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(54) **Semi-stable balance board toy.**

(57) The present invention facilitates teaching a young child to balance by providing fore-to-aft stability, thus only requiring the child to balance side-to-side over a fulcrum. A semi-stable symmetric fulcrum 8 smoothly extends beneath a flat standing platform 4, blending smoothly from a fulcrum point to horizontal lower surfaces parallel to, and in close proximity with, opposed ends of the standing platform. The fulcrum generally corresponds in width to the width of the standing platform and is substantially flat across this width so that the flat smoothly curving surface over the fulcrum defines a semi-stable rocking surface which facilitates side-to-side motion, yet hinders fore-to-aft motion.

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FIELD OF THE INVENTION

This invention pertains to a novel, improved balancing toy for young children. More particularly, this invention relates to a balancing toy which when stood upon by children, improves their ability to laterally balance.

BACKGROUND OF THE INVENTION

Foot balance boards of various designs have been used as amusement toys. Such boards utilize spherical, hemi-spherical, or at least partially hemi-spherical fulcrums. These fulcrums are either fixed beneath a standing platform or, in the case of spherical fulcrums, are free to move underneath the standing platform. Thus if one is standing on the standing platform of a balance board, it is inherently difficult to balance because the board is free to pivot both side-to-side and end-to-end.

Since the balancing board fulcrums are spherical or generally hemi-spherical in the prior art, such balance boards require very sophisticated balancing skills from the user. Balancing skill both side-to-side and end-to-end is required simultaneously in order to stay balanced above the fulcrum. Consequently, a young child initially attempting to develop balancing skills would find this type of balance board difficult, if not impossible, to use. Such toys discourage the child, often to the point that the toy is abandoned. Further, to allow a young child to use this type of balance board could quite conceivably result in injury.

Prior art balancing boards confining motion to one vertical plane about the fulcrum, that is, to end-to-end motion, have used a linear array of hemi-spherical fulcrums. Use of a linear array of hemi-spherical fulcrums limits the size of each hemi-sphere that may be fitted under the standing platform, so that the height of the fulcrum is limited accordingly. Further, the use of plurality of hemi-spherical fulcrums limits the extent to which a rocking surface may be tailored so as to be suitable for children at a pre-defined stage of development.

None of the balance boards in the prior art are particularly suited for stacking one on the other to increase the level of balance difficulty or adapted to be reclined upon by the user.

The following patents disclose various balance boards and rocking chair devices:

Patent No.	Inventor
3,451,672	Kazdan
2,470,473	Daellenbach
7,901,529	Van Zaale
3,150,189	Mutius
842,462	Grafin
4,491,318	Francke
4,099,773	Chang
3,862,768	England
3,612,520	Chang
3,586,321	Gehrke

Kazdan discloses an elongated, rigid, rocking amusement device with a rounded downwardly protuberant center portion and two outwardly extending end portions which form opposed seat areas. Kazdan also teaches the use of a plastic unitary shell construction and a foamed plastic core. Kazdan does not teach the development of a lateral balancing skill. Nor is his device suitable for permitting the user to lay upon the board and manipulate it.

Mutius teaches a balancing board with a hemi-spherical shaped lower part and a standing surface provided on its upper flat side. The standing surface may be of any shape such as rectangular, or octagonal. Grafin, Chang '520 and Francke also teach balance boards having platforms providing a standing surface over a hemi-spherical shaped lower part. Gehrke merely illustrates a bowl with a flattened bottom and an outwardly projecting flat rim around the circumference of the bowl such that the bowl may be used as a balancing toy by a child standing on and astride the bowl.

Van Zaale discloses a rectangular platform and depending therefrom two linearly arrayed hemi-spherical protrusions. Grafin and England disclose balance boards with free-moving spherical fulcrums. Chang '773 and Daellenbach teach rocking chairs for two or more people having a rocker surface and integral seats formed from the upper opposed ends of the rocker surface.

