May 16, 1967 A. J. SHERMAN 3,319,970

WHEELLESS RIDABLE TRAVELING TOYS

Filed June 3, 1965 2 Sheets-Sheet 1

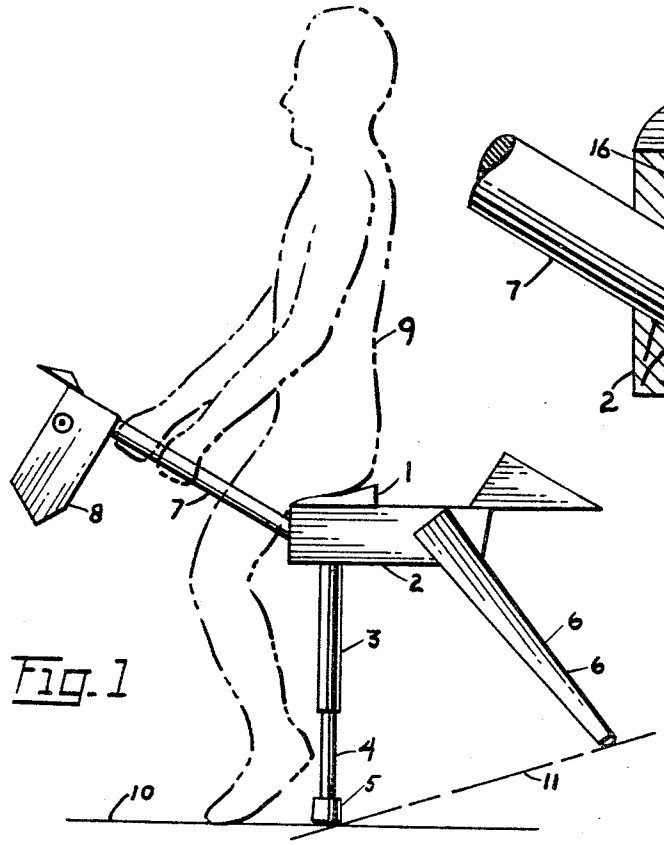

Fig. 1

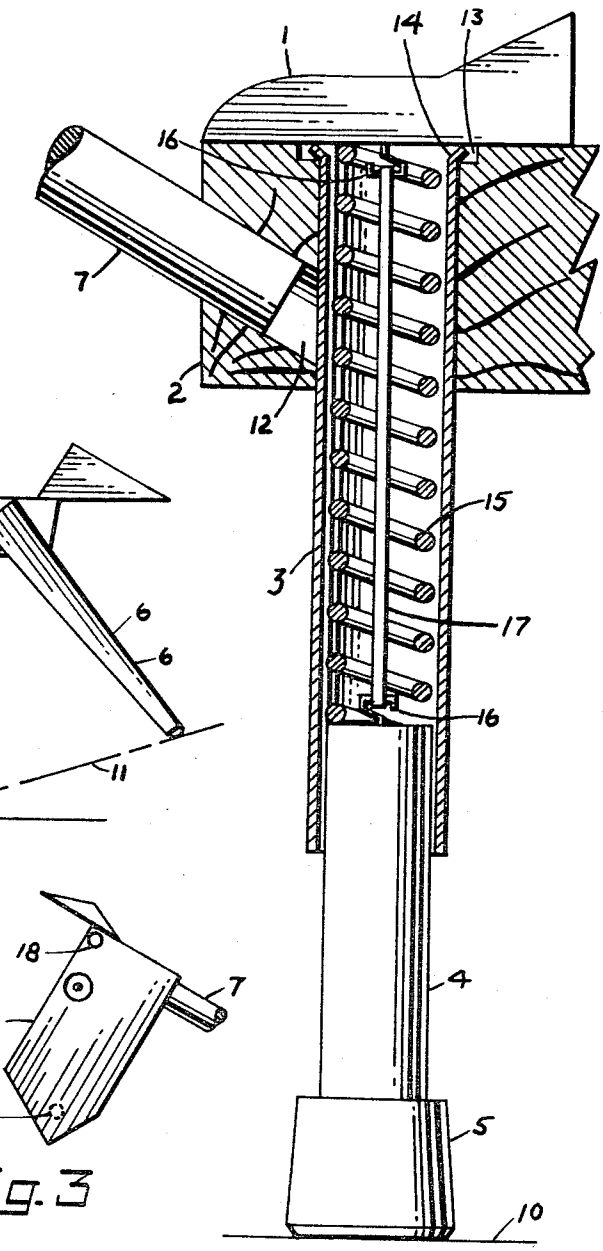

Fig. 2

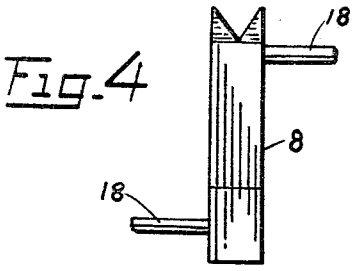

