

CONVERTIBLE CHILD SEAT WITH RECLINE

CROSS REFERENCE TO RELATED APPLICATIONS

This application claims the benefit of U.S. Application No. 63/504,115, filed on May 24, 2023, U.S. Application No. 63/512,374, filed July 7, 2023, U.S. Application No. 63/512,375, filed July 7, 2023, U.S. Application No. 63/583,064, filed September 15, 2023, U.S. Application No. 63/587,569, filed October 3, 2023, U.S. Application No. 63/587,571, filed October 3, 2023, U.S. Application No. 63/595,131, filed November 1, 2023, U.S. Application No. 63/595,595, filed November 2, 2023, U.S. Application No. 63/600,210, filed November 17, 2023, U.S. Application No. 63/600,245, filed November 17, 2023, U.S. Application No. 63/610,773, filed December 15, 2023, U.S. Application No. 63/636,310, filed April 19, 2024, and U.S. Application No. 63/636,313, filed April 19, 2024, which is incorporated herein by reference in its entirety.

FIELD

[0001] Exemplary embodiments of the present disclosure relate to the art of high chairs.

BACKGROUND

[0002] High chairs provide a convenient and safe place for babies and children to eat food and occupy their time. Most high chairs are intended for children starting about six months old, when they are able to sit up unassisted and eat solid food. It is desirable to provide a high chair that is adaptable for use by a child over several years and/or sizes.

BRIEF DESCRIPTION

[0003] According to an embodiment, a child seat system includes a child seat configurable between a high chair mode and a booster mode. The child seat includes at least one leg and a seat assembly supportable by the at least one leg. The seat assembly includes a seat back that is movable along an incline path relative to a portion of the seat assembly between a first position and a second position.

[0004] In addition to one or more of the features described herein, or as an alternative, in further embodiments the seat assembly includes a seat member having a seat portion and at least one sidewall extending upwardly from the seat portion. The seat back is movable along the incline path relative to the seat member.

[0005] In addition to one or more of the features described herein, or as an alternative, in further embodiments in the first position an end of the seat back is generally aligned with the seat portion and in the second position, the end of the seat back is positioned vertically beneath the seat portion.

[0006] In addition to one or more of the features described herein, or as an alternative, in further embodiments the seat member includes at least one rib and the seat member includes at least one slot. The at least one rib is receivable within the at least one slot to define the incline path.

[0007] In addition to one or more of the features described herein, or as an alternative, in further embodiments the at least one slot extends beneath the seat portion of the seat member.

[0008] In addition to one or more of the features described herein, or as an alternative, in further embodiments a recline lock mechanism is operable to lock the seat back in the first position and the second position. The recline lock mechanism includes at least one recline pin movable between a locked position and an unlocked position and at least one lock opening. The at least one recline pin is receivable within the at least one lock opening in the locked position. A biasing mechanism is operably coupled to the at least one recline pin. A biasing force of the biasing mechanism biases the at least one recline pin to the locked position.

[0009] In addition to one or more of the features described herein, or as an alternative, in further embodiments the at least one recline pin is arranged at the seat back and the at least one lock opening is formed at the at least one sidewall.

[0010] In addition to one or more of the features described herein, or as an alternative, in further embodiments an actuator is operably coupled to the at least one recline pin. The actuator is operable to transform the at least one recline pin from the locked position to the unlocked position.

[0011] In addition to one or more of the features described herein, or as an alternative, in further embodiments the at least one recline pin includes a plurality of recline pins. The actuator is operable to transform the plurality of recline pins from the locked position to the unlocked position in unison.

[0012] In addition to one or more of the features described herein, or as an alternative, in further embodiments the seat assembly includes a seat base and a seat member. The seat member includes the seat back. The seat member is movable along the incline path relative to the seat base.

[0013] In addition to one or more of the features described herein, or as an alternative, in further embodiments a recline lock mechanism is operable to lock the seat back in the first

position and the second position. The recline lock mechanism including at least one recline pin movable between a locked position and an unlocked position, and at least one lock opening. The at least one recline pin is receivable within the at least one lock opening in the locked position. A biasing mechanism is operably coupled to the at least one recline pin. A biasing force of the biasing mechanism biases the at least one recline pin to the locked position.

