United States Patent

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[54] **ROCKABLE GYM SUPPORT SURFACE**

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[52] **U.S. Cl.**.....**272/56,** 272/56.5 R, 272/60, 272/DIG. 2, 248/377, 248/400, 297/247, 297/270

[51] **Int. Cl.** **A63g 13/00**

[58] **Field of Search**.....272/1 R, 1 B, 7, 33 A, 45, 272/46, 54, 56, 57 R, 57 A, 60, 70.3; 297/18, 264, 269, 270, 272, 216, 247; 248/376, 377, 373, 400, 401

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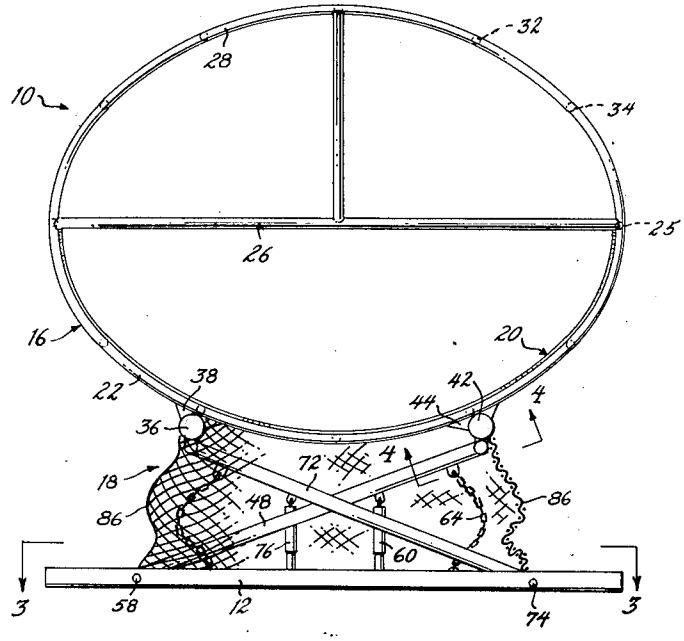
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[57] **ABSTRACT**

An amusement device is disclosed which is gravity biased by a suspension system to a center point and adapted to rock above and below the center point in a plane defined by side frames. The amusement device includes a semi-elliptical support surface on which children may stand, sit, slide or climb during the rocking movement. An adjustable dashpot may be used to slow the rate of rocking movement. To prevent injury to children, a mesh-type fence encloses the suspension system.

