An infant soothing device includes a base, a rocking platform pivotally mounted to the base, a drive mechanism for reciprocating the rocking platform up and down relative to the base and a carriage having an infant restraining device positioned thereon, the carriage shaped to reciprocably move back and forth within the rocking platform.
INFANT SOOTHING DEVICE

BACKGROUND OF THE INVENTION

[0001] The present invention is a soothing device for infants, and more particularly a rocking-type infant soothing device.

[0002] In the past there have been many different types of infant soothing devices. Of particular popularity have been standard infant swings having an “A” frame configuration. In a typical swing configuration of this type, the swing structure generally consisted of two A-shaped legs that were attached by a lateral crossbar or axle at the top vertices of the A’s. Typically, the swing itself was hung from the crossbar and a motor, usually either spring or electric, provided the motive force for moving the swing. In these prior configurations, the motor was usually located somewhere on one of the two leg structures, fairly close to the rotational axis of the axle and was directly connected to the swing seat. Examples of these types of prior art swings are shown in U.S. Pat. Nos. 4,452,446 and 5,378,196.

[0003] Recently, improved “open top” versions of these basic “A” frame type infant swings have gained popularity because there is no crossbar or axle which runs directly across the top of the support structure over the top of the seat. These newer style “open top” swings allow much easier access to the child occupant than the prior art swings discussed above. Examples of typical “open top” swings include U.S. Pat. No. 5,525,113 owned by Grace Children’s Products, Inc., U.S. Pat. No. 5,769,727 owned by Evenflo Company Inc. and U.S. Pat. No. 5,791,999 owned by Kolcraft Enterprises, Inc. As can be seen in all of these patents, there is no axle or crossbar that extends directly over the top of the swing and stability is provided by attaching the bases of the A-shaped legs, rather than the vertices of the A’s as in prior art swings.

[0004] Other types of infant soothing devices, including rockers, rocking cribs, etc. have also been disclosed in the prior art. Representative examples of these types of infant soothing devices are disclosed in U.S. Pat. No. 5,711,045 assigned to Andrew Caster, U.S. Pat. No. 5,464,381 to Christi L. Wilson, U.S. Pat. No. 4,752,980 assigned to D&M Rocker, and U.S. Pat. No. 4,620,334 to Alec Robinson, among many others.

SUMMARY OF THE INVENTION

[0005] The present invention provides an improved infant soothing device. More specifically, the present invention provides a rocking-type infant soothing device having a drive mechanism wherein there is no direct linkage between the infant retention structure and the motive force for moving and/or rocking the infant retention structure. In one embodiment, the invention comprises an infant retention structure that is coupled to a carriage wherein the carriage moves in a reciprocating motion in response to the up and down movement of a platform that is pivotally supported by a base. In other embodiments, the infant retention structure may be a seat mounted so that may be reclined without significantly changing the center of gravity of the seat with respect to the carriage; the carriage may ride on wheels within a track in the platform; a damper device, such as a piston, may be provided to facilitate the delivery of a smooth rocking motion to the rocking platform and thus the infant retention structure; legs may be provided in the base of the infant soothing device and the legs may be movable between retracted and extended positions; the infant soothing device may be driven by an electric motor; and the electric motor may be battery operated. Upon review of the disclosure presented herein, one of ordinary skill in the art will realize that many of the embodiments disclosed may be combined and varied without departing from the scope of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

[0006] FIG. 1 is a rear perspective view of an infant soothing device in accordance with the present invention;

[0007] FIG. 2 is a front perspective view of the infant soothing device of FIG. 1;

[0008] FIG. 3 is a bottom perspective view of the infant soothing device of FIG. 1;

[0009] FIG. 4 is an exploded, front perspective view of a base for use in connection with the infant soothing device of FIG. 1;

[0010] FIG. 5 is a partially-explored, front perspective view of a rocking platform and infant seat/carriage combination for use in connection with the infant soothing device of FIG. 1;

[0011] FIG. 6 is an exploded, rear perspective view of the infant carriage/seat combination shown in FIG. 5;

[0012] FIG. 7 is a cutaway, top perspective view detail of the motor assembly/drive mechanism shown in the base of FIG. 4; and

[0013] FIG. 8 is a detail showing a bottom perspective view of the motor assembly/drive mechanism shown in the rocking platform of FIG. 5.

