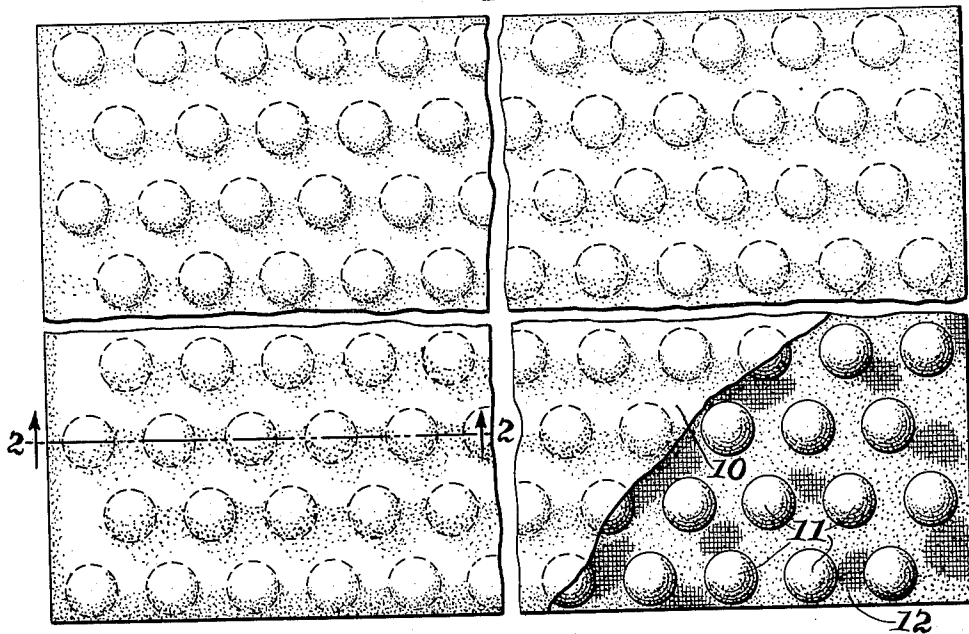


Fig. 2.



Fig. 3.



Fig. 4.

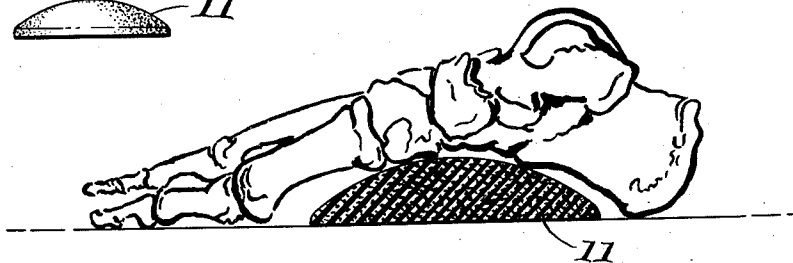


Fig. 5.



Inventor:

Maurice H. Herzmark,

By *Rafael Turov*

Attorney.

UNITED STATES PATENT OFFICE

2,465,725

FOOT EXERCISER PAD

Maurice H. Herzmark, Washington, D. C.

Application April 8, 1947, Serial No. 740,181

4 Claims. (Cl. 128—25)

1

My invention relates to a specially constructed exercising pad for use in developing of foot and leg muscles, especially in children. This exercising device is to be used in the prevention of flat or weak feet, and may be made in a size suitable to cover the floor of the usual play pen for children.

In order that my invention may be fully understood, it should be pointed out that in most cases, flat feet are caused by the continual use of a flat walking surface. In primitive times, before the advent of shoes, man traveled on bare feet over rough pebbly ground, hot sandy soil, or cold soggy marsh-land. The type of terrain determined the kind of feet he would have. The rough irregular ground developed nimble feet. Now, with well paved side-walks, polished floors and smooth rolled lawns, the feet in many instances fail to develop spring and strength and people acquire "flat feet."

One way of treating flat feet is by the insertion, in footwear, of upwardly projecting bearing elements for the sole of the foot, e. g. arch supporters, tending to elevate it more or less. This method of treatment, or of prevention, is not convenient for children, and is especially ill-adapted in the case of very young children.

It is the object of the present invention to provide an exercising device which will alleviate the tendency towards formation of flat or weak feet in the case of children. Further, the device of my invention can also be used in treating a condition of flat feet in the case of adults. Essentially, my invention consists of an exercise pad or mat, the surface of which simulates the natural conditions of outdoor, unpaved terrain, thereby stimulating an arching action of the feet and the formation of a well-developed curve in the arch of the foot, supported by strong muscles.

In the preferred form of my invention, the pad comprises a multiplicity of resilient, button-like members, preferably of uniform size, shaped in the form of segments of a sphere, these members being suitably arranged and secured to the undersurface of a flexible, resilient sheet or layer of the proper size. Such sheet may be attached to another similar sheet whereby the button-like members are enclosed between the two sheets. A pad constructed in this manner, provides an irregular but resilient surface which, when walked upon, exercises the muscles of the feet and legs by rocking the feet as the rounded buttons occupy the spaces formed by the arches of the feet.

2

Other objects and advantages of my invention will appear as the detailed description of the accompanying drawings proceeds. However, it should be understood that the invention is not limited to the exact details shown or described, but includes as part of the invention all such obvious modifications as would occur to a person skilled in this art. For example, in lieu of rubber buttons, I can use other resilient means namely, coiled springs positioned in a similar arrangement as the buttons above described. Further, such springs may carry at their upper end, button-like members of the character described, or hemispherical shells of any suitable material in which the ends of the springs are anchored or otherwise secured.

