July 9, 1935. W. D. FULLER 2,007,852

EXERCISER

Filed Aug. 8, 1932

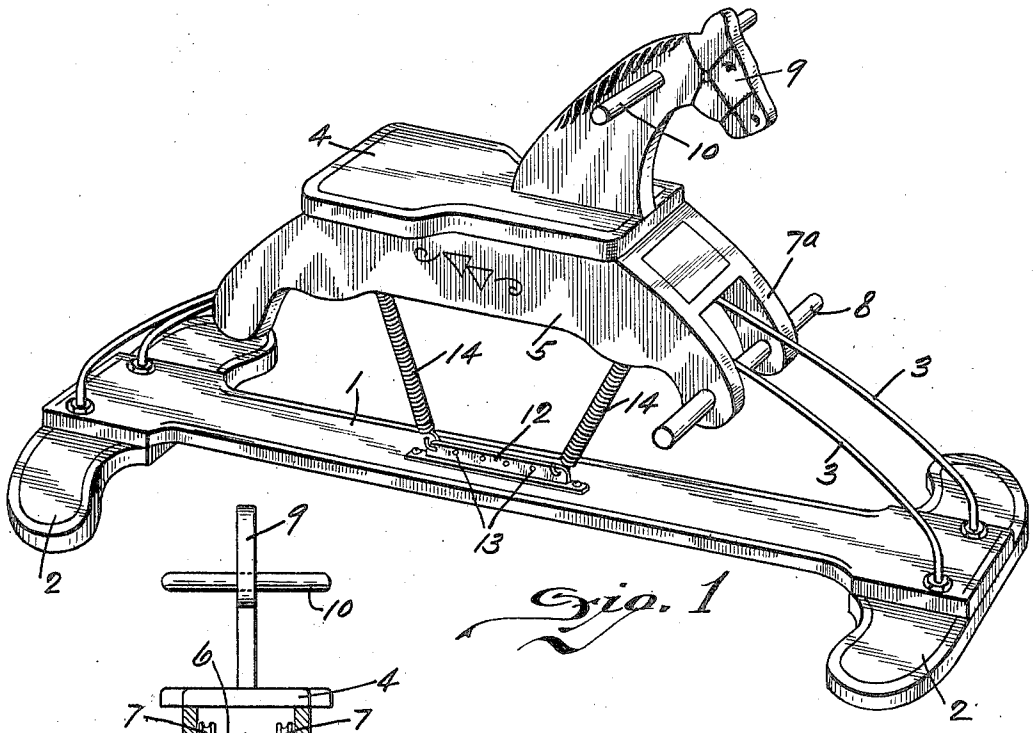


Fig. 1

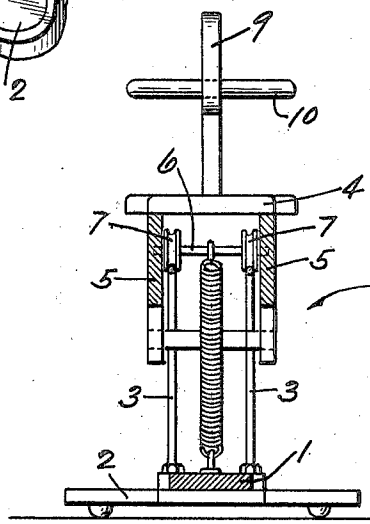


Fig. 3

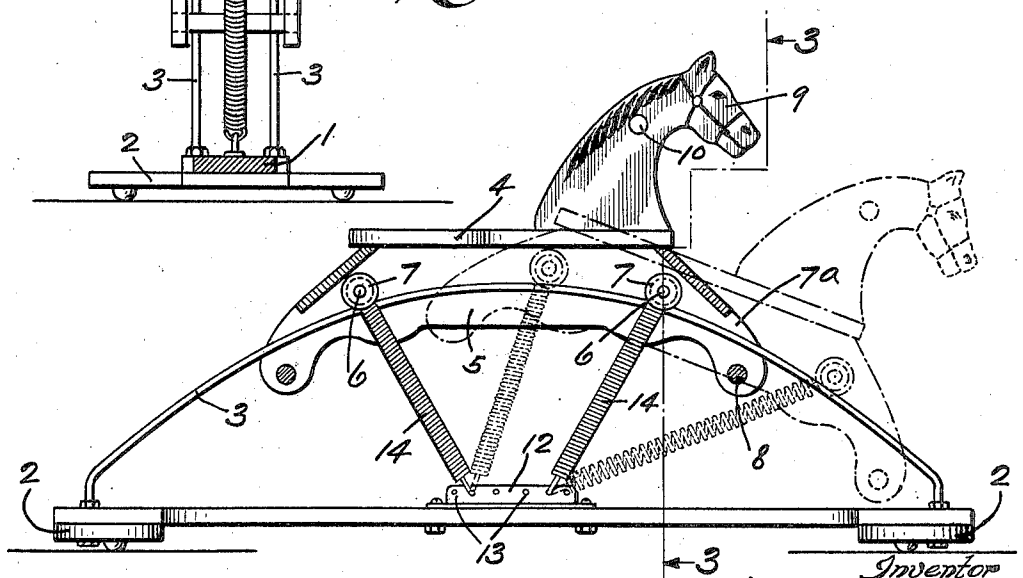


Fig. 2

Inventor
William D. Fuller

By Walker and Dybvig

Attorneys

Patented July 9, 1935 2,007,852

UNITED STATES PATENT OFFICE

2,007,852

EXERCISER

William D. Fuller, Springfield, Ohio

Application August 8, 1932, Serial No. 627,888

12 Claims. (Cl. 272—52)

This invention relates to an exercising device especially adapted for use of children, and more particularly to a spring tensioned oscillating carrier or seat to be propelled to and fro by swaying motion of the body of the occupant. To afford attractive appearance and to hold the interest of children, the carrier or seat is provided with a facsimile horse head, thus producing a familiar "hobby horse" effect, although it is to be understood that other figures or shapes may be substituted for the horse head design, or that such feature may be entirely omitted especially upon devices of larger size adapted for older persons, and that, therefore, the present invention is not limited to the particular design illustrated.

The object of the invention is to provide an exercising device of simple character and construction, capable of being economically manufactured, possessing uniform to and fro motion, easily actuated but requiring therefor beneficial muscular effort of the operator, of pleasing appearance, and unlikely to get out of repair.

A further object of the invention is to provide a construction affording a relatively long low to and fro curvilinear motion, against a yielding resistance, first in one direction and then in the other.

A further object of the invention is to provide a fixed guiding means for the traveling carrier or seat upon which the carrier or seat rolls first in one direction and then in the other.

A further object of the invention is to provide improved yielding resistance to the to and fro motion, and to provide for varying the tension and reaction effect of such yielding resistant devices.

A further object of the invention is to provide a curvilinear track having a radius somewhat greater than the height of the track above the floor and to provide retractive tension springs yieldingly resisting the to and fro movement of the carrier or seat upon such track.

A further object of the invention is to provide a hobby horse type of device substantially as shown and described.

With the above primary and other incidental objects in view, as will more fully appear in the specification, the invention consists of the features of construction, the parts and combinations thereof, and the mode of operation, or their equivalents, as hereinafter described and set forth in the claims.