[0014] In addition to one or more of the features described herein, or as an alternative, in further embodiments the recline lock mechanism includes a cap mounted to a bottom of the seat member. The at least one recline pin is coupled to the seat member via the cap.

[0015] In addition to one or more of the features described herein, or as an alternative, in further embodiments in the locked position, the at least one recline pin protrudes through an opening formed in the cap.

[0016] In addition to one or more of the features described herein, or as an alternative, in further embodiments an actuator is operably coupled to the at least one recline pin. The actuator is operable to transform the at least one recline pin from the locked position to the unlocked position.

[0017] In addition to one or more of the features described herein, or as an alternative, in further embodiments the actuator includes a handle having at least one slot formed therein and the at least one recline pin includes an engagement pin receivable within the at least one slot.

[0018] In addition to one or more of the features described herein, or as an alternative, in further embodiments the at least one slot is arranged at an angle to a direction of movement of the handle.

[0019] In addition to one or more of the features described herein, or as an alternative, in further embodiments the cap includes a resilient protrusion engageable with a portion of a harness assembly.

[0020] In addition to one or more of the features described herein, or as an alternative, in further embodiments the recline lock mechanism includes at least one slot and the seat base includes at least one rib. The at least one rib is receivable within the at least one slot to define the incline path.

[0021] In addition to one or more of the features described herein, or as an alternative, in further embodiments the seat base includes a base recline groove and the seat member includes a seat recline member receivable within the base recline groove.

[0022] In addition to one or more of the features described herein, or as an alternative, in further embodiments a seat pad is positionable about the seat assembly.

[0023] In addition to one or more of the features described herein, or as an alternative, in further embodiments the seat assembly includes a depression and the seat pad includes a seat pad protrusion receivable within the depression to position the seat pad about the seat assembly.

[0024] In addition to one or more of the features described herein, or as an alternative, in further embodiments the seat back is movable along the incline path when the child seat is in each of the high chair mode and the booster mode.

[0025] In addition to one or more of the features described herein, or as an alternative, in further embodiments a seat back extension member is connectable to the seat back for movement along the incline path.

[0026] According to an embodiment, a child seat assembly includes at least one leg and a seat base. The seat base is supportable by the at least one leg. A seat back is slidable along an incline path relative to the seat base between a first incline position and a second incline position.

[0027] In addition to one or more of the features described herein, or as an alternative, in further embodiments when the seat back transitions between the first incline position and the second incline position, the seat back rotates relative to the seat base about an axis that is offset from an intersection between the seat back and the seat base.

[0028] In addition to one or more of the features described herein, or as an alternative, in further embodiments the seat back is part of a seat member and the seat member includes a seat portion and at least one sidewall extending upwardly from the seat portion.

[0029] In addition to one or more of the features described herein, or as an alternative, in further embodiments in the first incline position, an end of the seat back is generally aligned with the seat portion and in the second incline position, the end of the seat back is positioned vertically beneath the seat portion.

[0030] In addition to one or more of the features described herein, or as an alternative, in further embodiments the seat portion and the at least one sidewall are fixedly mounted to the seat base.

[0031] In addition to one or more of the features described herein, or as an alternative, in further embodiments the seat member is movable relative to the seat base.

[0032] In addition to one or more of the features described herein, or as an alternative, in further embodiments a seat back extension member is connectable to the seat back.

[0033] According to an embodiment, a child seat assembly includes a seat base and a seat member including a seat portion and a back portion. The seat member is movably coupled

to the seat base. The back portion of the seat member is movably coupled to the seat portion of the seat member.

[0034] In addition to one or more of the features described herein, or as an alternative, in further embodiments the seat member is movable relative to the seat base along an incline path.

[0035] In addition to one or more of the features described herein, or as an alternative, in further embodiments the seat member is translatable relative to the seat base along a linear path.

[0036] In addition to one or more of the features described herein, or as an alternative, in further embodiments the back portion is movable along an incline path relative to the seat portion between a first seat back position and a second seat back position.