Fig. 4

Fig. 3

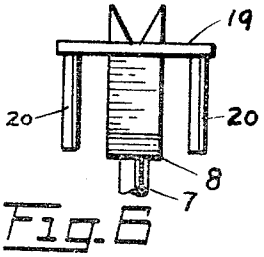

Fig. 6

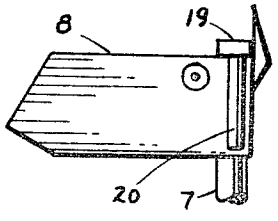

Fig. 5

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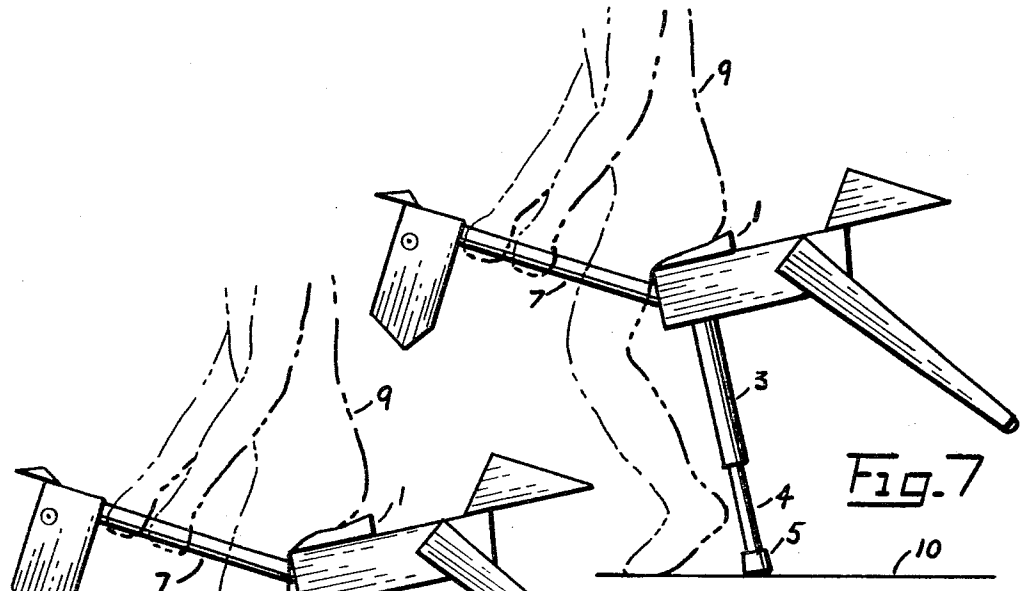