SUMMARY OF THE INVENTION

An apparatus for developing balance in young children comprising a balance board of plastic unitary foam core shell construction having a flat non-slip standing surface mounted on a platform, and, depending therefrom, on the underside a rounded downwardly protuberant symmetric semi-stable rocking surface.

The invention is directed to a semi-stable balance board having a generally elongated upper surface overlaying a downward projection from the central area of the underside of the upper surface, the bottom end of said projection serving as a fulcrum, said projection comprising at the end removed from the standing surface a rounded rocking surface which confines motion of the platform about said projection to one vertical plane.

The underside of the upper surface of the balance board may be planar at the ends thereof, the under surface smoothly and symmetrically blending inwardly from said opposed ends into a centrally aligned symmetrical downwardly protruding smoothly curved single rocking surface at the lower end of the projection, the rocking surface being generally the width of the upper standing surface and flat across said width.

The smoothly and symmetrically blending rocking surface of the balance board may define in section a generally inverted-bell shaped fulcrum having a laterally extending linear pivot surface, said pivot surface providing substantial lateral stability and semi-stable end-to-end stability. The standing surface may have thereon a non-slip matting.

The radius of curvature of the lower end of the inverted bell-shaped fulcrum may be varied to regulate the degree of skill required by the user to balance the board. The fulcrum tip may be detachable and can be replaced with a tip having a larger or smaller radius of curvature.

DRAWINGS

The attached drawings disclose a specific embodiment of the invention, but which embodiment should not be construed as limiting the spirit or scope of the invention in any way.

Figure 1 illustrates a top plan view of the balance board standing surface with rubber matting overlying opposed ends of the standing platform.

Figure 2 illustrates a front elevation view depicting the standing platform and the semi-stable rocking surface fulcrum.

Figure 3 illustrates a section view taken along section line A-A of Figure 2 of the standing platform and rocking surface.

Figure 4 illustrates a front elevation view of an alternative design of standing platform.

Figure 5 illustrates a front elevation view of a second alternative design of standing platform.

Figure 6 illustrates a front elevation view of a third alternative design of standing platform.

DETAILED DESCRIPTION OF A SPECIFIC EMBODIMENT OF THE INVENTION

Increasingly today, children's toys require a well developed sense of balance. Toys such as bicycles, skateboards, and the like are becoming increasingly more sensitive to shifts in the child user's weight over the toy's center of balance. Also, use of toys requiring balance is often combined with both high rates of forward speed and, unfortunately, proximity to rapidly moving potentially injurious motor vehicle traffic.

Young children's play, of course, develops all of the physical senses which, although taken for granted in later life, are essential to the child functioning normally in today's society. Most toys available today are advanced in nature. Thus, young children today are too often introduced to toys which require a developed sense of balance before they have had a chance to develop such a sense. This often results in injury to the child until, by trial and error, the required sense of balance is developed.

Conventional toys have to some extent filled the gap between learning to walk and learning to balance upon wheeled, moving balancing toys such as bicycles or skate boards. For example, rocking chairs introduce children to a sense of motion requiring balance, however, the nature of a rocking chair is such that no active balance control is required and so none is developed. On the other hand balance boards as found in the prior art teach sophisticated balancing skills, the amount of skill required depending on the type of fulcrum used. This invention fills a void in the types of toys available to teach an intermediate level of balance to young children.

This invention also enables a user, such as a child, to lie upon the balance toy, either on the back, side or stomach, to rock end-to-end, while reading or watching T.V., or the like. The balance toy is also useful and entertaining because one toy can be placed cross-wise on another toy and the child can, if inclined,

balance in various directions. The skill level of the combined toy is increased.

The invention, as illustrated in Figures 1, 2 and 3, embodies a balance toy 2 which is constructed of a generally rectangular and substantially flat standing platform 4 overlaid by a rubberized mat 6 to provide a non-slip standing surface. Figure 1 illustrates a top plan view of the standing platform 4 overlaid by rubber mat 6.

