INFANT ROCKER BED

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ABSTRACT

A rocker assembly for infants includes upper and lower hollow frame members that join with a mid-section frame via respective hinge members. The hinge members, which include push button release mechanisms, are positioned on each side of the rocker bed along the upper portion and lower frame portions and function to position the respective frame members relative to the mid-section frame. The release mechanisms enable pivoting of the frame members, and therefore, the rocker bed, between an opened, fully extended position and closed, folded position. The mid-section frame forms a slightly curved base for engaging a support surface. A flexible fabric covering is stretched tautly about the frame assembly to provide a support surface for the infant lying thereon. The taut covering, combined with the curved base, allow the bed to be rocked by the motion of the infant or by a caregiver.
INFANT ROCKER BED

BACKGROUND AND FIELD

[0001] The following relates generally to a device for rocking an infant, and more particularly, relates to a foldable, collapsible rocker bed that is suitable for rocking an infant on a mattress of a crib or bed or other suitable, preferably flat surface.

[0002] A variety of infant seats and rocking devices have been developed and are available on the market. For smaller infants who have not yet learned to walk, the infant’s caregiver often prefers to place the infant in a portable “bouncy seat”, baby swing, or car seat when the caregiver is unable to carry or hold the infant. Generally, such types of infant seats consist of a base frame and infant seat frame pivotally connected to one another and a seat member with harness stretched around the infant seat frame for retaining the infant in the seat. The seat portion is moveable in a bouncing type motion when the caregiver presses downward on the seat portion or is moveable by the weight and activity of the infant himself. U.S. Pat. No. 5,868,459, U.S. Pat. No. 5,269,591, U.S. Pat. No. 5,617,594, and U.S. Pat. No. 6,361,106 illustrate only a few examples of such infant seats that bounce or rock.

[0003] A problem often faced by the parents or caregivers of a newborn or small infant is soothing the baby to the point of sleeping. While a baby swing or an infant seat like those described above can be effective in rocking a baby to sleep, often babies will wake up again upon being removed from the swing or seat to be placed in the crib for a nap or for the night.

[0004] A need therefore exists for an infant rocking device in the form of a collapsible portable bed that can be placed directly onto a crib mattress or other similar surface so that the infant can be rocked to sleep in the device, either by the weight and movement of the infant himself or by gentle rocking by the caregiver, and sleep or nap while lying down comfortably, without requiring transfer of the infant from the device onto the crib or bed mattress.

SUMMARY

[0005] It is desirable to provide a portable rocking bed for small infants for use on a surface such as a crib mattress or other similar surface that is moveable between open and closed positions to enable folding for easy storage and transport. Further, it is desirable to provide a portable rocking bed that can be used on a stable surface for rocking an infant while the infant is lying down, rather than seated, and including a portable rocking bed having a comfortable yet taut support panel covering onto which the infant is placed to facilitate rocking and falling to sleep, such covering having a removable and washable fabric panel for supporting the infant thereon.

[0006] Accordingly, a rocker bed assembly for infants, preferably newborns and small infants, is provided having upper and lower hollow frame members that join with a mid-section frame. The rocker bed includes side portions that converge into a common, rounded upper back portion and a rounded, lower leg portion extends forwardly from the lower ends of the side portions. A removable covering is positioned around the upper back portion and leg portions.

[0007] A distinctive feature of the rocker bed assembly is the configuration of the hinge connection between the upper back portion and the leg portion with a mid-section portion.

Respective connector members include push button release mechanisms and are located on each side of the rocker bed along the upper portion and lower portion. The connector members and release mechanisms function to lock in place or release the respective frame members from the mid-section frame portions. The mechanisms enable pivoting of the frame members between opened and closed positions. When the bed is in the open, fully extended position, pressing on the push button release mechanisms causes a release of the locked frame members to allow for inward folding. In the folded state, then, the upper and lower frame members are folded inwardly to converge and rest on top of the mid-section frame.

[0008] The mid-section portion forms a slightly curved, ground-engaging base when the rocker bed is in its fully extended position, while the upper back portion and leg portion curve slightly upward. The covering stretches across the upper and lower hollow frame members, thereby forming a taut surface upon which an infant can be placed. A standard infant restraint is attached to the surface of the covering to prevent the infant from rolling out of the rocker bed.

[0009] The taut covering, in combination with the curved base, permits a slight rocking motion of the assembly when an infant is placed on the surface of the rocker bed. The rocking motion does not require any type of drive mechanism and is caused only by the weight/movement of the infant in combination with the curved base, or by a gentle manual rocking of the bed by the infant’s caregiver.

