July 5, 1949. W. B. HARRELL 2,475,092

BOUNCING SKATE

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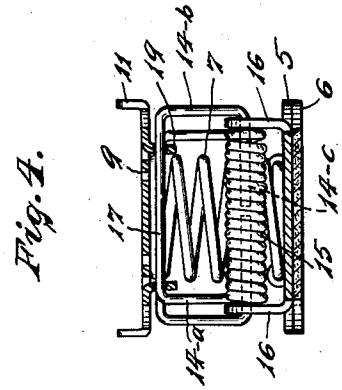

Fig. 4.

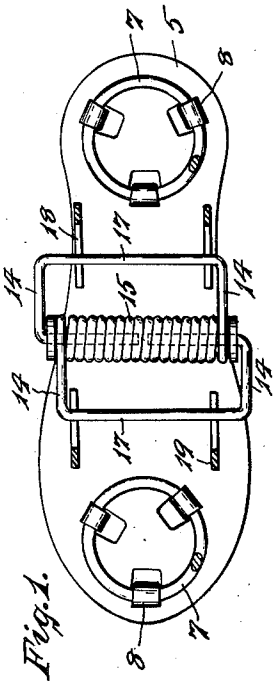

Fig. 1.

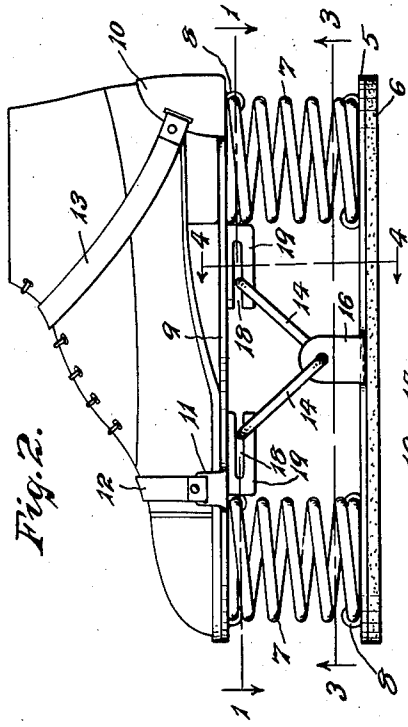

Fig. 2.

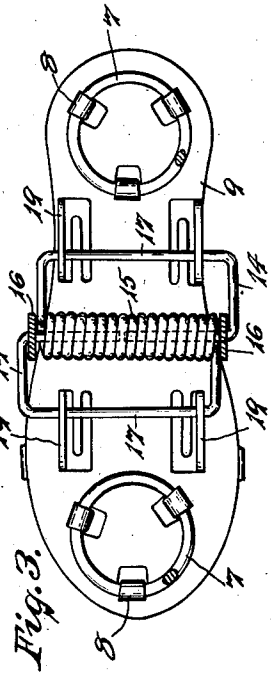

Fig. 3.

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BOUNCING SKATE

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8 Claims. (Cl. 36—7.8)

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This invention relates to a bouncing skate and more particularly to a spring device which is intended to be fastened to the feet of the user to aid in jumping or bouncing for enjoyment and exercise.

It is well known that, in the use of such devices as heretofore produced, there was caused a considerable amount of crosswise tilting of the device due to the fact that the upper section, which is mounted on springs, was floating and had a tendency to move unevenly under the weight of the user. This tilt could very easily cause accidents and possible injury, since it would have a tendency to twist the user's ankles and, in some cases, could result in a fall or even a serious injury.

An object of my invention, therefore, is the provision of such a device which is highly efficient in its operation, durable, and economical to produce.

A further object is to provide a spring bouncing device by which there may be obtained a vertical springing action without the possibility of twisting the user's ankles.

A further object of the invention is to provide such a device having means which will control the action of the springs and of the device in such a manner that the spring movement will be in a vertical position and crosswise tilting will be practically eliminated so as to avoid possible injury to the user.

Further objects and advantages of this invention will be more clearly understood from the following description and from the accompanying drawings in which:

Fig. 1 is a sectional view of the lower portion of my improved bouncing skate, taken on line 1—1 of Fig. 2.

Fig. 2 is an elevational side view of the said bouncing skate and showing the same secured to the shoe of the user.

Fig. 3 is a bottom view of the upper portion of my improved skate, partly in section on line 3—3 of Fig. 2.

Fig. 4 is an end view of my improved skate, in vertical section on line 4—4 of Fig. 2.

As shown in the drawings, my improved bouncing skate may be constructed to provide a lower, or base plate 5 which may have a sole 6 of suitable material, such as rubber or leather, secured thereto.

A pair of coiled bouncing springs 7—7 are carried upon the base plate 5 and may be secured thereto by such means as the fingers 8 which are preferably stamped from the material of the plate 5 and bent upwardly to engage the lower coils of the springs 7—7.

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A supporting plate 9 is similarly secured to said springs and carried thereupon. This supporting plate is preferably provided with a heel rest 10, at the rear portion thereof, and side clips 11, and may be secured to the shoe of the user by means of straps, as indicated at 12 and 13.

In order to eliminate tilting or uneven movement of the supporting plate 9 upon the spring 7—7, during the bouncing action upon said skate, I provide a stabilizer which is preferably in the form of a pair of arms 14—14 that diverge upwardly from the ends of a torsion spring member 15 which is mounted in upright bearing posts 16—16 on the lower section 5. The said stabilizer is preferably constructed by extending one end of said spring member upwardly, as at 14—*a*, then across therefrom with a connecting bar portion 17, then downwardly therefrom with a parallel arm portion 14—*b*, then through one of the brackets 16, and then into the opening of one of the brackets 16 and into the center of the coil spring with an extension, as indicated in dotted lines at 14—*c*. The opposite end of the spring is formed in the same manner to provide the other arm 14 of the stabilizer. The said stabilizer arms then extent upwardly from the brackets 16 and have their respective connecting bars 17 slidably fitting within the slots 18 in the brackets 19 that depend from the supporting plate 9.