Referring to the drawing, wherein is shown the preferred but obviously not necessarily the only form of embodiment of the invention, Fig. 1 is a perspective view of the assembled exercising device, forming the subject matter hereof. Fig. 2 is a side elevation partly in section, illustrating the relative proportions of the parts and showing by solid lines the seat or carrier in its medial or normal position, and by dotted lines the carrier actuated to one limit of its path of travel against the tension of the retracting spring. Fig. 3 is a vertical sectional view on line 3—3 of Fig. 2.

Like parts are indicated by similar characters of reference throughout the several views.

Referring to the drawing, 1 is a base or platform upon which the structure is supported, having at its ends transverse laterally extending rests or supports 2 which prevent the device from tilting laterally. To prevent the device marring the floor, these terminal rests or supports 2 are preferably, though not necessarily, provided with rubber feet or buttons on their under side. Extending from end to end of the base 1 and connected thereto at their extremities are two parallel curvilinear rods 3—3 disposed in laterally spaced relation and affording an arcuate track upon which the seat or carrier reciprocates to and fro. While the track rods 3, which are rigid or unyielding, are shown in the drawing as comprising segments of regular or uniform curvature, these curvilinear track rods may be variously shaped, or the curvature thereof may be ununiform to give different effect. The rigid track rods 3, as illustrated, are proportioned to afford a broad, low arch, the radius of which is of somewhat greater extent than the height of such arch above the base 1.

Mounted upon the arch shaped track members 3 for to and fro traveling motion is a seat or carrier 4 having dependent side or skirt portions 5 which form, in effect, an inverted box. Mounted interiorly of the carrier beneath the seat 4 and adjacent to the forward and rear ends thereof, are transverse shafts 6 carrying grooved rollers 7 engaging and traveling upon the parallel track rods 3. At the forward end the dependent side member or skirt portion 5 is extended downwardly and forwardly into parallel arms 7a which carry a transverse rod 8 forming foot rests at opposite sides of the device. A facsimile horse head 9 or other suitable figure is mounted at the forward end of the seat or carrier and is provided with a transverse rod 10 forming handle bars to be grasped by the operator.