DETAILED DESCRIPTION

[0014] As best shown in FIGS. 1, 2 and 3, one embodiment of the present invention is an infant soothing device comprising a base 22, a rocking platform 24 and an infant retention structure such as a carriage/seat combination 26. The base 22 may optionally include legs 28 that may be extendable and retractable with respect to the base 22. The legs 28 may be attached to the base 22 as is generally known in the art to raise and lower the base 22 thereby adjusting the height of the base 22 as may be desired. The legs 28 may be of a generally tubular construction and may include L-shaped feet 30 including bumpers 32 positioned on the vertices of the feet 30 to provide desired stability. The rocking platform 24 may be pivotally mounted with respect to the base 22 at a central pivot point 34. The rocking platform 24 may include a track 40 that may be upwardly curved in shape. The track 40 may be made of any suitable construction and may be comprised of separate pieces including rail wells 42 that receive and support the wheels 36 of the carriage 38 and cover pieces 44 that are positioned over the rail wells 42 to capture the wheels 36 of the carriage 38 and prevent the carriage from becoming disengaged from the track 40. The rail wells 42 may include a rail (not shown) upon which the wheels 36 of the carriage 38 are supported and may glide upon. Of course it is to be understood that other types of configurations for movement of the carriage/seat combination on the rocking platform are possible and...
would be within the scope of the invention. For example, the carriage could roll on the surface of the rocking platform itself, rather than in a track on the platform, or the movement of the carriage could be restricted by a slider/rail combination. Additionally, the wheels of the carriage could be replaced with bearings or sliding mechanisms as is known in the art.

[0015] Base

[0016] As best shown in FIG. 4, and as described generally above, an embodiment of the infant soothing device of the present invention may include a base 22 optionally including legs 28 that may be extendable and retractable with respect to the base 22. The base 22 may be shaped so that the base 22 can sit securely on a flat surface whether or not the legs 28 are extended or retracted. The legs 22 may be made of any suitable construction and any suitable material. For example, the legs 28 may be tubular steel and may be pivotally attached to the base 22 in any traditional manner known in the art so that they may be extended and retracted as desired. In one embodiment of the invention the legs 28 may be included in a leg assembly 46 including leg brackets 48, over buttons 50, resiliently biased stop buttons 52, and pivot axles (not shown). The legs 28, leg brackets 48 and over buttons 50 may include pivot holes 54 formed therethrough to receive the pivot axles for relative pivotal movement. The legs 28 and leg brackets 48 may also include detent holes 56 for receiving nubs 58 on the resiliently biased stop buttons 52 to prevent undesired retraction of the legs 28 when the legs 28 are in the extended position. Accordingly, when the legs 28 are in the extended position, the nubs 58 on the resiliently biased stop buttons 52 engage the detent holes 56 in the legs 28 and leg brackets 48, thereby preventing retraction of the legs 28. When retraction of the legs 28 is desired, the over buttons 50 may be pressed inwardly, thereby disengaging the nubs 58 from the detent holes 56 and allowing retraction of the legs 28. As best shown in FIG. 3, recesses 60 may be provided on the underside of the base 22 to receive the legs 28 when the legs are in a retracted position.

[0017] The base 22 may include a motor assembly/drive mechanism, generally designated 62, as will be discussed in detail below. The base 22 may include a motor control unit 64, including a power switch 66 and a speed control 68. The motor control unit 64 may be electrically connected to batteries 70 to control the current from the batteries 70 to the motor assembly/drive mechanism 62 as is known in the art. The batteries 70 may be held into the base 22 by a removable battery cover 72 as is known in the art. The power switch 66 may be any suitable switch, such as a standard single-pole, double-throw switch and the speed control can be any suitable control circuit capable of varying the current to the motor assembly/drive mechanism 62, such as a pulse width modulation control or a rheostat control, among others.

[0018] The base 22 may include a pivot mechanism for supporting the rocking platform 24. The pivot mechanism may be any suitable mechanism for attaching the rocking platform 24 to the base 22 in a pivoting fashion. The pivot mechanism may include pivot supports 74 for supporting a pivot axle (not shown) that extends along line A-A (see FIG. 5). The pivot supports 74 may be integrally formed in the base 22 or may be held in place by screws, rivets, etc. The rocking platform 24 may have pivot holes or slots (not shown) formed therein for receiving the pivot axle (not shown) so that the rocking platform 24 may pivot about the pivot axle.

