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RESILIENT JUMPING SHOES

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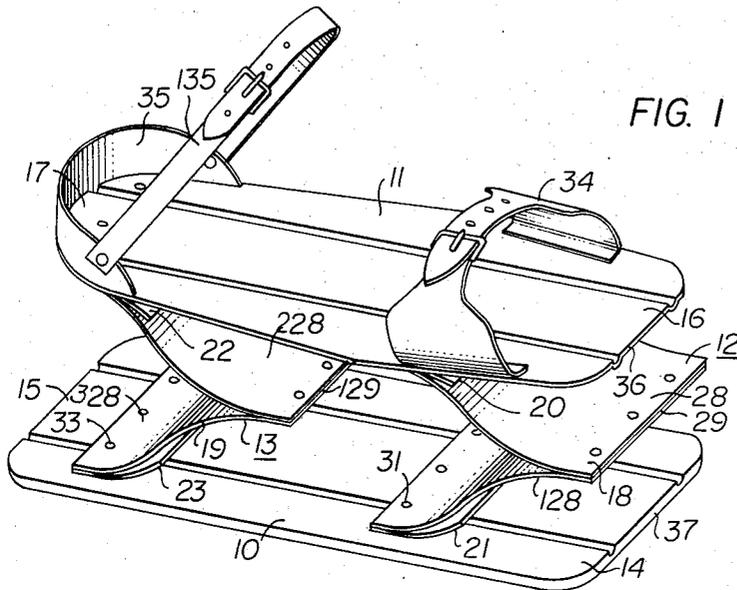


FIG. 1

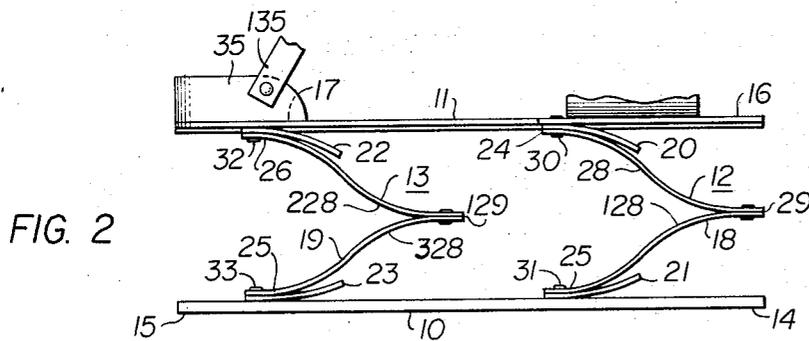


FIG. 2

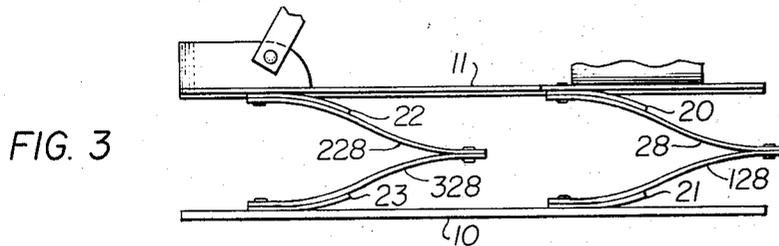


FIG. 3

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RESILIENT JUMPING SHOES

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4 Claims. (Cl. 36-7.8)

This invention relates to exercising toys, and more particularly to resilient jumping shoes. This is a continuation-in-part application of an application filed October 1, 1958, by me, Albert J. Horten, bearing Serial No. 764,729, entitled "Jumping Devices" and now abandoned.

Exercising toys of this type are not only enjoyable but they are also helpful to a child. While they provide the child with a form of amusement, they are also providing the child with needed and necessary exercise. It is, of course, desirable to have such a toy as safe as possible to prevent injury to the child.

Therefore, one of the principal objects of this invention is to provide an exercising toy that supports both the heel and ball of the foot with resilient means.

Another object of this invention is to provide an exercising toy having a plurality of resilient means which cooperatively act and assist each other to impart a safe springing motion while a child is jumping or running.

A further object of this invention is to provide a new and novel jumping shoe which will prevent side sway and twisting motion while in use.

A further object of this invention is to provide a novel and improved jumping shoe of greater resilient capacity by a construction that is inherently capable of allowing the device to compress to a fully collapsed position.