Fig. 7

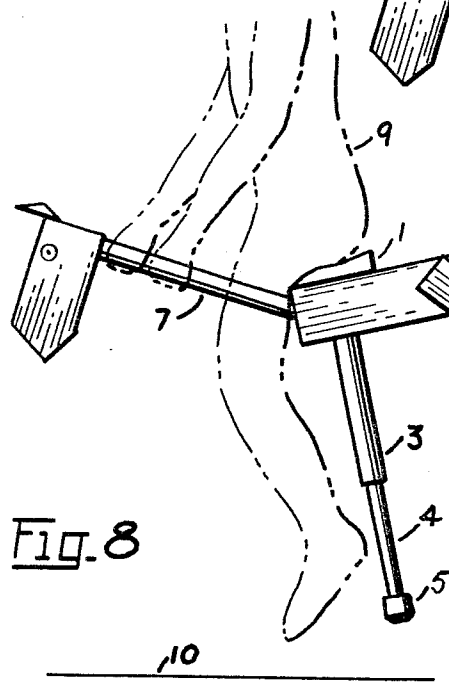

Fig. 8

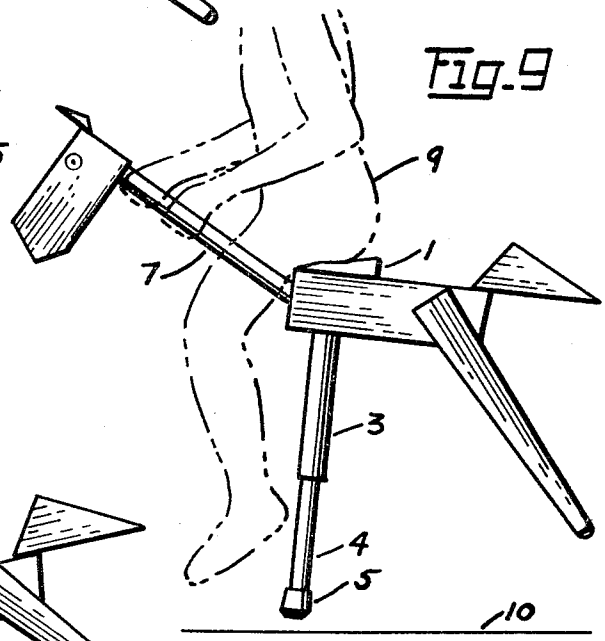

Fig. 9

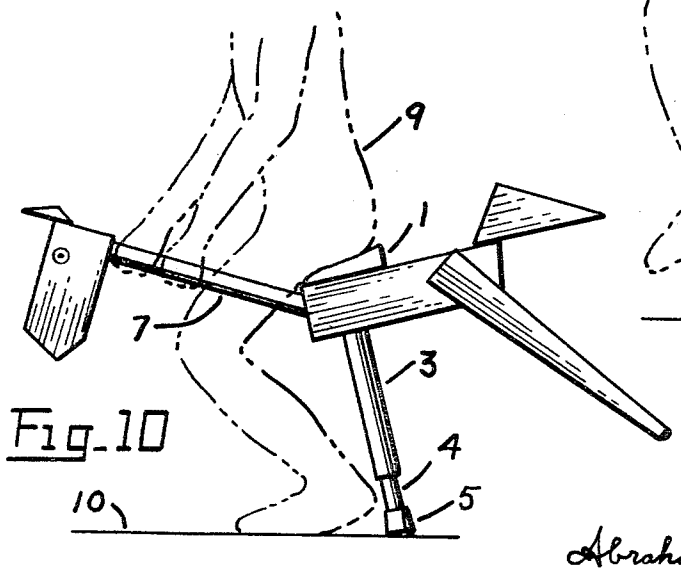

Fig. 10

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United States Patent Office 3,319,970 Patented May 16, 1967

3,319,970

WHEELLESS RIDABLE TRAVELING TOYS

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Filed June 3, 1965, Ser. No. 460,901
5 Claims. (Cl. 280—1.13)

My invention relates to ridable toys of the class that does not employ wheels to provide traveling motion capability. It is the object of my invention, to provide such a device that is readily controllable by the rider for easy, rapid, galloping transportation or for stable sitting.

It is another object of my invention to provide a device that permits play activity simulating the experience of riding an animal such as a horse. The device, therefore, may have the configuration of an appropriate animal, such as a horse, to reinforce the illusion of riding associated with the use of my invention.

In the accompanying drawings, examples of my invention are disclosed for purposes of illustration. It will be obvious to anyone skilled in the art, however, that my invention is not limited to the specific examples shown but is susceptible to various changes and modifications without departing from its novelty or intent as embraced within the claims.

FIGURE 1 is a side view of one embodiment of my invention. FIGURE 2 is an enlarged, cut-away view of the resilient strut of FIGURE 1 to show its structure in detail although not to scale. FIGURE 3 is a side view and FIGURE 4 is the corresponding front view of an alternate construction of control handle of my invention. FIGURE 5 is a side view and FIGURE 6 is the corresponding front view of another example of the control handle. FIGURES 7 through 10 show sequentially the several successive movements of the device of my invention during the operation thereof to be of assistance in clarifying the mode of operation set forth in the specification.