9 Claims, 5 Drawing Figures



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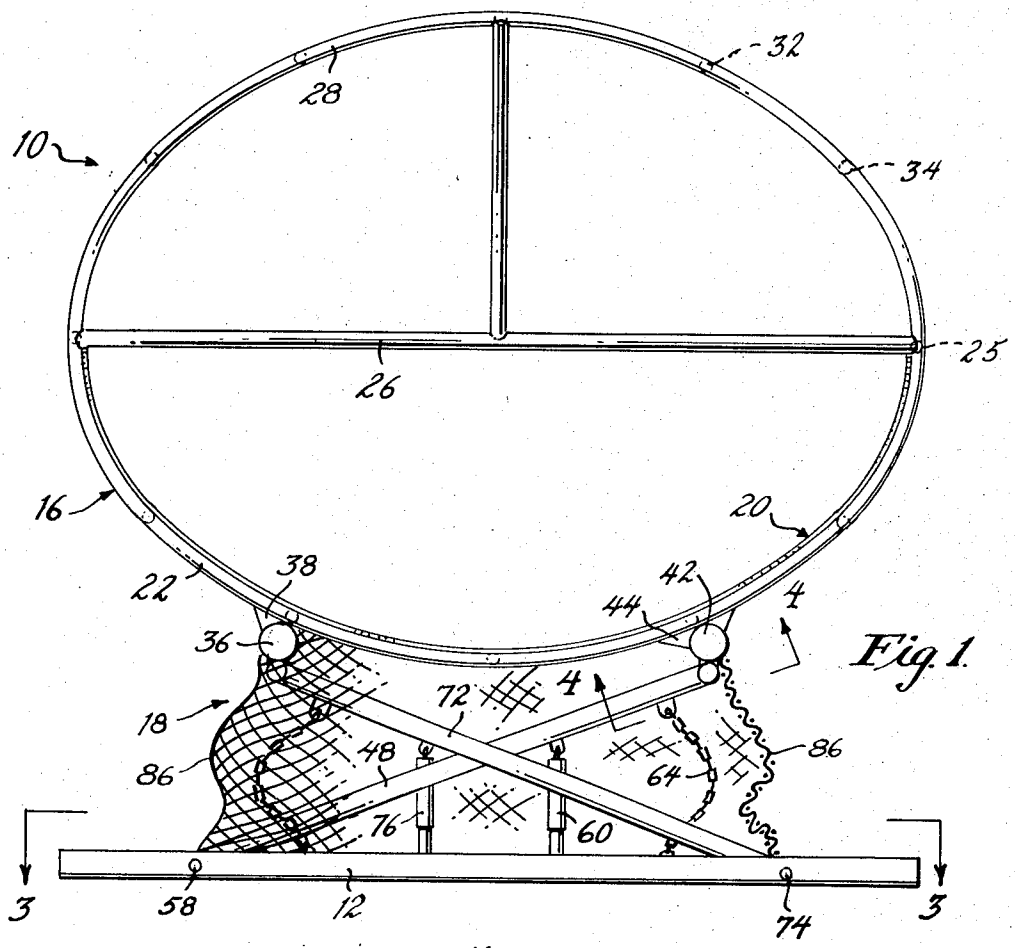


Fig. 1.

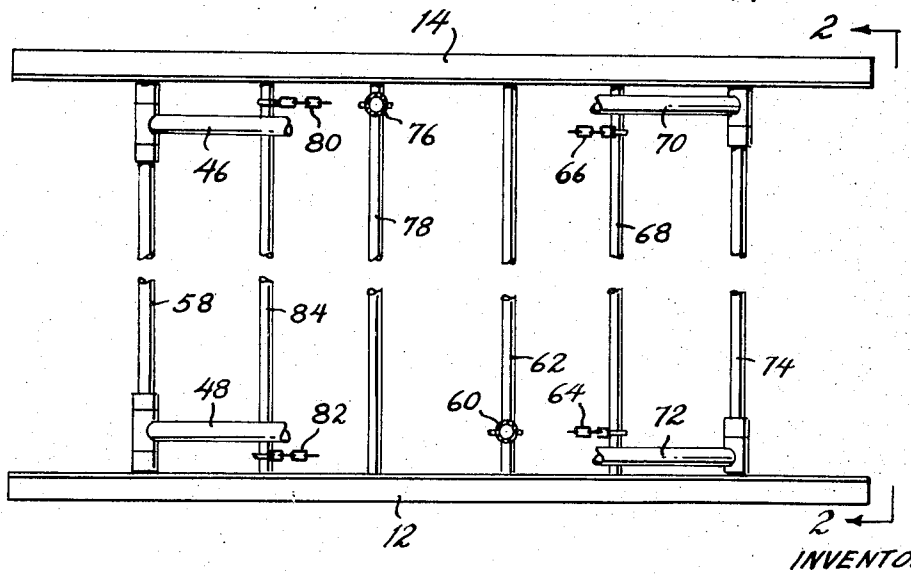


Fig. 3.