Still a further object of this invention is to provide a novel and improved jumping shoe having primary and secondary springs so arranged that when the primary springs approach full compression, the secondary springs commence functioning to reduce or eliminate the shock of going into a fully collapsed position and to provide great reversing power of the resilient means.

A related object of this invention is to provide a novel and improved jumping shoe having a pair of leaf springs which are resilient longitudinally and transversely.

A further related object of this invention is to provide a novel and improved jumping shoe having leaf spring action by a spring structure of wires having a wave shape.

A further object of this invention is to provide a novel and improved device made in accordance with the foregoing objects and which can easily and readily be attached to and detached from a person's foot.

Other objects and a fuller understanding of the invention may be had by referring to the following description and claims, taken in conjunction with the accompanying drawings, in which:

Figure 1 is a perspective view of the first embodiment of the device;

Figure 2 is a side elevational view of the device of Figure 1;

Figure 3 is a side elevational view of the device of Figure 1 when it is under partial compression.

Referring to the drawings and to Figures 1, 2, and 3, in particular, a first embodiment of the device, a base portion 10 is provided having a front section 14 and a rear section 15. A foot engaging portion 11 is superposed with respect to the base portion 10. A foot engaging portion 11 has a toe engaging section 16 and a

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heel engaging section 17. The toe engaging section 16 has a forward part 36 and a front section 14 has a forward part 37, the forward parts 36 and 37 are generally aligned and form the forward part of the device. First resilient means 12 and second resilient means 13 are provided. The first resilient means has a primary spring 18. The primary spring 18 is composed of a pair of leaf springs 28 and 128, which are in operative connection with each other and form a V configuration coming to a point 29.

Second resilient means 13 is of like construction and has primary spring 19. Primary spring 19 is composed of a pair of leaf springs 228 and 328 in operative connection with each other in a V-shaped configuration coming to a point 129.

The primary spring 18 has a first end 24 which is carried by the toe engaging portion 16 at 30, and a second end 25 which is carried by the front section 14 at 31. An upper secondary spring 20 of the first resilient means 12 is provided and carried by the primary spring 18 at 30. The spring 20 is positioned between the toe engaging section 16 and the primary spring 18. A lower secondary spring 21 is carried by the primary spring 18 at 31. The lower spring 21 is positioned between the front section 14 and the primary spring 18.

The primary spring 19 has a first end 26 which is carried by the heel engaging section 17 at 32. The primary spring 19 has a second end 25 which is carried by the rear section 15 at 33. Second resilient means 13 has an upper second spring 22 which is carried by the primary spring 19 at 32. The upper secondary spring 22 is positioned between the heel engaging section 17 and the primary spring 19. Second resilient means 13 has a lower secondary spring 23 which is carried by the primary spring 19 at 33. The lower secondary spring 23 is positioned between the rear section 15 and the primary spring 19. All of the secondary springs 20, 21, 22, and 23 are shorter than any of the leaves of the primary springs 18, and 19.

The point of the V's 29, and 129, are in a plane between the base portion 10 and the foot engaging portion 11 and parallel thereto. The points 29 and 129 of the primary springs 18 and 19, respectively, point in the direction designated as the forward part of the device. The toe engaging section 16 has a buckle strap 34 to hold the front portion of a human foot. The heel engaging section 17 has a heel stop 35 and a buckle strap 135 to hold the heel portion of a human foot.

A person attaches the device to his foot by the foot engaging straps 34 and 135. As he stands on the device, the device partially depresses and the leaves 28 and 128 of the primary spring 18 approach each other. Also, the leaves 228 and 328 of the primary spring 19 approach each other. If a person bounces down heavily on the device, the springs' leaves 28, 128, 228, and 328 approach each other more closely and the secondary springs 20, 21, 22, and 23 abut against their respective primary springs 18 and 19, and give an added amount of resiliency. If a person instead of bouncing straight down on the device rocks forward, the leaves 28 and 128 of the primary spring 18 approach each other and the leaves 228 and 328 of the primary spring 19 spread apart. The reverse of this happens if the person rocks backward. Because of this construction, it is possible to have a front and backward rocking motion.

Also, because of the provision of two primary springs and their configuration and placement the one will tend to have a negative compression when the weight is distributed heavily on the other, and no constraining means is needed to limit their movement. When a person runs on this device, because of the arrangement of the primary springs 18 and 19, the cooperative resilient action reinforces the natural running motion and cooperates with

it in order to provide an increased thrust of force. Inherent in this natural cooperation is the prevention of side sway or twisting which makes this device safe to use and reduces the possibility of injury to the user.