[0019] As best seen in FIG. 7, the base 22 may include protruding fms 76 for receiving one end of table springs 78. As best seen in FIG. 8, the underside of the rocking platform 24 may include a well 79 for receiving the other end of table springs 78. The table springs 78, base 22, rocking platform 24, and carriage 38 all may cooperate to form a mechanism having rocking and rolling motion. The rocking and rolling motion of the mechanism generally operates at a natural periodic frequency that is determined by the selection and construction of those components. It is to be understood that the selection and construction of those components may be manipulated by one of ordinary skill in the art to achieve a natural periodic frequency as may be desired to attain the desired rocking motion. In this regard, one of ordinary skill in the art will understand that the selection and positioning of the table springs 78 may be varied greatly from the embodiment disclosed herein and the invention is not intended to be limited to that embodiment. For example, any number of table springs, including as few as one or as many as desired, may be utilized and operably connected between the rocking platform and the base to achieve the desired motion. Furthermore, the table springs may be the compression springs shown herein, or may be chosen from other springs including leaf springs, torsion springs, extension springs, elastomeric springs, etc. as is known in the art.

[0020] In an embodiment of the invention the base 22 (in combination with the rocking platform 24) may include a damper mechanism. The damper mechanism may be used to prevent undesired rocking and vibration in the rocking platform 24. The damper mechanism may be any damper mechanism as is known in the art and may be an air piston 80. As best shown in FIG. 4, the air piston 80 may include a damper cup 82 positioned in the base 22 and a piston 84 attached to the underside of the rocking platform 24 as best seen in FIGS. 7 and 8. The piston 84 may be attached to the rocking platform 24 in any suitable manner and may be hung from the bottom of the rocking platform 24 using a hanger 86/axle 88 combination. As shown best in FIG. 7, the hanger 86 may be offset from the center of the piston 84 to prevent undesired rattling noises. The hanger 86 may have a slot 90 therein to receive the axle 88 to allow the piston 84 to move somewhat with respect to the rocking platform 24 as the rocking platform 24 pivots up and down on the base 22. The axle 88 may be anchored in the underside of the rocking platform 24 as desired.

[0021] The piston 84 may be sized to fit suitably within the damper cup 82 whereby the air displaced by the piston 84 as the rocking platform 24 moves up and down with respect to the base 22 escapes out of the damper cup 82 along the sides of the piston 84. Of course an air valve could also be used to control the flow of air in and out of the damper cup 82 as is known in the art to provide the desired dampening effect. The damper cup 82 may include an attached flange 92 to allow the damper cup 82 to be fastened into a collar 94 included in the base 22 or may be molded directly into the base 22. Of course, it is to be understood that the attachment of the damper cup 82 and piston 84 with respect to the base 22 and rocking platform 24, respectively, could be reversed without departing from the scope of an embodiment of the invention.
[0022] Rocking Platform

[0023] As best shown in FIG. 5, an upper portion, or topside, of a rocking platform 24 in accordance with an embodiment of the invention may include a central pivot point 34 and a tray 96 including a track 40. As discussed previously, the track 40 may include rail wells 42 for providing a clearance area for wheels 36 attached to a carriage 38 and cover pieces 44 for retaining the wheels 36 in the rail wells 42. The rail wells 42 may additionally include rails (not shown) to provide a riding surface for the wheels 36. The track 40 may be curved to provide a smooth ride for the carriage 36 and thus provide a soothing motion to the infant utilizing the soothing device 20. The curvature of the track 40 may be generally curved, arcuate, parabolic or compound. The rocking platform 24 may include a central pivot point 34 that is adapted to receive a pivot axle (not shown) along axis A-A such that the rocking platform 24 is pivotally mounted with respect to the base 22. As best shown in FIG. 8, and as will be discussed in detail below, in accordance with an embodiment of the present invention, the underside of the rocking platform 24 may be adapted to pivotally mount the rocking platform 24 with respect to the base 22 in an operative connection with a motor assembly/drive mechanism 62. For this purpose, a mounting block 96 and a mounting post 98 may be attached to the underside of the rocking platform 24.