Referring to the figures, a seat means 1 is fastened on the top side and near the front of a body element 2. A resilient strut means 3, 4 extends downward from beneath the seat means 1 to which it is connected by the body element 2. As shown in this example, the sliding member 4 of the resilient strut means is provided at its lower extremity with a flat-bottomed shoe 5 of some cushioning material such as rubber for abutting the ground 10 as will be described later. Two hind-leg pieces 6, of which only one is visible in the drawing, are fastened to the rear end of the body element 2 and extend downward, rearward and outward from both sides of said body element. The downward extent of said hind-leg pieces is appreciably less than the downward extent of the resilient strut means 3, 4 for reasons that will be explained later. A control-handle means 7 is fastened to and extends forward and upward from the body element 2. The said control-handle means terminates in a head piece 8.

A rider, as indicated by a ghosted outline 9, can sit comfortably on the seat means 1 with his legs straddling the control-handle means 7 and his feet pressing against the ground 10. That portion of his weight, that is not resting on his feet, is being carried through the seat means 1 to the ground 10 by the axially resilient strut means 3, 4 which, by virtue of its axially unbending structure, permits the rider to achieve a secure support for stable sitting by bracing his legs. As shown in FIGURE 1, the rider 9, by grasping the control-handle means 7 with both hands in tandem is able to apply readily a couple or torque to the device of my invention in a fore-end-aft vertical plane by pulling on the said control-handle means with one hand while against the control-handle means with the other hand. Such torque can be applied readily by the rider to the device of my invention by virtue of the structural

design of the said control-handle means and is essential for the proper operation of the device of my invention as will be explained later.

When it is desired to park the device of my invention, it may be tilted backward until the bottoms of the hind-leg pieces 6 come in contact with the ground and form, together with the axially unbending axially resilient strut means 3, 4, a stable tripod support in the parked position for the device of my invention. The relative position of the device of my invention to the ground in the parked position is shown by the new ground line 11.

The control-handle means 7 is shown attached to the body element 2 by being fastened in a socket 12 in the said body element. Where not otherwise described, the mentioned fastening together of parts is to be understood to be in accordance with common practice and to be employing suitable fastening means such as screws, bolts, nails or glue. The tubular member 3 of the resilient strut means is held in the device of my invention as described in the example disclosed by being inserted through a bore in the body element 2, the said bore having a counterbored enlargement 13 at its upper end to receive a flared enlargement 14 of the tubular member 3. The said flared enlargement 14 prevents the tubular member 3 from slipping out the bottom of the said closely fitting surrounding bore. The seat means 1 restrains the said tubular member 3 from slipping out the top of the said bore. A helical compression spring 15 is positioned within the said tubular member 3, and is thereby capable of acting to press apart the bottom of the seat means 1 and the top of the sliding member 4 thus providing resiliency to the strut 3, 4. Two hook elements 16 are provided along the center line of the tubular member 3, one hook element being fastened to the underside of the seat means 1 and the other hook element being fastened to the top side of the sliding member 4, both the said hook elements being positioned within the free core space of the surrounding helical compression spring. An elastic member 17 is stretched between and is connected to the said two hook elements 16. The said elastic member 17 couples the sliding member 4 to remain within the tubular member 3, although free to reciprocate therein, and thereby contains the helical compression spring 15 within the tubular member 3 and between the seat means 1 and the sliding member 4. For simplicity of illustration the elastic member 17 is shown in this example of my invention as a heavy rubber band but it is not so limited and may be instead a helical tension spring or the like. Although the assembly of parts 3, 4 and 15 comprising the resilient strut is shown in this example of my invention to be held together by the elastic member 17 and the hook elements 16, the resilient strut as employed in the device of my invention shall not be deemed so limited but may employ other means common in the art for such purpose such as abutting shoulders at the bottom of the tubular member 3 and at the top of the sliding member 4. Likewise, although the assembly of parts 3, 4 and 15 comprising the resilient strut is shown in this example of my invention to have the helical spring 15 enclosed within the tubular member 3, the resilient strut as employed in the device of my invention shall not be deemed so limited but may employ other configurations common in the art such as having the helical spring external to the tubular member, encircling the sliding member and abutting between the bottom of the tubular member and the top of the shoe element which forms an enlargement at the bottom of the said sliding member.