[0010] The above and other advantages and features will become more readily appreciated and understood from a consideration of the following detailed description of different embodiments when taken together with the accompanying drawings in which:

BRIEF DESCRIPTION OF THE DRAWINGS

[0011] FIG. 1 shows a perspective view of the infant rock bed in accordance with the present invention in the fully extended position;

[0012] FIG. 2 is a side view of the infant rocker bed of FIG. 1;

[0013] FIG. 3 is a top view of the infant rocker bed of FIG. 1;

[0014] FIG. 4 is a bottom view of the infant rocker bed of FIG. 1;

[0015] FIG. 5 is an end view of the infant rocker bed of FIG. 1, showing one of the end feet;

[0016] FIG. 6 is side view, partially in section of the infant rocker bed of FIG. 1;

[0017] FIG. 7 is a perspective close up view of a release mechanism;

[0018] FIG. 8 is an exploded view of the release mechanism of FIG. 7;

[0019] FIG. 9 is a detail view of a side frame bar of the infant rocker bed of the present invention, showing the push button release mechanisms of FIG. 7;

[0020] FIG. 10 is a perspective view of the frame assembly of the infant rocker bed with the covering removed and in the open, extended position;

[0021] FIG. 11 is a perspective view of the infant rocker bed of the present invention with the top, head frame portion of the frame folded inward;

[0022] FIG. 12 is a perspective view of the infant rocker bed of the present invention with both top and bottom frame portions folded inward; and
FIG. 13 is a side view of the infant rocker bed as shown in FIG. 12.

DETAILED DESCRIPTION

Referring to FIGS. 1 through 13, an infant rocker bed is represented at 1 comprising a unitary main frame assembly 3 having upper hollow frame members 2 and lower hollow frame members 4 that join with mid-section frame portions 6, 7 forming an open frame. As best shown in FIG. 10, the rocker bed includes side frame members 8, 10 that converge into a common, rounded, generally U-shaped back portion 12 adjacent to one end. A rounded, generally U-shaped leg portion 14 extends forwardly from the opposite end of the side frame members 17, 19. The mid-section frame portions 6, 7 are defined by a slightly curved or convex ground-engaging base when the rocker bed is in its fully extended position shown in FIG. 1, while the back portion 12 and leg portion 14 curve slightly upwardly from the mid-section frame portions 6, 7. As shown in FIG. 5, a plastic foot 22 is secured via a screw connection or other suitable means to opposite ends 24, 26 of the main frame member 3 to further stabilize the rocker bed 1 and prevent tipping of the bed 1 when an infant is placed thereon.

A hinge-type connection between the back portion 12 and the leg portion 14 with the mid-section frame portions 6, 7 allows for positioning of the back portion 12 and the leg portion 14 relative to the mid-section frame portions 6, 7. As best seen from FIGS. 7, 8, 9 and 10, a first pair of pivots or hinges 60, 61 join the mid-section frame portion 6 to the upper and lower frame portions 2, 4, while a second pair of hinges 62, 63 likewise join oppositely disposed mid-section frame portion 7 to upper and lower frame portions 2, 4. The hinges 60, 61 and 62, 63 include a first and second pair of push button release mechanisms 18 and 20, respectively, which are positioned on opposite sides of the rocker bed 1 along the upper and lower frame members 2 and 4 for releasing the upper and lower frame members from a locked position with the mid-section frame portion 6, 7.

The first pair of the release mechanisms 18 lock into place or release the upper frame members 2 from the mid-section frame portions 6, 7 when the release mechanism 18 is pressed inwardly, while the second pair of release mechanisms 20 lock into place or release the lower frame members 4 from the mid-section frame portions 6, 7 when the release mechanism 20 is pressed inwardly. As shown in FIGS. 7 and 8, the release mechanism 18 includes collars 72, 74, 76 for secure frame portion ends 76, 78, for example, to the release mechanism 18, a base cylinder 21 having a circular recess 80 and bores 82, 84 that correspond to complementary ridges 82, 84 on a gasket member 25, spring member 23, outer corresponding cylinder cover 27, securing pin 86 and push button 29. Actuating the push button release members 18, 20 essentially enables pivoting of the frame members 2, 4 relative to the mid-section frame portions 6, 7 between opened and closed positions. When the bed is in the opened, fully extended position, as shown in FIG. 1, pressing on the push button release mechanisms 18, 20 causes a release and permits pivoting of the locked frame members 2, 4 to allow for inward folding of the frame members 2, 4 (see FIGS. 11 through 13).

In the completely folded state shown in FIGS. 11, 12 and 13, the upper and lower frame members 2, 4 are folded inwardly to converge and rest on top of the mid-section frame portions 6, 7. Of course, then, when the rocker bed is in the closed position shown in FIG. 12, actuating the release members 18, 20 releases or unlocks the respective upper and lower frame members 2, 4 and enables the respective upper and lower frame members 2, 4 to be pivoted outwardly away from the mid-section frame portions 6, 7 and snapped into a locked position so that the rocker bed 1 is then in its fully extended position shown in FIG. 1.