[0024] Motor Assembly/Drive Mechanism

[0025] As best shown in FIGS. 7 and 8, a motor assembly/drive mechanism 62 may be provided in accordance with an embodiment of the invention. In an embodiment of the invention, the motor assembly/drive mechanism 62 may include a motor reduction assembly 100 as is known in the art, an eccentric crank 102, a sliding couple 104, a mounting bracket 106, and a torsion drive spring 108. The motor reduction assembly 100 may be electrically connected to the motor control unit 64, and more specifically, the speed control 68. The motor reduction assembly 100 may be secured to the base 22. The eccentric crank 102 may rotate about pivot B-B of the motor reduction assembly 100. The sliding couple 104 includes a drive bore 110 that is parallel to the eccentric crank 102 and shaped to rotatably receive the eccentric crank 102. The sliding couple 104 also includes a transverse bore 112 that is shaped to slidably receive a drive end 114 of the torsion drive spring 108. The mounting bracket 106 is fixedly attached to the mounting block 96 and includes a bore 116 therein to rotatably receive a middle section 118 of the torsion drive spring 108. The mounting post 98 includes a bore 120 shaped to receive a screw (not shown) to freely attach a torsion end 122 of the torsion drive spring 108 to the underside of the rocking platform 24.

[0026] Accordingly, when current is supplied to the motor reduction assembly 100 from the batteries 70 thereby causing the eccentric crank 102 to turn, the up and down movement of the crank 102 is translated through the sliding couple 104 to the torsion drive spring 108. The torsion end 122 of the torsion drive spring 108 is then driven up and down with respect to the base 22, while the sliding couple 104 slides back and forth on the drive end 114 of the torsion drive spring 108, thereby providing smooth rocking motion to the rocking platform 24 attached thereto. The air piston 80 help to dampen and smooth the up and down movement of the rocking platform 24 as well.

[0027] While the motor assembly/drive mechanism described herein is considered to be operable in connection with the present invention, it is to be understood that there may be many motor assembly/drive mechanisms that would be operable in connection with the infant soothing device of the present invention, all of which would be considered within the scope of the present invention. In particular, one of ordinary skill in the art would understand that many motor assemblies/drive mechanisms known in the prior art having rotating or reciprocating outputs could be operatively coupled between the base and rocking platform of the present invention using a compliant linkage to induce the desired rocking motion to the rocking platform. With respect to compliant linkages, several embodiments are known in the art which would be operable and are considered within the scope of the present invention including leaf springs, extension springs, spirally wound torsion springs, etc. As such, the motor assembly/drive mechanism 62 and torsion spring 108 specifically described herein are simply one operative embodiment for use in connection with the present invention.

[0028] Carriage/Seat Combination

[0029] As best shown in FIG. 6, an embodiment of the invention may include a carriage/seat combination 26 wherein an infant using the infant soothing device 20 of the present invention is held in a seat 124 that is attached to the carriage 38. It is to be understood that other infant retention structures not specifically described herein, including harness devices, pivoting reclining seats, and/or platforms would be operable in embodiments of the invention and are considered within the scope of the invention.

[0030] The carriage/seat combination 26 may include a seat 124, a seat platform 126, a carriage 38, and wheels 36. The seat platform 126 may be integral with the seat 124 or the seat 124 may be removable from the seat platform 126. If the seat 124 is removable from the seat platform 126, the seat back 128 may include retention blocks 130 thereon shaped to be received in a slot 132 in the seat platform 126. The mounting blocks 130 may include resiliently biased fingers 134 formed therein including nubs 135 thereon shaped to be received by retention holes 136 in the seat platform 126. Slot 132. Accordingly, if it is desired to remove the seat 124 from the seat platform 126, the nubs 135 on the resiliently biased fingers 134 may be pushed inwardly, disengaging the nubs 135 from the retention holes 136 thereby allowing the seat 124 to be disengaged from the seat platform 126. Additional mechanisms may be used to additionally secure the seat 124 to the seat platform 126 including having a slide 138 mounted on the seat back 128 to engage a corresponding fin 140 mounted on the seat platform 126. Additionally, notches 142 on the seat platform 126 may be shaped to engage protrusions 144 (best seen in FIG. 5) on the base 146 of the seat 124 further securing the seat 124 to the seat platform 126.