Other embodiments of my invention than the configuration illustrated in FIGURE 1 might employ a more realistic representation of a horse than that shown in FIGURE 1. In such other embodiments, it might be inconvenient or undesirable to employ the design of control-handle means shown as part 7 in FIGURE 1. My invention en-

compasses, however, other designs of control-handle means that enable the rider to apply torgue in a fore-and-aft vertical plane to the device of my invention. One example of such another design of control-handle means is illustrated in FIGURES 3 and 4. Another example is illustrated in FIGURES 5 and 6. In FIGURES 3 and 4 the alternate design of control-handle means comprises two separate handles **18**, one for each hand of the rider, spaced apart a distance as measured in the fore-and-aft vertical plane thus providing the moment arm for enabling the rider to apply torque to the device of my invention in a fore-and-aft vertical plane by pulling on one of the said separate control handles **18** with one hand while pushing on the other of the said separate control handles with the other hand. Handles **18** are shown as having their axes perpendicular to the fore-and-aft vertical plane and being fastened to the head piece **8** one on each side. Although the separate control handles **18** are shown in this example of my invention as having their axes perpendicular to the central fore-and-aft vertical plane of the aforesaid toy device, my invention shall not be deemed so limited but may employ separate control handles spaced apart as described but having any orientation of their said axes as adapted for being grasped. In FIGURES 5 and 6 the other design of control-handle means comprises a cross-piece **19** to which are fastened two handles **20**, one for each hand of the rider, having their axes parallel to the fore-and-aft vertical plane but being spaced apart laterally. The gripping lengths of handles **20** being parallel to the fore-and-aft vertical plane enable the rider to apply torque to the device of my invention in the fore-and-aft vertical plane by exerting vertical bending effort in his wrists.

In this specification, the fore-and-aft vertical plane is defined as substantially coincident with the plane of symmetry of the device of my invention, and likewise any direction mentioned is intended to be taken with respect to the orientation of the said device of my invention.

The manner of operating the device of my invention is as follows:

Referring to FIGURE 1, the rider as indicated by the ghosted outline **9** sits upon the seat means **1**, his weight compressing the helical compression spring **15** and thereby contracting the axially resilient strut means **3**, **4** which is abutting the ground **10** with its shoe **5**, his legs, partially bent at the knees, straddling the control-handle means **7**, his feet resting on the ground **10** and his hands in tandem grasping the control-handle means **7**. He sits securely stabilized by his feet together with the axially unbending structure of the axially resilient strut **3**, **4** braced in frictional engagement with the ground **10** and by his grip on the control-handle means **7** in readiness to begin play activity with the device of my invention. Referring now to FIGURE 7, he begins by tilting himself forward, pivoting about his feet which are in frictional engagement with the ground **10**. At the same time, by his grasp of the control-handle means **7**, he draws the seat means **1** forward to remain in functional engagement with himself. Thus the rider **9** tilts the device of my invention forward, pivoting it about the shoe **5** which is abutting the ground **10** and in frictional engagement therewith, while still readily being able to maintain stability of position as before. The contracted, axially resilient strut **3**, **4** thereupon is likewise in a forward tilt from the shoe **5**, and, by virtue of its axially unbending structure, directs the pressure of the compressed helical spring **15** in accordance with the said tilt so as to provide a forward force therefrom on the rider, through the seat means **1**, as well as an upward force to assist him in making his subsequent forward and upward leaping motion. Next, as shown by FIGURE 8, the rider thrusts himself forward and upward in a leaping motion by energetically straightening his legs, thereby suddenly increasing the pressure applied by his feet against the ground **10** substantially in the direction of his aforesaid forward tilt. He is assisted forwardly and upwardly in