Depending from the underside of the standing platform 4 and smoothly blended into lower horizontal surfaces parallel to, and in close proximity with opposed ends of the standing platform, is a centrally aligned downwardly protuberant symmetric semi-stable rocking surface fulcrum 8 having generally the same width as the standing platform 4 and being generally flat across such width. Figure 2 illustrates a front elevation view of the balancing toy 2 showing standing platform 4 overlaid by rubber mat 6 and depending therefrom rocking surface fulcrum 8.

Figure 3 illustrates a section view taken along section line A-A of Figure 2 of standing platform 4 overlaid by rubber mat 6 and depending therefrom rocking surface fulcrum 8. The toy 2 is constructed of a foam core 10 enclosed by a plastic shell 12 which is reinforced by steel rods 14 at each side. While steel rods 14 are shown, it is possible to incorporate strength into the toy 2 by forming reinforcing ribs in the plastic.

The semi-stable rocking surface and fulcrum 8 cooperate to provide a pivot axis which confines motion about the fulcrum 8 to one vertical plane, that is, motion is confined to an end-to-end motion. The underside of the rocking surface 4 is smoothly and symmetrically curved, extending from a centrally aligned downwardly protuberant fulcrum point 8 outwards towards opposed ends of the standing platform 4 so as to blend into a lower horizontal surface located on the underside of the generally elongated standing platform. The rocking surface 4 is generally the width of the standing platform and flat across its width. The generally "inverted-bell" shaped fulcrum 8 defines a rocking surface having substantial stability in the lateral plane of motion and having semi-stable stability about the fulcrum in the end-to-end plane of motion.

It is important to note that the radius of curvature of the fulcrum 8 can be varied to increase or decrease the level of balancing ability required to operate the toy 2. A large radius of curvature is more stable and lowers the skill level required to operate the toy 2. A small radius of curvature increases the required skill level.

An embodiment of the invention further comprises a rubber mat 6 on a substantially flat and generally rectangular standing surface 4. The mat 6 can have a series of protrusions 16 thereon to increase traction between the mat 6 and the soles of the shoes of the user.

Figures 4 and 5 illustrate respectively in front elevation view alternative designs of toy 2. In Figure 4, the radius of curvature of the lower end of the fulcrum 8 is small, which increases the level of skill required to successfully operate the toy 2. Figure 5, on the other hand, illustrates a toy 2 which has a relatively large radius of curvature of the lower end of the fulcrum 8. This version is the easiest to balance of the three versions shown in Figures 1, 2 and 3 as a unit, and Figures 4 and 5 separately.

Figure 6 illustrates a front elevation view of an alternative design of toy 2 which has a detachable fulcrum tip 18. The tip 18, having a designated curvature can be detached and replaced with a tip 18 (not shown) which has either a larger or smaller radius of curvature in order to adjust the balancing skill level of the toy 2.

As will be apparent to those skilled in the art in the light of the foregoing disclosure, many alterations and modifications are possible in the practice of this invention without departing from the spirit or scope thereof. Accordingly, the scope of the invention is to be construed in accordance with the substance defined by the following claims.

Claims

1. A semi-stable balance board having a generally elongated upper surface overlaying a downward projection from the central area of the underside of the upper surface, the bottom end of said projection serving as a fulcrum, said projection comprising at the end removed from the standing surface a rounded rocking surface which confines motion of the platform about said projection to one vertical plane.
2. A balance board as claimed in claim 1 wherein the underside of the upper surface is planar at the ends thereof, the under surface smoothly and symmetrically blending inwardly from said opposed ends into a centrally aligned symmetrical downwardly protruding smoothly curved single rocking surface at the lower end of the projection, said rocking surface being generally the width of the upper standing surface and flat across said width.

3. A balance board as claimed in claim 2 wherein said smoothly and symmetrically blending rocking surface defines in section a generally inverted-bell shaped fulcrum having a laterally extending linear pivot surface, said pivot surface providing substantial lateral stability and semi-stable end-to-end stability.

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4. A balance board as claimed in claim 1 wherein said standing surface has thereon a non-slip matting.

5. A balance board as claimed in claim 3 wherein the radius of curvature of the lower end of the inverted bell-shaped fulcrum is varied to regulate the degree of skill required by the user to balance the board.