Located medially upon the platform or base 1 beneath the arcuate track bars 3 is a vertically disposed plate or attachment bracket 12 having

therein a series of spaced holes or notches 13 for the engagement of a pair of helical retractile springs 14, the opposite ends of which are connected respectively with the transverse shaft 6 of the carrier. The springs 14 are divergently disposed relative to each other and to the perpendicular. By engaging the lower ends of the springs 14 in different holes or notches 13 of the attachment bracket 12, the relation of the springs to each other and to the traveling carrier may be varied thereby varying the resistance and their retractive action.

The operator, sitting upon the seat 4 with his feet resting upon the transverse foot rests 8, by swinging his body to and fro and thereby overbalancing the device first in one direction and then in the other, causes the carrier or seat to roll to and fro upon the track rods 3. The carrier is held to the rods 3 in its travel movement by the retractive springs 14 which are thereby placed under tension. The springs are alternately tensioned unequally. The curvature of the rods 3 is such that as the carrier or seat travels forwardly and downwardly, the forward spring is subjected to greater tensioning strain than the rear spring, and upon reverse movement, as the seat or carrier travels downwardly and rearwardly, the rearmost spring is subjected to the greater tension. The retractive movement of the springs materially assists in returning the carrier or seat upwardly upon the arch shaped track rods 3 to its normal elevated medial position, beyond which the momentum will carry the operator and seat in a continued downward movement, first in one direction and then in the other. The movement of the carrier 4 with respect to the support may be referred to as a gliding movement wherein the carrier travels through a path substantially parallel to the curvature of the tracks.

While various methods of securing the arcuate track rods to the platform or base may be utilized, as a simple and economical method of attachment, the ends of the rods are screw threaded and passed vertically through the base or platform 1 and preferably also through the transverse outrider members 2 and are secured by spaced nuts upon such threaded portions at opposite sides of the base or platform.

As before mentioned, the device may be constructed in various sizes, the shape of the arcuate track rods 3 may be varied, and the horse head design may be entirely omitted or other designs of standard to carry the handle bar may be substituted.

From the above description it will be apparent that there is thus provided a device of the character described possessing the particular features of advantage before enumerated as desirable, but which obviously is susceptible of modification in its form, proportions, detail construction and arrangement of parts without departing from the principle involved or sacrificing any of its advantages.

While in order to comply with the statute, the invention has been described in language more or less specific as to structural features, it is to be understood that the invention is not limited to the specific features shown, but that the means and construction herein disclosed comprise the preferred form of several modes of putting the invention into effect, and the invention is therefore claimed in any of its forms or modifications within the legitimate and valid scope of the appended claims.

Having thus described my invention, I claim:

1. In a device of the character described, a support including a vertically disposed convex guide track of substantially uniform curvature, a carrier having rollers mounted thereon engaging said guide tracks for to and fro gliding motion up and down the opposite sides of the convex guide alternately, retractile tensioned springs spaced apart in tandem relation in the direction of travel of the carrier interconnecting the carrier with the support in approximate relation with the vertical radius of the convex guide track and subject to to and fro swinging motion in unison with the travel of the carrier, said springs being simultaneously tensioned by the movement of the carrier in each direction.

2. In a device of the character described, a support vertically disposed convex tracks, a traveling carrier mounted above the tracks for to and fro gliding motion, springs swingingly mounted at approximately mid length of the range of movement in tandem relation relative to the direction of travel of the carrier, each yieldingly resisting the movement of the carrier in each direction to different degree and swinging to and fro in unison with the motion thereof.

3. In a device of the character described, a support including a vertically disposed rigid curvilinear track of uniform convex contour and comprising substantially a segment of a circle, a seat mounted thereon for travel motion to and fro past the crown of the convex track and down the opposite side thereof alternately, and a pair of upwardly divergently disposed tensioned springs arranged in tandem relation in the direction of the travel motion and fixedly attached at one end beneath the track and attached in more widely spaced relation at their opposite ends to the carrier against the yielding resistance of which the carrier is movable first in one direction and then in the other, said springs being subject to swinging motion in unison with the to and fro movement of the seat and simultaneously tensioned to different degree by the movement of the seat in each direction, the relative tension of the springs being reversed at each alternation of the direction of movement of the seat.