said leaping motion by the concurrent energetic extension of the resilient strut **3**, **4** under pressure of the relaxing compression spring **15**. Thus he is able to temporarily leave contact with the ground **10** but he maintains the seat means **1** in functional engagement with himself by pulling upwards on the control-handle means **7** with the hand nearer to the seat means **1** while pressing against the said control-handle means with the other hand. By so applying lift force and rear-end-up torque to the device of my invention through the control-handle means **7**, the rider **9** prevents the seat means **1** from falling away from him uncontrollably as he rises away from the ground, which it would do were said lift force and torque absent. Were the device limited so that the rider is unable to apply the aforesaid lift force and torque, he would rise higher than the device, which is being thus limited, because he is being lifted by the extending of his legs in addition to the extending of the resilient strut, whereas the said limited device is being lifted only by the extending of the resilient strut. Were the device still limited by being provided with the usual form of handle means, comprising a crosswise disposed rod, the rider would be enabled thereby to apply a lift force but not to apply the torque required to balance the weight of the still limited device which has a moment arm rearward of his grasp and thereby would cause the seat means to fall away from functional engagement with him when he rises in a leaping motion, and likewise would cause the shoe at the bottom of the resilient strut means to reengage the ground before he completes the said leaping motion and be dragged along the ground thereby, thus causing a forward tilt of the said limited device. Then, as the rider completes the said leaping motion with this said limited device, he must skilfully guide himself to functionally reengage the seat means safely without toppling forward because of the aforesaid forward tilt and his own forward momentum. The structural design of the control-handle means **7** of the device of my invention, however, provides the rider with the essential capability of readily controlling the tilt and relative position of the said device with respect to himself so as to avoid the difficulties just described hereinabove which would hinder the operation of a toy of the class such as described in this specification, and the enjoyment thereof.

Following the forward and upward maneuver with the device of my invention as shown in FIGURE 8, the rider, as shown in FIGURE 9, prepares himself to reengage contact with the ground as he would do normally in any leaping motion; he draws up his legs and advances his feet with respect to the rest of his body. Simultaneously however, he draws both his arms inward towards himself and upwards, thus rotating the device of my invention about the seat means **1** so as to raise the front end of the said device while still maintaining the said seat means in functional engagement with himself by his grasp of the control-handle means **7** as before. The resilient strut **3**, **4** is thereby tilted backwards from the shoe **5**, as shown in FIGURE 9, in preparation for impacting the ground **10** and accommodating the forward momentum of the rider and device thereupon. The amount of the said backward tilt to be provided is not critical and is readily and almost instinctively learned by the rider similarly as in learning to swing a crutch in the utilization thereof. Next, the shoe **5** of the device of my invention, and the feet of the rider immediately thereafter, reengage frictional contact with the ground **10** while the rider and the said device are in the attitude shown by FIGURE 9. The impact encountered thereupon causes the weight of the rider to settle energetically upon the seat means **1** and contract the resilient strut **3**, **4** further than in the at-rest position which was shown in FIGURE 1, allowing him to bend his legs at the knees further than shown in FIGURE 1, his forward momentum carrying him into a forward tilt, pivoting about his feet which are set upon the ground, his grasp of the control-handle means **7** drawing the said seat means forward still in functional engagement with himself and

tilting the device of my invention forward on the shoe 5 as shown in FIGURE 10. He is poised now to make the next forward and upward leaping motion, similar to the maneuver shown in FIGURE 8, as the compression spring 15 begins to rebound energetically from its contracted condition. Thus he can continue to operate the device of my invention, by repating the sequence of maneuvers shown in FIGURES 8, 9 10 and described hereinabove, to travel forward easily, safely and rapidly at will and at the same time to experience pleasurable, galloping action.

Should the rider wish to accomplish a turn, he pushes harder with the foot on the outside of the turn and applies turning torque to the control-handle means 7 during the traveling maneuver. Little skill and effort are required of the rider to operate the device of my invention.

Since the hind leg pieces 6 do not extend downward far enough to touch the ground while the device of my invention is being operated as just described, they do not affect the operation of the device of my invention and but are included in the structure to provide for parking as described before. However, the hind leg pieces 6 may be constructed so as to extend far enough to touch the ground during operation without adverse effect.

The resilient strut means 3, 4 is described as having a flat-bottomed shoe 5 to bear against the ground. Although the flat bottom of the said shoe provides a measure of stability to the device of my invention when the rider is sitting at rest upon it and thus adds to his comfort, my invention is not so limited but may employ different configurations of bottoms for the resilient strut means 3,4 without departing from the novelty or intent of my invention.

The resilient means 3, 4 is described in this specification as comprising a columnar single telescoping strut having a tubular member 3 and a sliding member 4 with an enclosed helical compression spring 15. Although the resilient strut means as described in this specification represents a preferred configuration, my invention is not so limited but may employ any equivalent configuration of resilient strut means as embraced within the claims.