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6. A balance board as claimed in claim 5 wherein the fulcrum tip is detachable and can be replaced with a tip having a larger or smaller radius of curvature.

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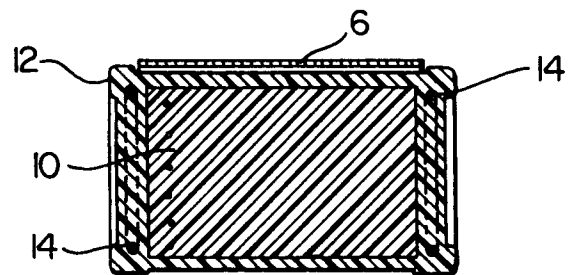
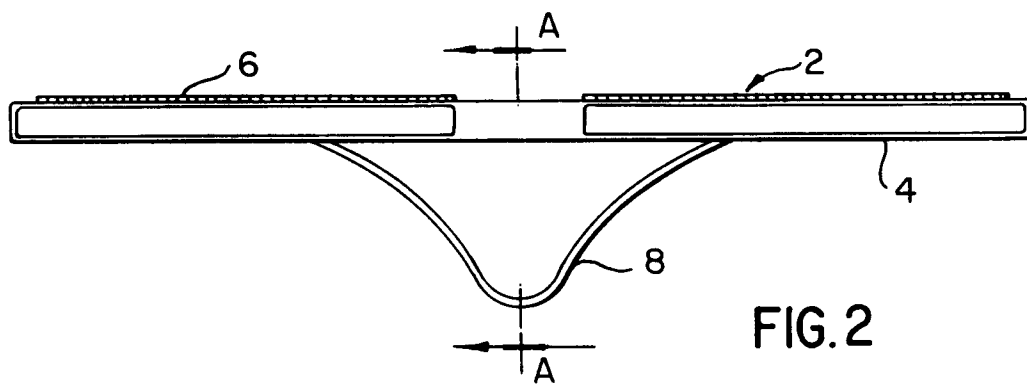
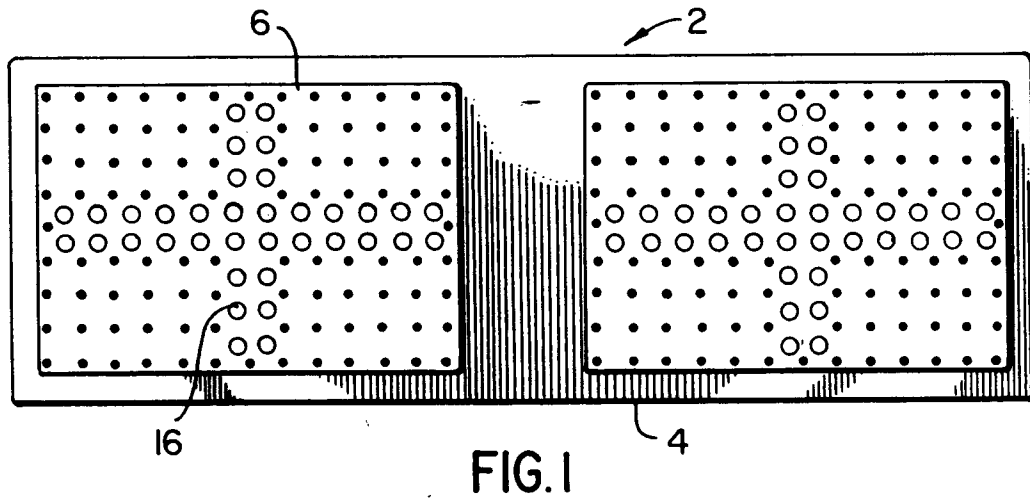
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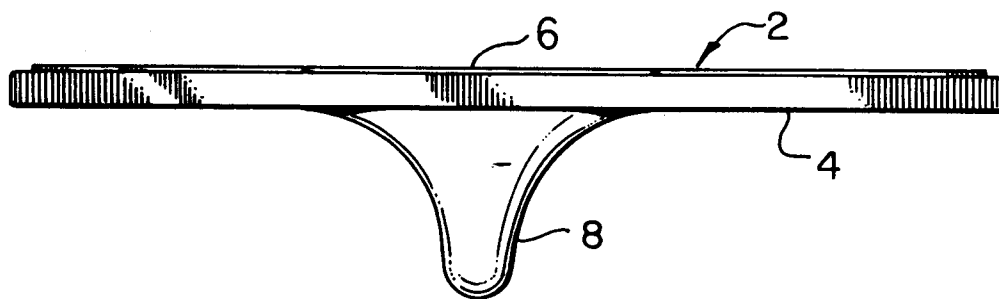