[0031] The seat platform 126, and seat 124 attached thereto, may be fixedly attached with respect to the carriage 38, or may be movable in any desired manner including pivotally or slidably. If the seat platform 126 is slidably attached to the carriage 38, the carriage 38 may include a curved track 148 formed in upper part 150 thereof to slidably receive lower 152 and upper 154 sliding blocks positioned on the seat platform 126. The track 148 may be formed with
a curvature such that the sliding of the seat platform 126, and thus the seat 124 (and any infant seated in the seat), does not appreciably change the center of gravity of the infant with respect to the carriage 38. In this manner, the movement of the carriage/seat combination 26 in the track 40 is not appreciably changed by the movement of the seat platform 126 within the carriage 38. 

[0032] In one embodiment of the invention, the seat platform 126 may be made essentially infinitely adjustable with respect to the carriage 38 by positioning a gear tooth track on the bottom of the seat platform 126 and including a resiliently biased detent mechanism to engage the track as is known in the art. Alternately, the bottom 156 of the seat platform 126 may include a detent block 158 positioned thereon that is shaped to interfere with a protrusion 160 positioned on an engagement portion 162 of a resiliently biased pivot release button 164. The pivot release button 164 may be pivotally journaled into the carriage 38 by a pivot hub 166 and may include a spring 168 positioned under the operation surface 170 of the pivot release button 164. Accordingly, when the operation surface 170 is depressed, the protrusion 160 may be moved out of interference with the detent block 158 and the seat platform 126 may be slid between a rearward, upright position and a forward, reclined position. Then, when the operation surface 170 is released, the detent block 158 may be resiliently biased into interference with the protrusion 160 by the spring 168. Thus, given the positioning of the lower 152 and upper 154 sliding blocks in the track 148, forward and rearward movement of the seat platform 126 with respect to the carriage 38 is prevented.

[0033] The carriage 38 may be constructed to move smoothly back and forth in the rocking platform 24. In order to facilitate the smooth movement of the carriage 38, the carriage 38 may include wheels 36 positioned thereon as is known in the art. While the wheels 36 may be of any conventional construction, the wheels 36 may be independently rotatable and mounted on axles 172 that are mounted in a lower portion 174 of the carriage 38. The wheels 36 may be provided with bearings 176 to reduce the friction between the axles 172 and the wheels 36. Additionally, the wheels 36 may include flanges 178 and collars 180 to facilitate the engagement of the wheels 36 with the rails (not shown) in the rail wells 42. Of course, it is to be understood that the rails could include flanges and the wheels could be of standard cylindrical construction. Additionally, as would be clear to one of ordinary skill in the art, the wheels, and the gliding surface therefor, could be manufactured in various geometries (including V-shaped or cupped) in order to provide the centering function to the wheels that is performed by the collar/flange construction on the wheels disclosed herein. Furthermore, the wheels could be completely removed and replaced with sliders, bearings, etc., to provide the desired reciprocal action for the carriage.

[0034] Construction

[0035] The various components of the infant soothing device 20 of the present invention may be constructed of any suitable materials as known in the art. Examples of operable materials for the base, rocking platform and carriage seat combination include all kinds of plastics including polypropylene and polyethylene. The components may be fabricated in any suitable manner as known in the art including injection molding, extrusion, blow molding, casting, etc.

[0036] Having described the invention in detail, it will be apparent that modifications and variations are possible without departing from the scope of the invention defined in the appended claims.

What is claimed is:

1. An infant soothing device comprising:
   a base;
   a rocking platform pivotally mounted to said base;
   a drive mechanism for reciprocating said rocking platform up and down relative to said base; and
   a carriage having an infant restraining device positioned thereon, said carriage constructed to reciprocably move back and forth on said rocking platform.

2. The infant soothing device of claim 1 wherein said rocking platform includes an upwardly curved track and said carriage is constructed to reciprocably move on said track.

3. The infant soothing device of claim 1 wherein said carriage includes wheels mounted on a lower portion thereof to allow said carriage to roll on said rocking platform.