[0037] In addition to one or more of the features described herein, or as an alternative, in further embodiments in the first seat back position, an end of the back portion is generally aligned with the seat portion and in the second seat back position, the end of the back portion is positioned vertically beneath the seat portion.

[0038] In addition to one or more of the features described herein, or as an alternative, in further embodiments the back portion includes at least one rib and the seat portion includes at least one slot. The at least one rib is receivable within the at least one slot to define the incline path.

[0039] In addition to one or more of the features described herein, or as an alternative, in further embodiments the at least one slot extends beneath the seat portion of the seat member.

[0040] In addition to one or more of the features described herein, or as an alternative, in further embodiments a recline lock mechanism is operable to at least one of lock the back portion relative to the seat member and lock the seat member relative to the seat base. The recline lock mechanism includes at least one recline pin movable between a locked position and an unlocked position and at least one lock opening. The at least one recline pin is receivable within the at least one lock opening in the locked position. A biasing mechanism is operably coupled to the at least one recline pin. A biasing force of the biasing mechanism biases the at least one recline pin to the locked position.

[0041] In addition to one or more of the features described herein, or as an alternative, in further embodiments the seat member includes at least one sidewall extending upwardly from the seat portion and the at least one recline pin is arranged at the back portion and the at least one lock opening is formed at the at least one sidewall.

[0042] In addition to one or more of the features described herein, or as an alternative, in further embodiments the recline lock mechanism includes a cap mounted to a bottom of the seat member. The at least one recline pin is coupled to the seat member via the cap.

[0043] In addition to one or more of the features described herein, or as an alternative, in further embodiments in the locked position, the at least one recline pin protrudes through an opening formed in the cap.

[0044] In addition to one or more of the features described herein, or as an alternative, in further embodiments an actuator is operably coupled to the at least one recline pin. The actuator is operable to transform the at least one recline pin from the locked position to the unlocked position.

[0045] According to an embodiment, a child seat assembly includes a a seat assembly including a seat member movable along a first path within the child seat assembly. The seat member includes a seat portion and a back portion. The back portion is movable relative to the seat portion along a second path. The back portion is operably coupled to the seat member such that at least one of the back portion is movable along the second path in response to the seat member being moved along the first path and the seat member is movable along the first path in response to the back portion being moved along the second path.

[0046] In addition to one or more of the features described herein, or as an alternative, in further embodiments the first path is an incline path such that the seat member is movable between a first seat member position arranged at a first incline and a second seat member position arranged at a second incline.

[0047] In addition to one or more of the features described herein, or as an alternative, in further embodiments the first path has a linear configuration.

[0048] In addition to one or more of the features described herein, or as an alternative, in further embodiments the seat member is movable along the first path between the first seat member position and the second seat member position and the back portion is movable along the second path between a first seat back position and a second seat back position. The seat member is movable from the first seat member position in response to the back portion being moved to the second seat back position.

[0049] In addition to one or more of the features described herein, or as an alternative, in further embodiments the seat member is movable along the first path between seat first seat member position and the second seat member position and the back portion is movable along the second path between a first seat back position and a second seat back position. The back

portion is movable from the first seat back position in response to the seat member being moved to the second seat member position.

[0050] According to an embodiment, a child seat system that supports a child occupant includes at least one front leg and at least one back leg and a seat assembly supportable by the at least one front leg and the at least one back leg. The seat assembly has a first portion and a second portion. The second portion is movable relative to the first portion between an inclined position and a reclined position. When the child occupant is supported in the child seat system, a center of gravity is at least one of consistent as the second portion moves from the inclined position to the reclined position, moving in a direction towards the at least one front leg as the second portion moves from the inclined position to the reclined position, and moving in a direction towards the at least one back leg less than two inches as the second portion moves from the inclined position to the reclined position.

[0051] In addition to one or more of the features described herein, or as an alternative, in further embodiments the center of gravity of the child seat system is arranged between the at least one front leg and the at least one back leg when the second portion of the seat assembly is in the inclined position and the reclined position.