The rocker bed 1 further includes a removable covering 28 that is positioned along an upper surface 27 of the rocker bed 1 and over the frame member 3 including the back portion 12 and leg portion 14 and secured thereabout via cooperating snap connections 30 provided on the covering 28. The covering 28 is further secured about the side frame members 8, 10 via suitable closure means, shown in FIG. 4 as a pair of zippers 46, 48 and cooperating Velcro® fasteners 50, 52 provided on opposite sides of the rocker bed 1, although other closure means also could be used to the same effect. The covering 28 also includes reinforcement strips 35, 37 on opposite sides of the rocker bed 1 where the covering 28 wraps around the mid-section portions 6, 7 and engages a ground surface such as a mattress or other type of level surface. Openings 31 in the covering 28 are provided for access to the push button mechanisms 18, 20 and separate recesses 33 accommodate the feet 22 on the ends of the rocker bed 1. The covering 28 preferably is made from a thick, soft and washable fabric such as cotton, and can include padded or quilted head and foot areas 32, 34, respectively, as shown in FIGS. 1 and 3.

The covering 28 is sized to be fit tightly about the upper and lower hollow frame members 2, 4, thereby forming a taut surface 39 when the rocker bed is extended and upon which an infant can be placed in a lying-down/reclined position. The rocker bed 1 ideally is suited for newborns and infants weighing up to 20 pounds to avoid “bottoming out” of the rocker bed 1 on the support surface on which it is placed and to permit rocking of the bed 1.

A standard infant restraint 36 is attached to the upper surface 27 of the covering 28 to prevent the infant from rolling out of the rocker bed 1. The restraint 36 includes a waist strap 40 extending about the mid-section of the infant and a harness panel 42 that is positioned between the legs of the infant and extends up to the infant’s midsection so that cooperating buckle-type fastening means 44 provided on the waist strap and harness panel can be fitted together for securing the infant to the surface 27 of the covering 28.

The entire covering 28 can be easily removed from the frame assembly 3 for cleaning by releasing the covering snaps 30 and opening the zippers 46, 48 and Velcro® fasteners 50, 52.

The taut covering 28 in combination with the curved base formed by the mid-section frame portions 6, 7, permits a slight rocking motion of the rocker bed 1 when an infant is placed on the surface of the rocker bed. The rocking motion does not require any type of drive mechanism and is caused only by the weight and movement of the infant in combination with the curved base, or can be caused by a gentle manual rocking of the bed by the infant’s caregiver.

In use, it is contemplated that the infant rocker bed 1 is placed on a mattress or other level surface and an infant is secured to the top surface 27 of the covering 28 with the restraint 36 in a reclined/lying-down position. The rocker bed 1 then is rockable either by motion of the infant himself or by a gentle back and forth, end to end rocking of the infant bed 1 by a caregiver.
When not in use or to be stored for later use, the rocker bed 1 can be folded together into the closed position shown in FIGS. 11, 12 and 13 by pressing the respective push button release mechanisms 18, 20 and folding the upper and lower frame members 2, 4 inwardly to rest upon the midsection frame portions 6, 7. When the rocker bed 1 is in the folded position, the recess 33 acts as a handle member for easy portability of the folded rocker bed.

It is therefore to be understood that even though numerous characteristics and advantages of the present embodiment have been set forth in the foregoing description, together with the details of the structure and function of the embodiment, the disclosure is illustrative only, and changes may be made within the principles of the embodiment to the full extent indicated by the broad general meaning of the terms in which the appended claims are expressed and reasonable equivalents thereof.

We claim:

1. An infant rocker bed assembly, comprising:
   a unitary main frame having upper and lower frame members pivotally attached to mid-section frame members with means for positioning said upper and lower frame members;
   said mid-section frame members defined by curvilinear, ground-engaging bases, said upper and lower frame members converging away from said mid-section frame members to curve upwardly and terminate in opposite closed ends; and
   a flexible covering secured to said upper and lower frame members and said mid-section frame members.

2. The infant rocker bed assembly according to claim 1 wherein said upper and lower frame members include end stabilization members.

3. The infant rocker bed assembly according to claim 1 wherein said positioning means include a push button release mechanism.

4. The infant rocker bed assembly according to claim 1 wherein said upper and lower frame members are configured to be pivoted outwardly toward said mid-section frame members to position said unitary main frame in a closed position.

5. The infant rocker bed assembly according to claim 1 wherein said upper and lower frame members are configured to be pivoted outwardly away from said mid-section frame members to position said unitary main frame in an opened, fully extended position.