Although the invention has been described in its preferred form with a certain degree of particularity, it is understood that the present disclosure of the preferred form has been made only by way of example and that numerous changes in the details of construction and the combination and arrangement of parts may be resorted to without departing from the spirit and the scope of the invention as hereinafter claimed.

What is claimed is:

1. An exercising toy comprising an elongated base portion having a front section and a rear section, a foot engaging portion having a toe engaging section and a heel engaging section, first and second primary springs, each of said springs being a pair of leaf springs in operative connection with each other, each of said primary springs having first and second ends, said first end of said first primary spring being carried by said toe engaging section of said foot engaging portion, said second end of said first primary spring being carried by said front section of said base portion, said first end of said second primary spring being carried by said heel engaging section of said foot engaging portion, said second end of said second primary spring being carried by said rear section of said base portion, said foot engaging portion having means to operatively engage a human foot.

2. An exercising toy comprising an elongated base portion having a front section and a rear section, a foot engaging portion having a toe engaging section and a heel engaging section, said foot engaging portion being superposed with respect to said base portion, said toe engaging section of said foot engaging portion having a forward end, said front section of said base portion having a forward end, said forward ends being generally aligned and defining the forward end of the said device, first and second primary springs, each of said springs being a pair of leaf springs in operative connection with each other forming a V-shaped configuration, the point of each of said "V's" being in a plane parallel to and between said base portion and said foot engaging portion, the point of each V pointing generally toward said front of said device, each of said primary springs having first and second ends, said first end of said first primary spring being carried by said toe engaging section of said foot engaging portion, said second end of said first primary spring being carried by said front section of said base portion, said first end of said second primary spring being carried by said heel engaging section of said foot engaging portion, said second end of said second primary spring being carried by said rear section of said base portion, said foot engaging portion having means to operatively engage a human foot.

3. In the device of claim 2 the provision of first and second secondary leaf spring means, said first secondary spring means in operative connection with said first primary spring and carried thereby, said second secondary primary means in operative connection with said second primary spring and carried thereby.

4. An exercising toy comprising an elongated base portion having a front section and a rear section, an

elongated foot engaging portion, said foot engaging portion being superposed with respect to said base portion, said foot engaging portion having a toe engaging section and a heel engaging section, said toe engaging section of said foot engaging portion having a forward end, said front section of said base portion having a forward end, said forward ends being generally aligned and defining the forward end of the device, first and second resilient means, each of said resilient means having a primary spring and an upper secondary spring and a lower secondary spring, said primary spring being a pair of leaf springs in operative connection with each other forming a V-shaped configuration, the point of each of said "V's" being in a plane parallel to and between said base portion and said foot engaging portion and pointing in a direction generally toward said forward end of said device, said primary spring having first and second ends, each of said secondary springs being a leaf spring, each secondary spring being shorter than either of the leaves of said primary spring, said first end of said primary spring of said first resilient means being carried by said toe engaging section of said foot engaging portion, said second end of said primary spring of said first resilient means being carried by said front section of said base portion, said upper secondary spring of said first resilient means being carried by said first end of said primary spring of said first resilient means, said upper secondary spring of said first resilient means being positioned between said toe engaging section of said foot engaging portion, and said primary spring of said first resilient means, said lower secondary spring of said first resilient means being carried by said second end of said primary spring of said first resilient means, said lower secondary spring being positioned between said front portion of said base and said primary spring of said first resilient means, said first end of said primary spring of said second resilient means being carried by said heel engaging section of said foot engaging portion, said second end of said primary spring of said second resilient means being carried by said rear section of said base portion, said upper secondary spring of said second resilient means being carried by said first end of said primary spring of said second resilient means, said upper secondary spring of said second resilient means being positioned between said heel engaging section of said foot engaging portion and said primary spring of said second resilient means, said lower secondary spring of said second resilient means being carried by said second end of said primary spring of said second resilient means, said lower secondary spring being positioned between said rear section of said base portion and said primary spring of said second resilient means, said toe engaging section of said foot engaging portion having binders to engage and hold the forward part of a human foot, said heel engaging section of said foot engaging portion having binders to engage and hold the rear portion of a human foot.

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