[0052] In addition to one or more of the features described herein, or as an alternative, in further embodiments the center of gravity is arranged at a midpoint between the at least one front leg and the at least one back leg when the second portion of the seat assembly is in at least one of the inclined position and the reclined position.

[0053] In addition to one or more of the features described herein, or as an alternative, in further embodiments the first portion of the seat assembly is a seat base and the second portion of the seat assembly is a seat member.

[0054] In addition to one or more of the features described herein, or as an alternative, in further embodiments the first portion of the seat assembly is a seat member and the second portion of the seat assembly is a seat back.

[0055] According to an embodiment, a child seat assembly includes at least one leg and a seat connectable to the at least one leg. The seat is configured to recline to provide an upright position and a reclined position. A tray is attachable to the child seat assembly. The tray has a support surface. The support surface of the tray is in a substantially horizontal position when the seat is in the reclined position.

[0056] In addition to one or more of the features described herein, or as an alternative, in further embodiments the support surface is positionable at a substantially horizontal position when the seat is in the upright position.

[0057] In addition to one or more of the features described herein, or as an alternative, in further embodiments the tray is pivotable relative to the seat.

[0058] In addition to one or more of the features described herein, or as an alternative, in further embodiments the tray includes a locking assembly operable to lock the tray in a position relative to the seat.

[0059] In addition to one or more of the features described herein, or as an alternative, in further embodiments the tray is attachable to the child seat assembly in a plurality of discrete orientations.

[0060] In addition to one or more of the features described herein, or as an alternative, in further embodiments the tray is attachable to a portion of the child seat assembly that does not recline with the seat.

[0061] In addition to one or more of the features described herein, or as an alternative, in further embodiments the tray is attachable to the at least one leg.

[0062] In addition to one or more of the features described herein, or as an alternative, in further embodiments the seat includes a seat member and a seat base. At least a portion of the seat member is movable relative to the seat base between the upright position and the reclined position.

[0063] In addition to one or more of the features described herein, or as an alternative, in further embodiments the tray is attachable to the seat base.

[0064] In addition to one or more of the features described herein, or as an alternative, in further embodiments the seat includes a seat member and a seat base. At least a portion of the seat member is movable relative to the seat base between the upright position and the reclined position. The tray is attachable to the portion of the seat member movable relative to the seat base.

[0065] In addition to one or more of the features described herein, or as an alternative, in further embodiments the tray includes a mounting assembly connectable to the child seat assembly.

[0066] In addition to one or more of the features described herein, or as an alternative, in further embodiments the seat member includes a seat portion and at least one sidewall extending from the seat portion. The mounting assembly is positionable in overlapping arrangement with the at least one sidewall.

[0067] In addition to one or more of the features described herein, or as an alternative, in further embodiments the seat includes a seat member having a seat portion and at least one

sidewall extending from the seat portion. The tray is positionable adjacent to an exterior of the at least one sidewall.

[0068] In addition to one or more of the features described herein, or as an alternative, in further embodiments the seat includes a seat member and the tray is positionable proximate to a corner of the seat member.

[0069] According to an embodiment, a child seat assembly includes a seat member having a seat portion and at least one sidewall extending from the seat portion to define an interior of the seat member. At least one tray is attachable to the child seat assembly such that the at least one tray is remote from the interior of the seat member.

[0070] In addition to one or more of the features described herein, or as an alternative, in further embodiments the at least one tray is positionable adjacent to an exterior of the at least one sidewall.

[0071] In addition to one or more of the features described herein, or as an alternative, in further embodiments the at least one tray is positionable proximate to a corner of the seat member.

[0072] In addition to one or more of the features described herein, or as an alternative, in further embodiments the at least one tray includes a first tray and a second tray. The first tray and the second tray are connectable to the child seat assembly simultaneously.

[0073] In addition to one or more of the features described herein, or as an alternative, in further embodiments the first tray is positionable at a first location about an exterior of the seat member and the second tray is positionable at a second located about the exterior of the seat member.