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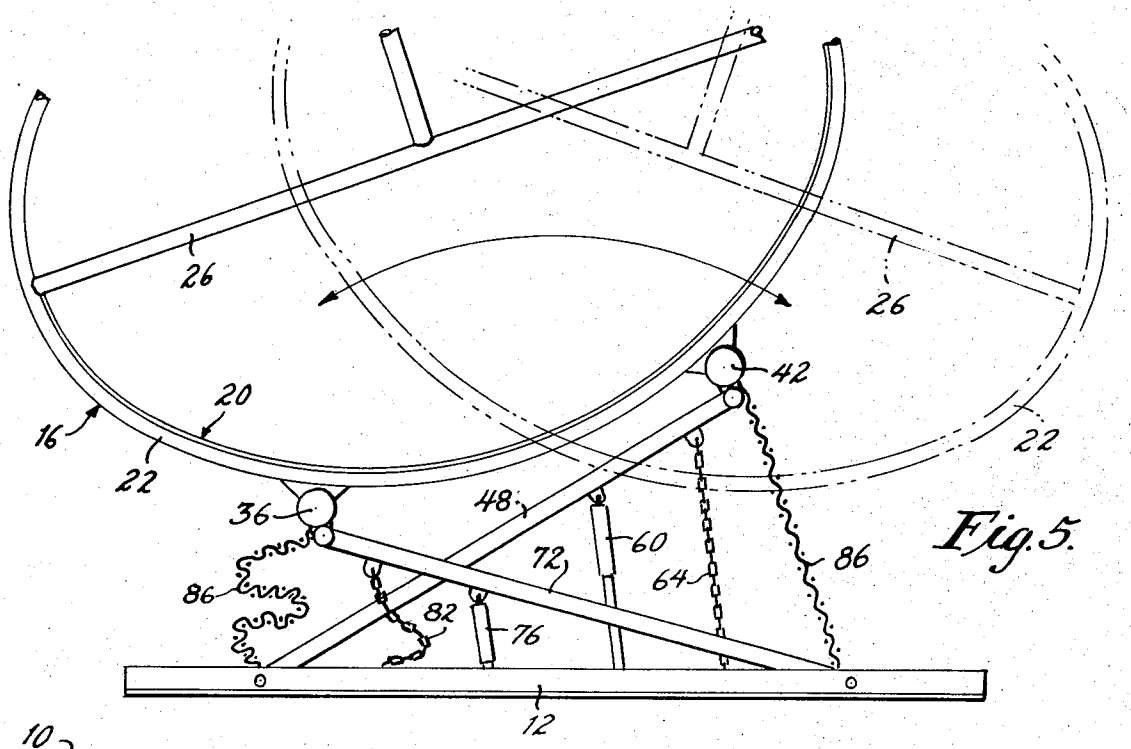


Fig. 5.

