

June 27, 1967

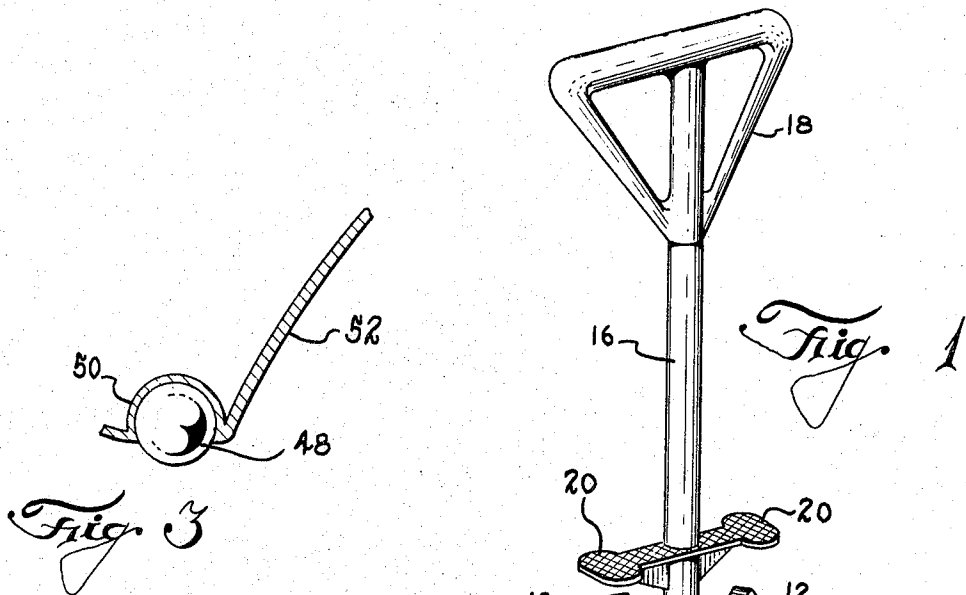
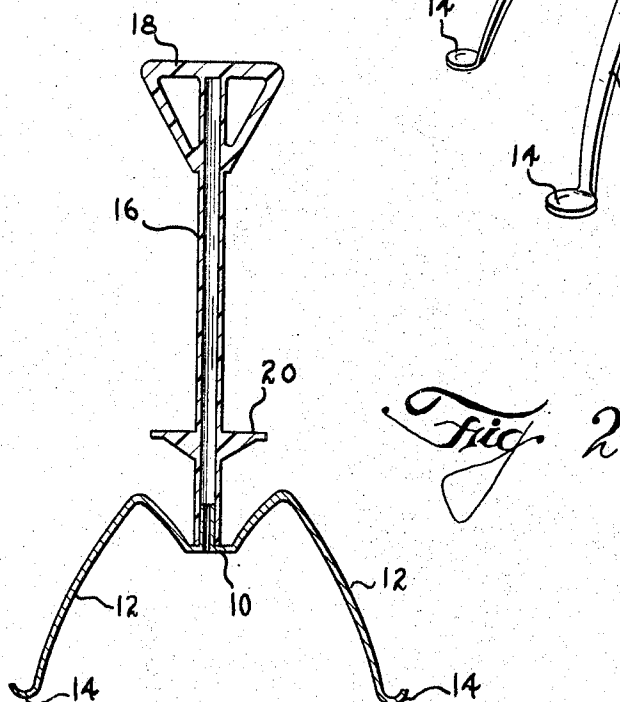
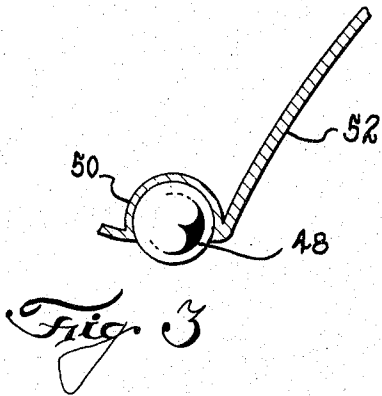
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3,328,028

RIDER-OPERATED SPRING-MOUNTED JUMPING TOY

Original Filed Aug. 8, 1963

2 Sheets-Sheet 1



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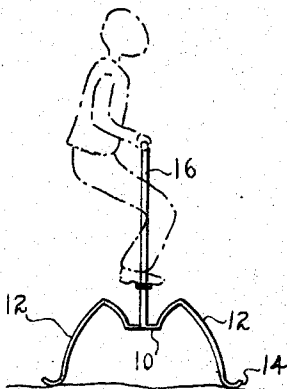