[0074] In addition to one or more of the features described herein, or as an alternative, in further embodiments the at least one tray has a support surface and the support surface is movable relative to the seat member when the at least one tray is attached to the child seat assembly.

[0075] In addition to one or more of the features described herein, or as an alternative, in further embodiments the at least one tray is pivotable relative to the seat member when the at least one tray is attached to the child seat assembly.

[0076] In addition to one or more of the features described herein, or as an alternative, in further embodiments the at least one tray is translatable relative to the seat member when the at least one tray is attached to the child seat assembly.

[0077] In addition to one or more of the features described herein, or as an alternative, in further embodiments the at least one tray includes a locking assembly operable to lock the at least one tray in a position relative to the seat member.

BRIEF DESCRIPTION OF THE DRAWINGS

[0078] The following descriptions should not be considered limiting in any way. With reference to the accompanying drawings, like elements are numbered alike:

[0079] FIG. 1A is a perspective view of a child seat in a first mode according to an embodiment;

[0080] FIGS. 1B and 1C are respective front and side views of the child seat of FIG. 1A according to an embodiment;

[0081] FIGS. 2A, 2B, and 2C are respective perspective, front, and side views of a child seat in a first mode without a seat back extension member according to an embodiment;

[0082] FIGS. 3A, 3B, 3C, and 3D are respective perspective, front, and side views of a child seat in the second mode according to an embodiment;

[0083] FIGS. 4A, 4B, and 4C, are respective perspective, front, and side views of a child seat in the second mode without a seatback and a tray according to an embodiment;

[0084] FIG. 5 is a bottom perspective view of a seat assembly according to an embodiment;

[0085] FIGS. 6A, 6B, and 6C are respective perspective, front, and side views of a child seat in a third mode according to an embodiment;

[0086] FIGS. 7A, 7B, and 7C are respective perspective, front, and side views of a child seat in a third mode and without a seatback according to an embodiment;

[0087] FIGS. 8A, 8B, and 8C are respective perspective, front, and side views of a child seat in a fourth mode according to an embodiment.

[0088] FIG. 8D is an exploded view of a child seat in a fourth mode and including a tray according to an embodiment;

[0089] FIG. 9 is a side view of a child seat in the fourth mode adjacent to a side view of the child seat in a third mode according to an embodiment;

[0090] FIG. 10 is a partially exploded view of a leg assembly of the child seat of FIG. 9A according to an embodiment;

[0091] FIG. 11 is a detailed view of a portion of the leg assembly of FIG. 10;

[0092] FIGS. 12A, 12B, and 12C are respective perspective, top, and side views of a leg attachment insert for a child seat according to an embodiment;

[0093] FIG. 13 is a perspective view of a leg attachment insert for a child seat according to an embodiment;

[0094] FIGS. 14A, 14B, and 14C are respective top perspective, bottom perspective, and exploded perspective views of a leg attachment insert for a child seat according to an embodiment;

[0095] FIGS. 15A and 15B are respective bottom perspective and top perspective views of a leg attachment insert for a child seat according to an embodiment;

[0096] FIGS. 16A and 16B are respective bottom perspective and top perspective views of a leg attachment insert for a child seat according to an embodiment;

[0097] FIGS. 17A and 17B are respective bottom perspective and top perspective views of a leg attachment insert for a child seat according to an embodiment;

[0098] FIG. 18 is a partial transparent perspective view of a leg and a seat base of a child seat in an assembled state according to an embodiment;

[0099] FIG. 19 is a detailed, partial transparent perspective view of the leg and seat base of FIG. 18 according to an embodiment;

[0100] FIG. 20A is a detailed, partial transparent side view of a leg and a seat base of a child seat when disassembled according to an embodiment;

[0101] FIG. 20B is a detailed, partial transparent side view of a leg and a seat base of the child seat of FIG. 20A when assembled according to an embodiment;

[0102] FIG. 21 is a perspective view of a leg and a seat base of the child seat when disassembled according to an embodiment;

[0103] FIG. 22A is a front perspective view of the child seat in the second mode according to an embodiment;

[0104] FIG. 22B is a bottom perspective view of the child seat of FIG. 22A in the second mode;