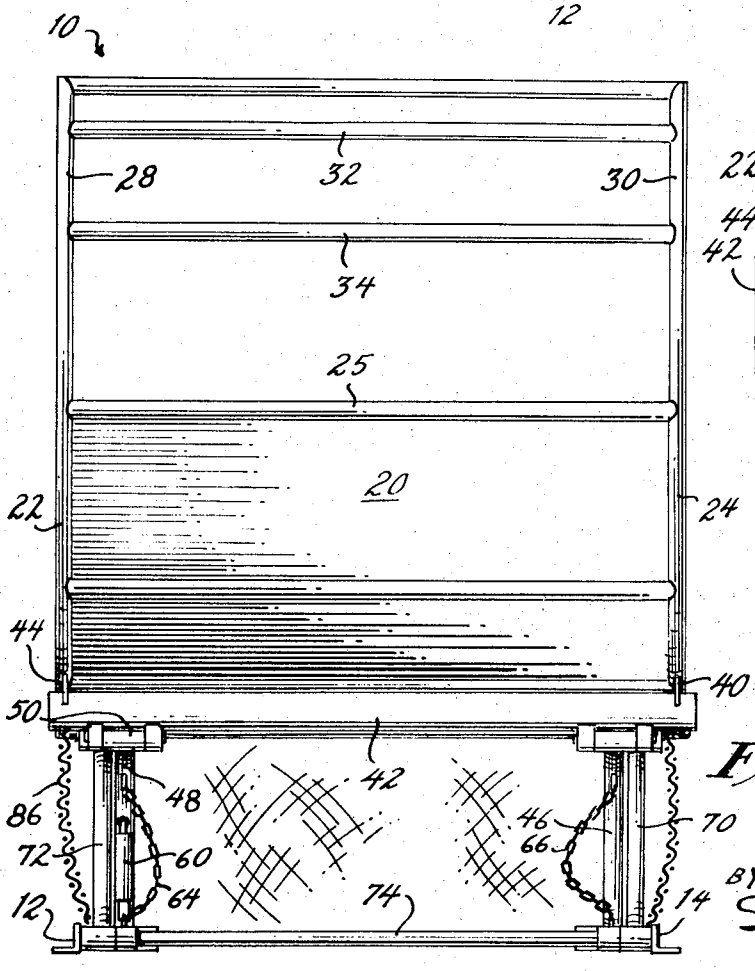


Fig. 2.

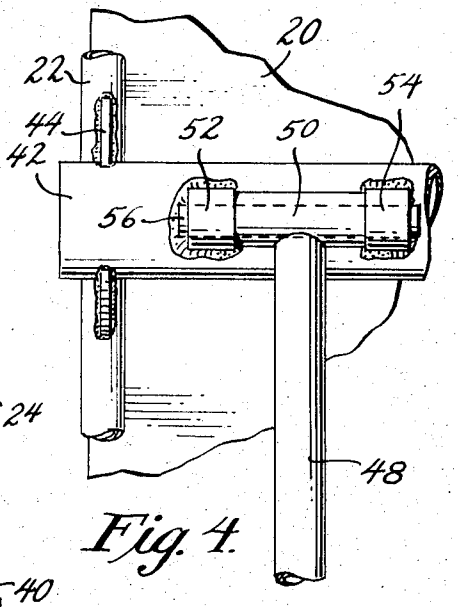


Fig. 4.

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ROCKABLE GYM SUPPORT SURFACE

This invention relates to an amusement device of the type found in playgrounds, although it may be made of a size whereby it may be utilized in the home. The amusement device of the present invention is preferably of sufficient size so that as many as 20–25 children may play on it at the same time; while it is to be understood that one child can also play on it by himself if so desired. The device includes a semi-elliptical support surface on which the children will sit or run, walk or slide, jump or stand while the device oscillates through a limited arc due to the influence of the weight and location of the children thereon.

The elliptical support surface of the present invention is provided with side frames and is coupled to a base support by a suspension system. The suspension system gravity biases the device to a position wherein the upper ends of the semi-elliptical support surface are in a substantially horizontal plane. The suspension system also suspends the side frame and semi-elliptical support while providing for limited rocking movement thereof in a vertical plane defined by the side frame members.

The amusement device of the present invention may be supported from a base support therebelow or a base support thereabove. The following description is directed to an amusement device which is supported from below. The suspension system is preferably disposed below and within the vertical plane defined by the side frame members. Further, the suspension system is preferably circumscribed by a fence or other means to protect the suspension system and prevent children from being inadvertently injured due to the oscillatory movement of the device of the present invention.

It is an object of the present invention to provide a novel oscillatory amusement device.

It is another object of the present invention to provide a playground amusement device which is capable of being manufactured from readily available components requiring a minimum of machining.

It is another object of the present invention to provide a novel playground type oscillatory amusement device adapted to receive more than two children while being structurally interrelated in a manner so as to minimize injury to the children.

Other objects will appear hereinafter.

For the purpose of illustrating the invention, there is shown in the drawings a form which is presently preferred, it being understood, however, that this invention is not limited to the precise arrangements and instrumentalities shown.

FIG. 1 is a side elevation view of the amusement device of the present invention.

FIG. 2 is an end elevation view of the device shown in FIG. 1.

FIG. 3 is a sectional view taken along the line 3—3 in FIG. 1.

FIG. 4 is a sectional view taken along the line 4—4 in FIG. 1.

FIG. 5 is a partial side elevation view of the device shown in FIG. 1 illustrating the extremes of oscillatory movement.