Having thus described my invention, what I claim as new and desire to be secured by Letters Patent is:

1. In a toy of the class described, the combination of a seat means adapted to carry a rider, a single, axially resilient, axially unbending strut means structurally connected to the underside of the said seat means and extending axially downwards therefrom, and a control-handle means structurally connected to the underside of the said seat means and positioned forward therefrom by a distance adapted for the unhindered grasp of a seated rider, the said resilient strut means being adapted to press its bottom end against the ground and having a length adapted to permit the said seated rider to press his feet against the ground when in an at-rest position thereon, and the said control-handle means providing grippable, structural portions thereof for each hand of the said rider, the said grippable, structural portions being spaced apart a distance as measured in the central fore-and-aft vertical plane of the said toy.

2. In a toy of the class described, the combination of a seat means adapted to carry a rider, a single, axially resilient, axially unbending strut means structurally connected to the underside of the said seat means and extending axially downwards therefrom, the said resilient strut means being adapted to press its bottom end against the ground and having a length adapted to permit a seated rider to press his feet against the ground when in an at-rest position thereon, and a control-handle means comprising a shaft structurally connected to the underside of the said seat means and extending axially forward therefrom substantially in the central fore-and-aft vertical plane of the said toy, the said shaft having a length adapted for unhindered grasping by both the hands, in tandem, of the said seated rider.

3. In a toy of the class described, the combination of a seat means adapted to carry a rider, a single, axially resilient, axially unbending strut means structurally connected to the underside of the said seat means and extending axially downwards therefrom, the said resilient strut means being adapted to press its bottom end against the ground and having a length adapted to permit a seated rider to press his feet against the ground when in an at-rest position thereon, and a control-handle means comprising a pair of grippable, structural elements spaced apart a distance as measured in the central fore-and-aft vertical plane of the said toy and being fastened one on each side of structure that is connected to the underside of the said seat means and extends forward and upward therefrom, substantially in the said central fore-and-aft vertical plane, to position the said grippable, structural elements at such a distance from the said seat means that is adapted for the unhindered grasping by the said seated rider.

4. In a toy of the class described, the combination of a seat means adapted to carry a rider, a single, axially resilient, axially unbending strut means structurally connected to the underside of the said seat means and extending axially downwards therefrom, the said resilient strut means being adapted to press its bottom end against the ground and having a length adapted to permit a seated rider to press his feet against the ground, when in an at-rest position thereon, and comprising a socket member and a sliding member coupled therewith, the said sliding member extending beyond the said socket member and adapted to reciprocate therein against the resistance of a spring means, and a control-handle means structurally connected to the underside of the said seat means and positioned forward and upward therefrom by respective distances adapted for the unhindered grasp of the said seated rider, the said control-handle means providing grippable, structural handholds thereof for each hand of the said seated rider, the said handholds being spaced apart a distance as measured in the central fore-and-aft plane of the said toy.

5. In a toy of the class described, the combination of a seat means adapted to carry a rider, a single, axially resilient, axially unbending strut means structurally connected to the underside of the said seat means and extending axially downwards therefrom, and a control-handle means structurally connected to the underside of the said seat means and positioned forward and upward therefrom by respective distances adapted for the unhindered grasp of the said seated rider, the said resilient strut means being adapted to press its bottom and against the ground and having a length adapted to permit a seated rider to press his feet against the ground when in an at-rest position thereon, and the said control-handle means comprising a pair of grippable structural elements having their axes laterally spaced and substantially parallel to the central fore-and-aft vertical plane of the said toy.

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LEO FRIAGLIA, *Primary Examiner.*

UNITED STATES PATENT OFFICE

CERTIFICATE OF CORRECTION

Patent No. 3,319,970 May 16, 1967

Abraham Joseph Sherman

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 68, "end" should read -- and --; line 70, after "against" insert -- pushing --. Column 5, line 7, "repating" should read -- repeating --; line 19, cancel "and". Column 6, line 53, "and", first occurrence, should read -- end --.

Signed and sealed this 12th day of August 1969.

(SEAL)
Attest:

Edward M. Fletcher, Jr.
Attesting Officer

WILLIAM E. SCHUYLER, JR.
Commissioner of Patents