[0105] FIG. 23A is a bottom perspective view of a seat assembly for a child seat including a lockable storage compartment according to an embodiment;

[0106] FIGS. 23B and 23C are partial detailed views of the seat assembly of FIG. 23A showing locking actuation of the storage compartment according to an embodiment;

[0107] FIGS. 24A and 24B are partial transparent side views of the seat assembly of FIG. 23A showing locking actuation of the storage compartment according to an embodiment;

[0108] FIG. 25 is a partially transparent perspective view of the child seat in a first mode according to an embodiment;

[0109] FIG. 26 is a perspective view of a cross-brace for a leg assembly of a child seat according to an embodiment;

[0110] FIG. 27 is a detailed view of a portion of the cross-brace of FIG. 26 according to an embodiment;

[0111] FIG. 28 is an exploded perspective view of a cross-brace for a leg assembly of a child seat according to an embodiment;

[0112] FIG. 29 is an exploded perspective view of a cross-brace and a portion of a child seat according to an embodiment;

[0113] FIG. 30 is a perspective view of a cross-brace for a leg of a child seat according to another embodiment;

[0114] FIGS. 31A and 31B are respective top and bottom perspective views of a footrest according to an embodiment;

[0115] FIGS. 32A and 32B are a respective bottom and top perspective views of the footrest of FIGS. 31A-31B mounted to a leg of a child seat according to an embodiment;

[0116] FIGS. 33A and 33B are respective front and side views of a child seat in a first mode according to an embodiment;

[0117] FIG. 34A is a perspective view of a seat assembly for a child seat including a recline function according to an embodiment;

[0118] FIG. 34B is an exploded perspective view of the seat assembly of FIG. 34A according to an embodiment;

[0119] FIGS. 35A-35C are partial detailed views of the seat assembly showing actuation for reclining according to an embodiment;

[0120] FIG. 36 is a transparent perspective view of a seat assembly including a recline function for a child seat according to an embodiment;

[0121] FIGS. 37A and 37B are partial detailed views of the seat assembly of FIG. 36 showing internal actuation for reclining according to an embodiment;

[0122] FIGS. 38A, 38B, and 38C are side cross-sectional views of steps in assembling the seat assembly according to an embodiment;

[0123] FIG. 39A is a perspective view of a seat assembly for a child seat including a recline function according to an embodiment;

[0124] FIG. 39B is an exploded perspective view of the seat assembly of FIG. 39A according to an embodiment;

[0125] FIG. 40 is a detailed exploded perspective view of a portion of the seat assembly of FIG. 39B according to an embodiment;

[0126] FIG. 41 is a rear partially transparent perspective view of a portion of the seat assembly of FIG. 39A according to an embodiment;

[0127] FIG. 42A is a partially transparent perspective view of a portion of a seat assembly in an upright position according to an embodiment;

[0128] FIG. 42B is a partially transparent perspective view of a portion of a seat assembly in a reclined position according to an embodiment;

[0129] FIG. 43 is an exploded perspective view of a seat assembly according to an embodiment;

[0130] FIG. 44A is a bottom perspective view of a seat member of the seat assembly of FIG. 43 according to an embodiment;

[0131] FIG. 44B is a top perspective view of a seat base of the seat assembly of FIG. 43 according to an embodiment;

[0132] FIG. 45 is a cross-sectional view of the seat assembly of FIG. 43 in a second incline position according to an embodiment;

[0133] FIG. 46 is a perspective view of a portion of a recline lock mechanism attached to a seat base in a second incline position according to an embodiment;

[0134] FIGS. 47A, 47B, and 47C are side cross-sectional views of steps in assembling the seat assembly according to an embodiment;

[0135] FIG. 48 is a bottom perspective view of an assembled seat assembly according to an embodiment;

[0136] FIGS. 49A and 49B are various perspective views of a seat assembly according to another embodiment;

[0137] FIG. 50 is a perspective cross-sectional view of a seat assembly according to an embodiment; and

[0138] FIG. 51 is a perspective cross-sectional view of a seat assembly according to another embodiment;