Referring to the drawing in detail, wherein like numerals indicate like elements, there is shown in FIG. 1

an amusement device in accordance with the present invention designated generally as **10**. The amusement device **10** is comprised of three major components, namely a support base, a suspension system, and a semi-elliptical or elliptical gym.

The base support is comprised of a pair of angle iron members **12** and **14** adapted to be ground supported. Members **12** and **14** may have other configurations such as tubular members. If desired, concrete reinforcement may be provided for the angle iron members **12** and **14**.

The components of the amusement device of the present invention are readily available components which require little or no machining. Thus, the base support is comprised of commercially available angle iron members. The remainder of the amusement device **10**, as will be made clear hereinafter, is comprised of commercially available pipes, rods, sheet metal, etc.

The gym or cab designated generally as **16** is comprised of a semi-elliptical support layer **20** made from sheet metal, wood, or sheet plastic. The side edge portions of the layer **20** are connected to and supported by side frame members **22** and **24**. In the inoperative position of the device **10**, the upper free ends of the layer **20** lie in a substantially horizontal plane interconnected by side rails **26** and with the side frame members **22** and **24** interconnected by braces **25**.

If desired, overhead frames **28** and **30** may be interconnected with the side frames **22** and **24** respectively. The overhead frames **28** and **30** are interconnected by horizontally disposed braces **32** and **34**. The braces **32** and **34** provide a means which may be grasped by the children to stabilize the children during the oscillatory movement of the device **10** as will be made clear hereinafter. Braces **32**, **34** facilitate climbing and swinging by the children while the device **10** is moving or stationary.

Elements **20–34** identified above are preferably made from commercially available pipe or rods. A horizontally disposed pipe **36** extends between the frame members **22** and **24** and is connected thereto by means of gusset plates **38**. A similar pipe **42** is connected to the frame members **22** and **24** by gusset plates **40** and **44**. The pipes **36** and **42** are on opposite sides of the center point and provide a means for pivotably connecting the frame members to the suspension system.

The suspension system interconnects the side frame members **22** and **24** with the base support in a manner which facilitates oscillation of the support layer **20** and side frame members about a center point within the vertical plane defined by the frame members **22** and **24**. As shown more clearly in FIG. **2**, the suspension system is disposed within said vertical plane so as to be beneath the support layer **20**.

The suspension system includes support members **46** and **48** which are disposed at an acute angle. The manner in which members **46** and **48** are pivotably interconnected with pipe **42** is identical. Hence, only the interconnection with member **48** will be described in detail.

Member **48** terminates at its upper end in a head **50**. Head **50** is a hollow sleeve which rotatably supports a pin **56**. The pin **56** extends beyond the ends of head **50** and is rotatably supported by sleeves **52** and **54**. Sleeves **52** and **54** are welded to the pipe **42**.

The lower end of the members 46 and 48 is likewise provided with a head rotatably supported by a 22 brace 58. Brace 58 is preferably a rod or tubing extending between the angle iron members 12 and 14. A dashpot 60 may be pivotably connected at its upper end to support member 48 intermediate its length. The lower end of dashpot 60 is pivotably connected to a brace 62 which extends between the angle iron members 12 and 14. The dashpot 60, which per se is conventional, is adjustable so that it may be utilized to slow down the rate of oscillatory movement of the members 46 and 48, which in turn will slow down the oscillatory movement of the gym 16.

Nylon tapes or chains 64 and 66 are utilized to limit the extent of oscillatory movement of the support members 46 and 48. One end of the chains is connected to the members 46 and 48 with their other ends being connected to a brace 68 extending between the angle iron members 12 and 14.