Fig. 4

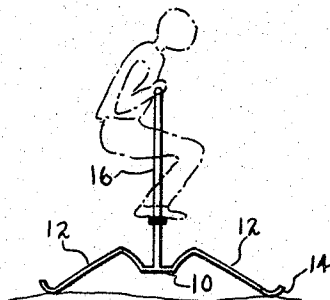


Fig. 5

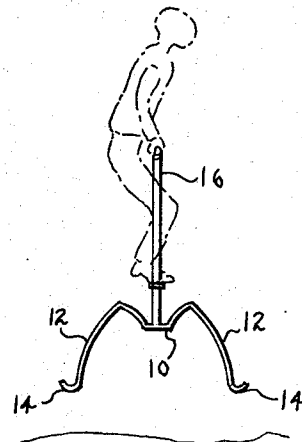


Fig. 6

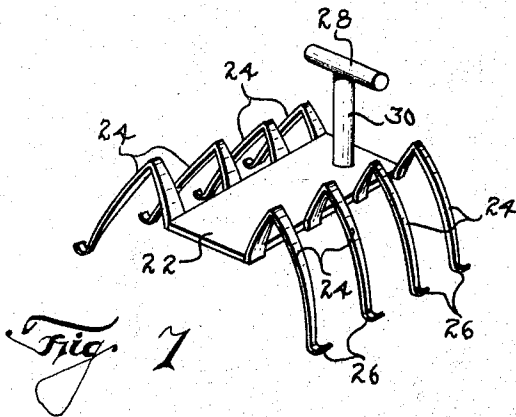


Fig. 7

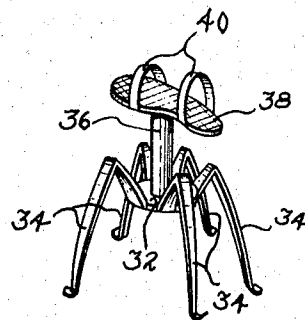


Fig. 8

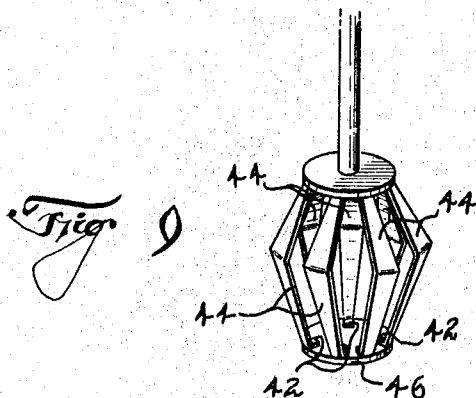


Fig. 9

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RIDER-OPERATED SPRING-MOUNTED JUMPING TOY

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Continuation of application Ser. No. 300,741, Aug. 8, 1963. This application Mar. 11, 1966, Ser. No. 540,787
8 Claims. (Cl. 272—57)

This application is a continuation of application Ser. No. 300,471, filed Aug. 8, 1963, now abandoned.

This invention relates to spring supported riding or hopping toys.

The object of the invention is to provide stability in a Pogo-stick type of exercising toy having flexibly resilient legs to promote a high rebound force for jumping upwardly off the ground and moving in any direction desired.

A further object is to extend a plurality of resilient legs from the body portion outwardly in different directions and bent over downwardly to foot ends correspondingly spread apart to provide a stable arrangement of ground supports for the body portion and the rider mounted thereon.

A further object is to extend a plurality of resilient legs from the body portion in upwardly outward directions before curving downwardly while continuing to spread apart to foot ends correspondingly spread out to provide a stable toy with a low center of gravity.

A further object is to provide a substantially rectangular body portion for this toy with a series of oppositely extending legs from the sides of the body.

A further object is to provide friction reducing means in the foot ends of the resilient legs to reduce the friction with the ground.

A further object is to mount all the foot ends rigidly to a common foot support, causing the mid-portions of the legs to bulge outwardly when the body portion is pressed downwardly toward the ground.

A further object is to mount a foot support with straps on the body portion for single foot mounting.

A further object is to extend an upright shaft from the body portion having a foot rest near the lower end of the shaft for both feet straddling the shaft, and a hand grip at the upper end.

Other and more specific objects will become apparent in the following detailed description of some preferred forms of the invention as illustrated in the accompanying drawings, wherein:

FIG. 1 is a perspective view of a preferred form of toy made in accordance with the present invention,

FIG. 2 is a vertical sectional view thereof showing a tubular shaft structure,

FIG. 3 illustrates a friction reducing bearing that might be incorporated in the foot end of each resilient leg to facilitate movement of the foot ends on the ground during flexure of the legs,

FIGS. 4, 5 and 6 show successive postures assumed by the rider in the process of exercising thereon,

FIG. 7 illustrates a modified form of this toy, having a rectangular body portion,

FIG. 8 is another form of this toy adapted for use on one foot of the rider, and

FIG. 9 is a modified form of the flexibly resilient legs having a common base rigidly fixing all the foot ends together.

This invention is unique in that anyone can ride the toy and balance themselves without any special talent or skill.