FIG. 4

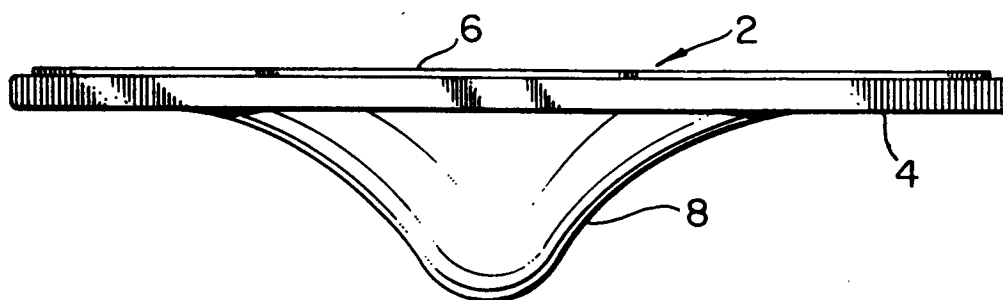


FIG. 5

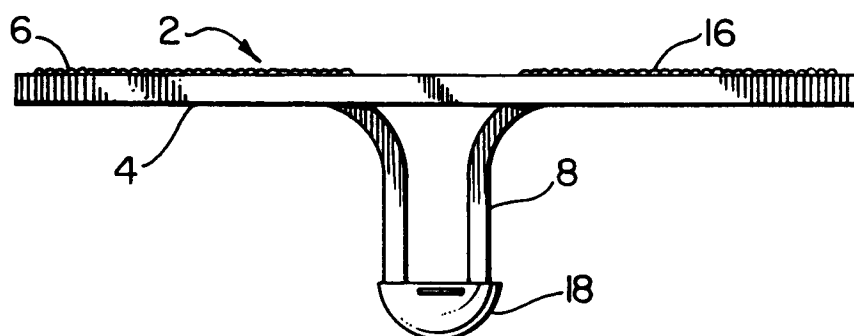


FIG. 6



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EUROPEAN SEARCH REPORT

Application Number

EP 90 30 7317

DOCUMENTS CONSIDERED TO BE RELEVANT

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
X	FR-A-2 173 180 (M. BRANDT) * Figures 1,2; page 2, line 23 - page 3, line 11 *	1,4	A 63 B 22/16
Y	— — —	5,6	
X	FR-A-2 177 449 (P. LANDRY) * Figures 1-4,6; page 2, lines 29-38; page 3, lines 20-32 *	1	
A	— — —	5,6	
X	FR-A-2 209 295 (M. COURCHAY) * Figure 1; page 2, lines 1-6 *	1,4	
X	DE-A-3 508 705 (W. GUGGENBERGER et al.) * Figures 1,3; page 7, lines 8-25; page 9, lines 16-26 *	1,4	
Y	FR-A-2 502 492 (B. MAINGUY) * Figures; page 2, line 34 - page 3, line 1; page 4, lines 9-18 *	5,6	
X	US-A-3 967 820 (J. HARPER) * Column 2, lines 46-65; figures *	1,2	
The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (Int. Cl.5)
Place of search			A 63 B
The Hague			
Date of completion of search			Examiner
22 February 91			
CATEGORY OF CITED DOCUMENTS			VEREECKE A.
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention			
			E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document