In the accompanying drawings:

Figure 1 is a top plan view of a portion of the pad showing part of the top layer removed for purposes of illustration;

Figure 2 is a sectional view of the pad along the line 2—2 of Figure 1 on an enlarged scale;

Figure 3 is a side view of the resilient button used in my pad on an enlarged scale;

Figure 4 is a side elevation showing the tread relationship between a foot and the pad of this invention and illustrating the bones of the user's foot in the position the foot assumes when standing upon it;

Figure 5 is a cross section of a detail of a modified construction.

Referring to the drawings, the exercising pad of the present invention comprises a flat, smooth sheet or layer 10 of "Rubatex" or similar flexible, resilient material, e. g. rubber which forms the top surface of the pad. Cemented or attached in any suitable manner to the undersurface of the layer 10 are a multiplicity of resilient, button-like members 11, preferably of uniform size. These buttons, which may be formed of sponge rubber, or analogous resilient material, have the shape of segments of spheres provided with flat bottom surfaces. As will be observed from the drawing, these buttons are attached by their spherical surface to the undersurface of the layer 10. The buttons are preferably disposed in rows throughout the undersurface of the layer, the individual buttons in each row being arranged in staggered relation to the individual members of an adjacent row. In its preferred construction, my exercising pad also comprises a base layer or sheet 12, suitably consisting of a rubber impregnated fabric or rubber, said layer being cemented to the flat bottom surfaces of the buttons 11, and the edges of the layer

3

12 are also cemented to the edges of the top layer 10. As will be apparent from the drawing, the two flat sheets or layers 10 and 12 thus enclose between them the button-like members 11. While, as shown in the drawing (Figure 2), the edges of the top layer 10 and of the base layer 12 are cemented directly to each other, they may also be connected to each other through the intermediary of strips 13 of resilient, rubber material such as "Rubatex," the height of the strips being the same as of the buttons. This alternate method of joining the edges of the two layers is illustrated in Figure 5.

A pad constructed in accordance with the foregoing description is of a uniform height, and may be made of any desired size depending upon the particular application. As stated above, the buttons are preferably uniform in size and shape, but may be varied in size depending upon the size of the arch of the user. Thus, in the case of a pad intended for use for children, the dimensions of the buttons will be smaller than in the case of a pad intended for the exercise of the feet of adults.

Merely by way of illustration, a pad constructed in accordance with my invention, and intended to cover the bottom of a play pen, is 40 inches square. The buttons are segments of a sphere having a radius of $\frac{1}{8}$ of an inch; and the bottom surface of the button has a diameter of $1\frac{1}{4}$ inches, the buttons are approximately $\frac{1}{4}$ inch in height and the centers of adjacent buttons are spaced approximately $1\frac{1}{8}$ inches apart.

In use, the pad is placed on the floor or else, covers the bottom surface of a play pen, so that the user may walk thereon. The rounded buttons occupy the spaces formed by the arches of the feet, as shown in Figure 4 and, in this manner, exercise the muscles of the feet and legs by rocking the feet.

In accordance with another embodiment of my invention, the base sheet 12 is formed integrally with the buttons which are molded thereon in any other convenient manner. The buttons are secured to the upper sheet, the lower sheet, or both. Preferably, an envelope of the character described is employed, but either the upper or lower layer may be omitted as long as the pad presents spherical surfaces to the foot of the user.

Having thus described the invention, what is claimed as new and for which it is desired to obtain Letters Patent, is:

1. A flat foot-exercising pad, comprising a flexible resilient layer constituting a continuous tread surface, and a multiplicity of resilient, uniform

4

spherical surfaces in contact with the undersurface of said layer, said surfaces being disposed in rows throughout the undersurface of said layer, and the individual surfaces of each row being arranged in staggered relation to the individual surfaces of an adjacent row.

2. A foot-exercising pad in accordance with claim 1, comprising a second layer positioned below the flexible resilient layer and connected thereto whereby said resilient surfaces are supported between said layers.

3. A foot-exercising pad for small children, adapted to be placed on the floor of a child's play pen, comprising a flexible resilient layer constituting a continuous tread surface, and a multiplicity of resilient surfaces of equal size in the shape of segments of spheres in contact with the undersurface of said layer to which they are fastened, said resilient surfaces being disposed in rows throughout the undersurface of said layer, and the individual resilient surfaces of each row being arranged in staggered relation to the individual resilient surfaces of an adjacent row.

4. A waterproof foot-exercising pad, comprising a flat base sheet of rubber impregnated fabric, a multiplicity of sponge rubber buttons of uniform size rising from and fixedly mounted on the base sheet and arranged in a plurality of rows to cover substantially the entire area of the base sheet, the individual buttons of each row being arranged in staggered relation to the individual buttons of an adjacent row, said buttons being of a size and shape suitable for acting on the arches of the feet when walked upon, and a flat covering sheet of thin, resilient rubber-like material fixedly attached to the tops of the said buttons and to the edges of the base sheet whereby said buttons are supported between said base sheet and said covering sheet, said covering sheet constituting a continuous tread surface.

MAURICE H. HERZMARK.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,481,038	Stephenson	Jan. 15, 1924
1,981,379	Thomson	Nov. 20, 1934
2,079,311	Blumenthal	May 4, 1937

OTHER REFERENCES

Pages 1098-1099 of publication, "Journal of Bone and Joint Surgery," for October 1947.