4. The infant soothing device of claim 1 wherein said infant restraining device is pivotable with respect to said carriage.

5. The infant soothing device of claim 1 wherein said base includes at least one spring mechanism mounted between said base and said rocking platform.

6. The infant soothing device of claim 1 wherein said base includes a dampening mechanism.

7. The infant soothing device of claim 6 wherein said dampening device is an air piston assembly mounted between said rocking platform and said base.

8. The infant soothing device of claim 1 wherein said drive mechanism includes a compliant linkage coupled between said base and said rocking platform for reciprocating said rocking platform up and down relative to said base.

9. The infant soothing device of claim 8 wherein said compliant linkage is a torsion drive spring and said torsion drive spring is coupled between said drive assembly and an underside of said rocking platform.

10. The infant soothing device of claim 1 wherein said infant restraining device is an infant seat adjustable attached to said carriage.

11. An infant soothing device comprising:
   a base;
   a rocking platform pivotally mounted to said base;
   at least one spring mechanism mounted between said rocking platform and said base;
   a drive mechanism for reciprocating said rocking platform up and down relative to said base; and
   a carriage having an infant restraining device positioned thereon, said carriage constructed to reciprocably move back and forth on said rocking platform.

12. The infant soothing device of claim 11 wherein said rocking platform includes an upwardly curved track and said carriage is constructed to reciprocably move on said track.

13. The infant soothing device of claim 11 wherein said carriage includes wheels mounted on a lower portion thereof to allow said carriage to roll on said rocking platform.
14. The infant soothing device of claim 11 wherein said infant restraining device is pivotable with respect to said carriage.

15. The infant soothing device of claim 11 wherein said spring mechanism is at least one compression spring.

16. The infant soothing device of claim 11 wherein said base includes a dampening mechanism.

17. The infant soothing device of claim 16 wherein said dampening device is an air piston assembly mounted between said rocking platform and said base.

18. The infant soothing device of claim 11 wherein said drive mechanism includes a compliant linkage coupled between said base and said rocking platform for reciprocating said rocking platform up and down relative to said base.

19. The infant soothing device of claim 18 wherein said compliant linkage is a torsion drive spring and said torsion drive spring is coupled between said drive assembly and an underside of said rocking platform.

20. The infant soothing device of claim 11 wherein said infant restraining device is an infant seat adjustably attached to said carriage.

21. An infant soothing device comprising:
   a base;
   a rocking platform pivotally mounted to said base;
   a drive mechanism including a compliant linkage coupled between said base and said rocking platform for reciprocating said rocking platform up and down relative to said base; and
   a carriage having an infant restraining device positioned thereon, said carriage constructed to reciprocably move back and forth on said rocking platform.

22. The infant soothing device of claim 21 wherein said rocking platform includes an upwardly curved track and said carriage is constructed to reciprocably move on said track.

23. The infant soothing device of claim 21 wherein said carriage includes wheels mounted on a lower portion thereof to allow said carriage to roll on said rocking platform.

24. The infant soothing device of claim 21 wherein said infant restraining device is pivotable with respect to said carriage.

25. The infant soothing device of claim 21 further comprising at least one spring mechanism mounted between said rocking platform and said base.

26. The infant soothing device of claim 21 wherein said base includes a dampening mechanism.

27. The infant soothing device of claim 26 wherein said dampening device is an air piston assembly mounted between said rocking platform and said base.

28. The infant soothing device of claim 24 wherein said infant restraining device is slidably pivotable in an arc with respect to said carriage so that a center of gravity of said infant restraining device is not significantly changed when said seat is slid with respect to said carriage.

29. The infant soothing device of claim 21 wherein said compliant linkage is a torsion drive spring and said torsion drive spring is coupled between said drive assembly and an underside of said rocking platform.

30. The infant soothing device of claim 21 wherein said infant restraining device is an infant seat adjustably attached to said carriage.

31. An infant soothing device comprising:
   a base;
   a rocking platform pivotally mounted to said base, said rocking platform having a track therein for receiving wheels on a carriage;
   a drive mechanism for reciprocating said rocking platform up and down relative to said base; and
   said carriage having an infant restraining device positioned thereon, said carriage constructed to reciprocably move back and forth in said track on said rocking platform.