The distance between braces 58 and 74 as compared with the distance between the pipes 36 and 42 determines height, abruptness of oscillation, clearance distance between gym 16 and member 72, and the center of gravity. By choosing appropriate distances wherein the distance between pipes 36 and 42 is slightly smaller than the distance between 58 and 74 as illustrated in FIG. 1, the degree of oscillatory movement may be limited to approximately 35° to either side of the center point. This is accomplished with gym 16 in a position whereby its center of gravity is behind it. Hence, when released the gym 16 will return to its at rest position by itself. In addition, the stress on gym 16, the support members, nylon tapes, etc. is minimized since the stress is not progressive. If the stress were progressive the children would have to work too hard to move gym 16. Because of the non-progressive stress arrangement, there is provided a fluidity or ease of oscillation of the gym whereby the device 10 may be enjoyed by the children.

The suspension system includes support members 70 and 72 which are comparable to members 46 and 48. The upper ends of the members 70 and 72 are pivotably connected to the pipe 36 in the same manner as described above and illustrated in FIG. 4. It will be noted that the distance between members 70 and 72 is slightly greater than the distance between members 46 and 48 as shown more clearly in FIG. 3. The lower ends of the members 70 and 72 are pivotably coupled to a brace 74 extending between the angle iron members 12 and 14.

A dashpot 76 is pivotably connected at its upper end to an intermediate portion of support member 70. The lower end of the dashpot 76 is pivotably connected to a brace 78. Brace 78 extends between the angle iron members 12 and 14. The extent of movement of support member 70 may be controlled by a limit stop in the form of a nylon tape or chain 80. A similar tape or chain 82 may be provided for support member 72. The chains 80 and 82 are connected to a brace 84 which extends between the angle iron members 12 and 14.

In order to minimize any possibility of injury to the children and to prevent tampering with the suspension system, there is preferably provided a fence 86 around the suspension system. The upper end of the fence 86 is connected to the pipes 36 and 42 and to the sections of members 22, 24 that are in-between pipes 36, 42. The lower end of the fence is connected to the angle iron members 12 and 14 and to braces 58, 74. The fence 86 is preferably a mesh-type metallic fence positioned so as to have a collapsed state when the amusement device 10 is inoperative while having an extended position as shown in FIG. 1 which does not fully tension the fence at the point where the gym 16 has reached the limit of its oscillatory movement.

The amusement device 10 is utilized as follows.

In an inoperative disposition, as shown in FIG. 1, the upper ends of the semi-elliptical support layer 20 lie in a substantially horizontal plane. The device 10 is gravity biased to this position by the suspension system. Children may stand, or kneel, lie, or sit on the support layer 20. The side rails 26, braces 32 and 34, and the overhead frames 28 and 30 provide for climbing and swinging and support, which may be held by or hold the children as they make gym 16 oscillate.

The gym 16 may be caused to oscillate between the extremes as shown in solid and phantom lines in FIG. 5 by the walking, running, swinging, climbing, rolling movements of the children. The rate at which the gym 16 will oscillate is dependent upon the speed that the children are able to shift their aggregate weight from one side to the other. The rate of oscillation is held to an upper limit, however, by the employment of from one to four dashpots shown here as 60 and 76. If desired, though, the gym 16 may be used without any dashpots. Depending on where and how fast the children are able to redistribute their weight, the gym 16 and the children can oscillate either in a steady continuous manner or in random patterns. As the gym 16 oscillates, from the position shown in FIG. 1 to the solid line position shown in FIG. 5, support members 46 and 48 will pivot upwardly with respect to brace 58 while members 70 and 72 pivot downwardly with respect to brace 74.

By comparing the position of the support layer 20 in FIGS. 1 and 5, it will be seen that children sitting on the layer 20 will be caused to slide along the support layer 20 during the oscillatory movement of the gym 16. It is to be noted that a faster and longer sliding motion can be appreciated by the children the farther left of pipe 36 or right of pipe 42 they are, on support layer 20, when they cause it to oscillate. Layer 20 is preferably made from a lightweight non-corrosive material such as aluminum, stainless steel, wood, or plastic. If desired, small holes may be provided in layer 20 adjacent the right portion thereof to facilitate the drainage of any rain water or snow which may collect thereon due to the environmental conditions in which the device 10 is located.