4. In a device of the character described, a support including an arch shaped track, a carrier mounted upon the convex side of the track for to and fro gliding motion thereon, said carrier including handle bars and a foot rest, a pair of helical tension springs disposed in spaced relation aligned with the direction of travel of the carrier adjustably secured at one end of each beneath the track for adjustment in the direction of travel of the carrier, the other end of each of the springs being attached to the carrier, and the advance spring in the direction of advancement exerting retractive movement on the carrier as it approaches the extremity of its path of travel.

5. In a device of the character described, a support including an upright arch shaped continuous track, a carrier mounted upon the convex side of the track for to and fro gliding motion thereon, said carrier including handle bars and a foot rest, a pair of divergently disposed helical tension springs disposed in tandem relation in the direction of movement of the carrier adjustably secured beneath the track for adjustment in the direction of the path of travel of the carrier independently of each other, the opposite ends of the springs being attached to the carrier and simultaneously exerting unequal retractive ten-

sion thereon as the carrier approaches the limit of its travel first in one direction and then in the other.

6. In a device of the character described, a support including an upright convex track, a carrier mounted for to and fro gliding motion thereon, a longitudinally disposed attachment bracket on said support, and a pair of helical tension springs disposed in tandem spaced relation aligned with the direction of travel motion of the carrier secured at one end to the carrier and having their opposite ends adjustably engaged with the bracket in spaced upwardly diverging relation with each other and simultaneously tensioned to unequal degree by the movement of the carrier whereby the advance spring in the direction of movement will exert the greater retractive movement upon the carrier.

7. In a device of the character described, a support including a pair of parallel upright arch shaped rigid track members, a carrier including handle bars and a foot rest, rollers mounted upon the carrier and engaging the convex side of the parallel rigid track members for to and fro gliding motion, and springs simultaneously yieldingly resisting the movement of the carrier differentially as it approaches the limits of its range of travel in each direction, said springs being mounted for swinging motion to and fro past vertical position in unison with the reciprocatory movement of the carrier.

8. In a device of the character described, a support including a pair of parallel upright arch shaped rigid track members, a carrier including handle bars and a foot rest, rollers mounted upon the carrier and engaging the convex side of the parallel rigid track members for to and fro gliding motion, and a pair of resilient retracting members simultaneously tensioned to different degree by the movement of the carrier first in one direction and then in the other, said retracting members being aligned in the direction of travel of the carrier.

9. In a device of the character described, a base, a pair of upright arch shaped rigid parallel track bars secured thereto, a reciprocatory carrier including handle bars and a foot rest, rollers on said carrier engaging the convex side of the track bars for to and fro gliding motion, a pair of divergently disposed retractive springs arranged in tandem relation aligned with the direction of travel of the carrier and attached at their lower ends of the base and attached at their upper ends in spaced relation to the carrier, said spring simultaneously resisting the movement of the carrier first in one direction and then in the other.

10. In a device of the character described, a supporting structure including an upright rigid arch shaped track having a radius of greater extent than the altitude of such track, a traveling carrier mounted upon the convex side of the track for to and fro motion on the track, said carrier having a foot rest and handle bars, and a helical tension spring having one end attached beneath the track in proximate relation to its vertical radius for to and fro swinging motion in unison with the gliding motion of the carrier to which its other end is attached, said spring being placed under tension by the travel movement of the carrier upon the track away from medial position in either direction, and tending to return the carrier to such position for further movement therebeyond under momentum against the tension of the spring.

11. In a device of the character described, a base, a pair of rigid parallel upright arch shaped track rods of uniform regular curvature comprising substantially segments of a circle carried thereby, a traveling carrier having handle bars and foot rests, rollers on the carrier engaging the convex side of the track rod for to and fro gliding motion, and swinging retractive means pivotally mounted eccentrically in relation with the arch shaped track rods but in proximate relation with the vertical radius thereof and likewise connected to said traveling carrier, whereby the retractive means is elongated first in one direction and then in the other by the movement of the carrier upon said track rods and yieldingly resisting the motion of the carrier first in one direction and then in the other.

12. In a device of the character described, a pair of upright rigid arch shaped parallel spaced track members, a traveling carrier mounted thereon for to and fro gliding motion, and a pair of retractive springs disposed in tandem relation aligned with the direction of travel of the carrier, each having one end fixed within the area enclosed by the upright arch shaped track members and in eccentric relation with the center thereof and the other ends attached to the carrier, which by their retractive tendency hold the carrier upon the track members and simultaneously yieldingly resist to different degree its travel motion in alternating directions thereon.

WILLIAM D. FULLER.