In the operation of my improved bouncing skate, the said skate is fastened to the user's shoe, as illustrated in Fig. 2, and the user may then bounce up and down, either in one place or in running and jumping; all of which will be greatly accelerated by the use of the spring action provided by my improved bouncing skate. During the action of the skate, the spring 15, by means of the arms 14—14, will assist in supporting the weight of the user and the said arms will pivot in the openings in the brackets 16 and move horizontally in the slots 18—18. Since the said arms are connected by the connecting bars 17, they will equalize the weight upon the supporting plate 9 so that the motion of said plate upon the spring 7—7 will be in an up-and-down direction and no tipping or twisting of the plate 9 will be allowed, for the reason that the said plate is connected at its opposite sides to the bars 17, by means of the brackets 19, and such tipping cannot occur since the said bars 17 will move in parallelism to each other and thereby prevent sidewise tilting of the supporting plate 9. This may be clearly understood from the illustration in Fig. 4, wherein it

may be readily seen that the supporting plate 9 cannot twist or tilt in its up-and-down movement since it is secured to the crossbar 17 which will maintain the supporting plate horizontal, in a crosswise direction, during the movement thereof.

I claim:

1. A bouncing skate of the character described comprising a base plate, a pair of coiled springs carried on said base plate, a supporting plate carried by said springs for vertical yielding movement relatively to said base plate, and equalizing means including a spring member between said plates for maintaining the upper end lower plates parallel in a crosswise direction during vertical movement of the supporting plate on said springs.

2. A bouncing skate of the character described comprising a base plate, a pair of coiled springs carried on said base plate, a supporting plate carried on said coiled springs for vertical yielding movement relatively to the base plate under the weight of the user, and stabilizing means for preventing crosswise tilting action of said supporting plate during the movement thereof relatively to the base plate; said stabilizing means including a spring member mounted upon the base plate, and a pair of arms extending divergingly upward from said spring member and slidably secured to the supporting plate.

3. A bouncing skate of the character described comprising a base plate, a pair of coiled springs mounted vertically upon said base plate, a supporting plate yieldingly supported upon said coiled springs, and stabilizing means for preventing sidewise tilting action of said supporting plate during its movement upon said springs; said stabilizing means comprising a pair of upright bearing members extending upwardly from said base plate, a torsion spring mounted between said bearing members; the ends of said torsion spring extending upwardly from the opposite sides thereof and forming parallel crossbars with the ends thereof extending through bearing openings in said bearing members and into the center of said torsion spring to thereby provide parallel bars which are slidably connected to the supporting plate but maintain it in crosswise horizontal position during the up-and-down movement of the plate on the bouncing springs.

4. A bouncing skate of the character described comprising a base plate having a pair of coiled springs mounted thereon for vertical movement, a supporting plate yieldingly carried upon said coiled springs, means for securing said bouncing skate to the shoe of a user, and means between said coiled springs for stabilizing the supporting plate against sidewise tipping movement during the vertical movement thereof; the said stabilizing means comprising a pair of spaced brackets extending upwardly from the lower plate, a torsion coiled spring positioned between said brackets, a pair of depending brackets upon the upper plate having slots therein; the said torsion spring having its opposite ends extending upwardly, then crosswise through the slots into opposite bearing brackets, and into the center of the torsion spring from the opposite ends thereof, whereby a pair of horizontally connected parallel bars are provided which yieldingly retain the said supporting plate against crosswise tilting movement during the action thereof upon said coiled springs.

5. A bouncing skate of the character described comprising a base plate, a pair of coiled springs attached to said plate at the opposite ends thereof, a supporting plate carried on said coiled springs for vertical yielding movement relatively to the said base plate, and stabilizing means between said plates for preventing tilting action of said supporting plate while the skate is in use; the said stabilizing means including a spring member mounted on one of said plates and having arms extending into sliding contact with the other of said plates.

6. A bouncing skate comprising a base plate, coiled springs mounted vertically upon said base plate, a supporting plate yieldingly supported upon said coiled springs, and stabilizing means to prevent tilting action of said supporting plate upon said movement of said springs; said stabilizing means comprising a U-shaped member having a pair of side bars and a portion connecting said side bars; said U-shaped member being pivoted to one of said plates and having the connecting portion thereof slidable in the other of the said plates.

7. A bouncing skate comprising a base plate, coiled springs mounted vertically upon said base plate, a supporting plate yieldingly supporting upon said springs, and stabilizing means for preventing sidewise tilting action of said supporting plate during its movement upon said springs; said stabilizing means including a pair of U-shaped members having side arms and an intermediate connecting portion, the free ends of said side members being pivoted on supports on one of said plates and disposed at an angle relatively thereto with the connecting portions of said U-shaped members being slidably connected to the other of said plates.

8. A bouncing skate comprising a base plate, coiled springs mounted vertically upon said base plate, a supporting plate yieldingly supported upon said coiled springs, and stabilizing means for preventing sidewise tilting action of said supporting plate upon movement of said springs; said stabilizing means comprising a pair of U-shaped members including side bars and an intermediate connecting portion, the free ends of said side bars of each U-shaped member being pivotally secured to opposite sides of the base plate at an intermediate portion thereof and diverging upwardly therefrom the said connecting portion of each member being slidably secured to the supporting plate whereby the said connecting portions provide parallel bars which are slidably connected to the supporting plate to maintain it in horizontal crosswise position during the up and down movement on the coiled springs.

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REFERENCES CITED

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

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