32. The infant soothing device of claim 31 wherein said track is upwardly curved and includes wells therein for receiving said wheels.

33. The infant soothing device of claim 32 wherein said wells include rails therein to provide a riding surface for said wheels and wherein said wheels include flanges thereon for facilitating the positioning of said wheels with respect to said rails.

34. The infant soothing device of claim 31 wherein said infant restraining device is pivotable with respect to said carriage.

35. The infant soothing device of claim 31 further comprising at least one spring mechanism mounted between said rocking platform and said base.

36. The infant soothing device of claim 31 wherein said base includes a dampening mechanism.

37. The infant soothing device of claim 36 wherein said dampening device is an air piston assembly mounted between said rocking platform and said base.

38. The infant soothing device of claim 31 wherein said drive mechanism includes a compliant linkage linked between said base and said rocking platform for reciprocating said rocking platform up and down relative to said base.

39. The infant soothing device of claim 38 wherein said compliant linkage is a torsion drive spring and said torsion drive spring is coupled between said drive assembly and an underside of said rocking platform.

40. The infant soothing device of claim 31 wherein said infant restraining device is an infant seat adjustably attached to said carriage.

41. An infant soothing device comprising:
   a base;
   a rocking platform pivotally mounted to said base, said rocking platform including an upwardly curved track;
   at least one spring mechanism mounted between said rocking platform and said base;
   a drive mechanism for reciprocating said rocking platform up and down relative to said base, said drive mechanism being linked to said rocking platform using a compliant linkage; and
   a carriage having an infant seat positioned thereon and wheels attached thereto, said carriage constructed to reciprocably move back and forth on said upwardly curved track in said rocking platform.

42. The infant soothing device of claim 41 wherein said infant seat is pivotable with respect to said carriage.

43. The infant soothing device of claim 41 wherein said at least one spring mechanism comprises two compression springs.
44. The infant soothing device of claim 41 wherein said base includes a dampening mechanism.

45. The infant soothing device of claim 44 wherein said dampening device is an air piston assembly mounted between said rocking platform and said base.

46. The infant soothing device of claim 45 wherein said air piston assembly includes a hanger and an axle wherein said hanger is mounted to a piston and has a slot therein to slidably receive said axle and said axle is mounted to either said rocking platform or said base and said piston is shaped to slidably be received by a damper cup mounted in either said rocking platform or said base.

47. The infant soothing device of claim 41 wherein said infant seat is slidably pivotable in an arc with respect to said carriage so that a center of gravity of said seat is not significantly changed when said seat is slid with respect to said carriage.

48. The infant soothing device of claim 41 wherein said compliant linkage is a torsion drive spring and said torsion drive spring is coupled between said drive assembly and an underside of said rocking platform.

49. The infant soothing device of claim 41 wherein said drive mechanism includes an electric motor reduction assembly having an eccentric crank attached thereto coupled to said rocking platform to reciprocably drive said platform up and down with respect to said base.

50. The infant soothing device of claim 41 wherein said eccentric crank is coupled to a torsion drive spring by a sliding couple and said torsion drive spring is coupled to an underside of said rocking platform.

51. The infant soothing device of claim 41 wherein said seat is adjustably coupled to said carriage.

52. The infant soothing device of claim 41 wherein said seat is removably coupled to said carriage.

53. The infant soothing device of claim 41 wherein said seat is slidably coupled to said carriage.

54. The infant soothing device of claim 53 wherein said seat includes a seat platform and said seat platform includes sliding blocks positioned on at least one side thereof shaped to slide in a track positioned in an upper portion of said carriage such that said seat platform is slidable between a forward reclined position and a rearward upright position.

55. The infant soothing device of claim 54 wherein said carriage includes a detent mechanism for releasably securing said seat platform with respect to said carriage.

56. The infant soothing device of claim 55 wherein said detent mechanism includes a resiliently biased pivot release button having a protrusion positioned thereon to interfere with a detent block positioned on a bottom of said seat platform, said pivot release button allowing sliding of said seat platform in said carriage when said pivot release button is depressed and preventing sliding of said seat platform in said carriage when said pivot release button is released.

57. The infant soothing device of claim 41 wherein said track includes cover pieces to retain said wheels in said track.

* * *