It is also unique in that the resilient legs can be arched or adjusted to give forward motion if desired.

The form illustrated in FIG. 1 comprises the central body portion 10 having flexibly resilient legs 12 arched

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outwardly and upwardly in different radial directions to foot ends 14 correspondingly spread around in a large circle providing great stability to the toy, requiring no balancing skill to ride it.

The shaft 16 which may be tubular to provide strength with lightness, is rigidly fixed on the body portion 10 and has a suitable hand grip 18 at its upper end and a double foot rest 20 near its lower end, extending to both sides of the shaft at a height to clear the flexing leg arches when the toy is in use. The grip 18 and foot rest 20 may be made separately and fixed to the shaft, or they may be made in one piece with the shaft, as shown.

While the resilient legs may be made of spring steel, the shaft with its hand grip and foot rest could be made of a suitably light plastic material, so that the whole toy would weight very little.

The rider can easily mount this toy by gripping the hand grip with one or both hands and stepping up on the foot rest, placing one foot on each side of the shaft. The legs would flex in a certain amount in accordance with the weight of the rider, spreading their foot ends to provide even more stability.

The rider may now exercise by simply jumping straight up and down, or, by shifting his body to one side in any direction, he may hop in that direction. As illustrated in FIGS. 4, 5 and 6, he may move forward by shifting his body forwardly during each jump, starting by bending his knees as in FIGS. 4 and 5, so that the momentum of his body flexes the resilient legs outwardly, and then raising his body quickly on the rebound so as to cause the upward momentum of his body to lift the toy with its legs off the ground in a forward hop, and repeating this cycle of operations to continue travelling in any direction in which he may desire, by correspondingly shifting his body in that direction during the rebound.

The modification shown in FIG. 7 has a rectangular body portion 22 and flexibly resilient legs 24 extending outwardly from the opposite sides of the body portion, the foot ends 26 being spread along widely separate lines on each side of the body portion and providing a wide support base, which gives great stability to the toy and distributes the weight among the several foot ends. The body portion may thus sustain a large loading consisting of more than one rider sitting or standing tandem on the body portion, the leading rider steadying himself by holding to the hand bar 28 at the top of a post 30 fixed to the front end of the body portion.

This toy may be made for use on one foot as shown in FIG. 8, where the body portion 32 has a plurality of radially extending flexibly resilient legs 34 and a central post 36 topped by a foot support 38 with straps 40. This enables a rider to hop on one foot, or if he uses two of these toys, he can use them simultaneously or alternately to hop from one foot to the other.

As shown in FIG. 9, the foot ends 42 of all the legs 44 in any of these toys may be fixed together on a common base plate 46, so that no friction is obtained with the ground during the hops.

FIG. 3 shows a way of reducing such friction with the ground by providing a frictionless bearing 48 in the foot end 50 of each resilient leg 52.

It is to be understood that spring steel is not the only material that may be used for the resilient legs, as there are other metallic and non-metallic materials now available with suitable resilient properties with much lower densities than steel.

The resilient legs may be made integral with the body portion, by stamping form spring sheet material and forming to provide suitable arches, and the legs may be tapered outwardly from the middle of the arch in both directions, i.e. toward their bases and outer ends as in FIG. 9; or they may be widest at the base and be tapered all the way

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outwardly to their outer ends as in FIG. 1, so as to provide suitable arching or spreading of the arches during the hopping operation.

Although the friction reducing bearing in FIG. 3 shows a ball and socket type, any other type, such as a roller bearing, etc. could be suitably mounted on the ends of the resilient legs to perform the same function.

Many other obvious modifications in the details of these toys may be made without departing from the spirit and scope of the present invention.

What is claimed is:

1. A toy vehicle comprising a planar metal plate forming a base, at least three leaf springs for resiliently supporting the base on a support surface, and means on the base for aiding a rider to stay on the vehicle during operation, each of said springs comprising a short leg integrally secured at one end to the plate and extending in one direction laterally of the plane of the base, and a long leg secured to the short leg extending in an opposite lateral direction beyond the plane of the base.

2. A vehicle as defined in claim 1 wherein the base is circular and the springs are equally spaced around the circumference.

3. A vehicle as defined in claim 1 wherein the base is rectangular and the legs are equally spaced along opposite edges of the base.

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4. A vehicle as defined in claim 1 wherein the springs are tapered from the base to the ends.

5. A vehicle as defined in claim 1 wherein the free ends of the springs are curved to present a convex surface to the support surface.

6. A vehicle as defined in claim 1 wherein the free ends of the springs are provided with a concave socket and a ball is retained in the socket for rolling engagement with the support surface.

7. A vehicle as defined in claim 1 wherein the means on the base for aiding the rider comprises a post and a handle secured to the post on one end thereof.

8. A vehicle as defined in claim 7 further including a foot rest secured to the post between the base and handle.

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