6. An infant rocker device, comprising:
   an upper frame member and a lower frame member, said upper frame member including a back portion for supporting an upper body portion of an infant placed in said device and said lower frame member including a leg portion for supporting a lower body portion of the infant;
   a mid-section frame portion joined to each of said upper and lower frame members via respective positioning members, each of said positioning members having means for releasing and pivoting said upper and lower frame members when said means are actuated, wherein said upper and lower frame members are configured to be pivoted inwardly toward said mid-section frame portion to position said rocker device into a closed position and to be pivoted outwardly away from said mid-section frame portion to position said rocker device in an opened, fully extended position, wherein said mid-section frame portion forms a curved base that engages a support surface, wherein the back portion and leg portion curve upwardly from said mid-section frame portion;
   a flexible covering tautly and releasably secured about said upper and lower frame members and surrounding said mid-section frame portion to provide a firm, top surface for supporting the infant in a substantially horizontal, lying-down position relative to the support surface, said covering including an infant restraint device for securing the infant to the top surface of the covering, wherein the covering and mid-section frame portion are together configured to permit manual rocking of the device.

7. The infant rocker device according to claim 6, further comprising stabilizing feet secured to said upper and lower frame members at opposite ends of the device, wherein said feet are configured to stabilize and to limit rocking motion of the rocker device.

8. The infant rocker device according to claim 6, wherein the covering includes closure means for releasably securing the covering about said upper and lower frame members and said mid-section portion.

9. The infant rocker device according to claim 6, wherein the upper and lower frame members comprise hollow aluminum tube members.

10. The infant rocker device according to claim 6, wherein said means for releasing and pivoting the upper and lower frame members comprise push button release mechanisms.

11. The infant rocker device according to claim 1, wherein said positioning members are disposed on opposite sides of each of the upper frame members and lower frame members, respectively.

12. The infant rocker device according to claim 7, wherein said covering includes openings for allowing access to said means for releasing and pivoting the upper and lower frame members and for accommodating said stabilizing feet.

13. The infant rocker device according to claim 6, wherein said covering includes an infant restraint device for securing the infant to the top surface of the covering.

14. The infant rocker device according to claim 6, wherein said covering comprises a soft, thick fabric and includes padded head and foot portions.

15. A portable bed for rocking an infant, comprising:
   a unitary main frame assembly including upper and lower spaced frame members interconnected by a mid-section frame portion joined to facing ends of said upper and lower frame members, said mid-section frame portion including means for positioning said upper and lower frame members relative to said mid-section frame portion so that said bed is convertible between a closed position and an open, fully extended position upon actuation of said means, wherein said mid-section frame portion forms a curved base that rests upon a support surface and said upper and lower spaced frame members define a back portion and leg portion converging away from said mid-section frame portion to curve upwardly, and terminate in opposite closed ends, thereby providing a substantially flat surface upon which an infant can lie substantially horizontally relative to the support surface; and
   a flexible covering secured about said upper and lower frame members and surrounding said mid-section frame portion to provide a firm, top surface for supporting the infant when said bed is in the extended position, said covering including an infant restraint device for securing
16. The portable bed according to claim 15, wherein said back portion supports an upper body portion of the infant positioned on said portable bed and said leg portion supports a lower body portion of the infant.

17. The portable bed according to claim 15, wherein said upper and lower frame members are configured to be pivoted inwardly toward said mid-section frame portion to position said portable bed into the closed position and to be pivoted outwardly away from said mid-section frame portion to position said portable bed into an open, fully extended position.

18. A collapsible device for rocking an infant, comprising: an open, unitary main frame assembly having upper, lower, and mid-section frame portions, said frame assembly including means for releasing and pivoting said upper and lower frame portions relative to said mid-section frame portion, such that said frame member is convertible between a closed position and an open, fully extended position, wherein said mid-section frame portion forms a curved base for partially contacting a support surface; a flexible covering stretched tautly about said frame member to form a firm supporting surface for supporting said infant in a substantially horizontal, lying-down position relative to a support surface on which the device is disposed when said frame member is in the open, fully extended position, wherein said covering and said curved mid-section frame portions are configured so that when the covering is positioned around said frame, the device is manually rockable.

19. The device according to claim 18, further comprising stabilizing feet secured to opposite ends of the frame member, wherein said feet are configured to stabilize and to limit rocking motion of the rocker device.

20. The device according to claim 18, wherein the covering includes closure means for releasably securing the covering about the frame member.

21. The device according to claim 18, wherein the frame members comprise hollow aluminum tube members.

22. The device according to claim 18, wherein the means for releasing and pivoting the upper and lower frame members comprise positioning members having push button release mechanisms.

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