As long as the weight is to one side of the center point, the device 10 will remain in the solid line position shown in FIG. 5. As soon as the children redistribute their weight, the device 10 will oscillate to the center point position shown in FIG. 1 or continue on towards the phantom position shown in FIG. 5, depending on the weight distribution.

The present invention may be embodied in other specific forms without departing from the spirit or essential attributes thereof and, accordingly, reference should be made to the appended claims, rather than to the foregoing specification as indicating the scope of the invention.

I claim:

1. An amusement device comprising a stationary support, a gym support surface on which children may slide during oscillation thereof, substantially parallel side frame members connected to said support surface, side rails interconnecting said side frame members adjacent the upper free ends of said support surface, a suspension means for suspending said side frame members and said support surface and providing for limited rocking movement of the frame members and support surface in a plane defined by the side frame members, said suspension means being gravity biased to position said upper ends of said support surface in a substantially horizontal plane above said stationary support, said suspension means including first and second pipe-like members connected to said side frame members and extending between said frame members in a horizontal disposition on opposite sides of a center point on and below said support surface, first and second pairs of mating support members, each support member of said first pair having its upper end pivotably connected to said first pipe-like member, each support member of said second pair having its upper end pivotably connected to said second pipe-like member, the lower ends of said support members of said first and second pairs being pivotably connected to said stationary support, the distance between said pipe-like members being less than the distance between the pivot points on said stationary support, each member of said first and second pairs of mating support members being generally parallel to said side frame members, said first and second pairs of mating members being below said support surface and spaced inwardly of the side edges of said support surface.

2. A device in accordance with claim 1 wherein at least one member of said first and second pairs of members is pivotably connected to a dashpot, and a fence around said suspension system.

3. A device in accordance with claim 1 wherein said support surface is open at its sides below said side rails, and overhead frames connected to said side frames, with parallel braces extending between said overhead frames, said overhead frames and said side frame members cooperating to define an ellipse whose major axis is horizontally disposed.

4. An amusement device comprising a base support, a semi-elliptical gym support surface on which children may be supported, said surface being uninterrupted so that children may slide on said surface during oscillation thereof, substantially parallel side frame members connected to said support surface, side rails interconnecting said side frame members adjacent upper free ends of said support surface, a suspension means for suspending said side frame members from said base support while providing for limited rocking movement of the frame members and support surface in a plane defined by the side and frame members, said suspension means being gravity biased to position the upper ends of said support surface in a substantially horizontal plane above the plane of the center portion thereof, said suspension system including first and second pairs of mating members of equal length, each member of said first pair having one end pivotably connected to the side frame members at a first location and another end pivotably connected to the base support, each member of said second pair having one end pivotably connected to the side frame members at a second location and at other ends pivotably connected to the base support, said first and second locations being on opposite sides of the center point on the support surface, and the distance between said first and second locations being shorter than the length of said mating members of said first and second pairs.

5. A device in accordance with claim 4 including an expansible fence connected to the base support around said first and second pairs of mating members and below said support surface to minimize injury to children and prevent inadvertent blocking of oscillatory movement of said pairs of mating members.

6. A device in accordance with claim 4 including a semi-elliptical overhead frame connected to said side frame members, said overhead frame including horizontal braces to enable children to climb thereon and be supported therefrom above said support surface without touching said support surface.

7. A device in accordance with claim 4 wherein said first and second pairs of mating members are generally parallel to said side frame members and within a vertical plane defined by said side frame members, and said first pair of mating members defining an angularly disposed plane which is intersected by an angularly disposed plane defined by the mating members of the second pair, said angularly disposed planes intersecting between said base support and said support surface.

8. A device in accordance with claim 4 including a dashpot connected to at least one of the mating members of each of said first and second pairs of mating members.

9. A device in accordance with claim 4 including horizontally disposed pipes on opposite sides of a center point on said side frame members, each pipe being fixedly connected to said side frame members, and said suspension system being pivotably connected to said pipes.

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