[0139] FIGS. 52A and 52B are side views of a child seat in a fully upright and a fully reclined position according to an embodiment;

[0140] FIGS. 52C and 52D are side views of the child seat of FIGS. 52A and 52B in a fully upright and a fully reclined position having an occupant between about 0 and 3 months of age according to an embodiment;

[0141] FIGS. 53A and 53B are side views of a child seat in a fully upright and a fully reclined position having an occupant approximately 1 year old according to an embodiment;

[0142] FIGS. 54A and 54B are side views of a child seat in a fully upright and a fully reclined position having an occupant approximately 3 years old according to an embodiment;

[0143] FIG. 55 is a side view of a child seat according to an embodiment;

[0144] FIG. 56 is a rear perspective view of a seat assembly of the child seat according to an embodiment;

[0145] FIG. 57A is a rear perspective view of a seat assembly having a seat back extension member exploded from the seat back according to an embodiment;

[0146] FIG. 57B is a front perspective view of the seat assembly of FIG. 57A according to an embodiment;

[0147] FIG. 58A is a side perspective view of a seat assembly having a seat back extension member during assembly of the seat back extension member to the seat back according to an embodiment;

[0148] FIG. 58B is a side perspective view of a seat assembly having a seat back extension member connected to the seat back according to an embodiment;

[0149] FIG. 59A is a cross-sectional view of the seat back extension member as it is coupled to the seat back according to an embodiment;

[0150] FIG. 59B is a cross-sectional view of the seat back extension member coupled to the seat back according to an embodiment;

[0151] FIG. 60 is a side view of a seat member having a tray connected thereto according to an embodiment;

[0152] FIG. 61 is an exploded view of a seat member and a tray connectable to the seat member according to an embodiment;

[0153] FIG. 62 is a cross-sectional view of a connector element of a tray according to an embodiment;

[0154] FIG. 63 is a top perspective view of a tray and a connector element of a tray according to an element;

[0155] FIG. 64 is a cross-sectional view of a connector element of a tray engaged with a seat member according to an embodiment;

[0156] FIG. 65A is a cross-sectional view of the connector element of FIG. 64 when the connector element is disengaged from the seat member according to an embodiment;

[0157] FIG. 65B is a cross-sectional view of the connector element of FIG. 65A as the connector element moves into engagement with the seat member according to an embodiment;

[0158] FIG. 65C is a cross-sectional view of the connector element of FIG. 65A as engagement member of the connector element moves out of engagement with the seat member according to an embodiment; and

[0159] FIG. 65D is a cross-sectional view of the connector element of FIG. 65A when the connector element is engaged with the seat member according to an embodiment;

[0160] FIG. 66 is a cross-sectional view of a connector element of a tray engaged with a seat member according to an embodiment;

[0161] FIG. 67A is a cross-sectional view of the connector element engaged with the seat member according to an embodiment;

[0162] FIG. 67B is a cross-sectional view of the connector element of FIG. 67A as the connector element disengaged with the seat member according to an embodiment;

[0163] FIG. 68 is a cross-sectional view of a connector element of a tray engaged with a seat member according to another embodiment;

[0164] FIG. 69A is a perspective view of an upper leg section according to an embodiment;

[0165] FIG. 69B is an exploded perspective view of the upper leg section of FIG. 69A including a top cap and a joining post according to an embodiment;

[0166] FIG. 70 is a perspective view of a lower leg section according to an embodiment;

[0167] FIG. 71A is a perspective view of a leg assembly according to an embodiment;

[0168] FIG. 71B is an exploded perspective view of the leg assembly of FIG. 71A according to an embodiment;

[0169] FIG. 72A is a perspective view of a leg assembly according to another embodiment;

[0170] FIG. 72B is an exploded perspective view of the leg assembly of FIG. 72A according to an embodiment;

[0171] FIG. 73 is a perspective view of child seat having a leg assembly according to an embodiment;

[0172] FIG. 74 is a cross-sectional view of a leg assembly of FIG. 73 according to an embodiment;

[0173] FIG. 75 is a bottom perspective view of a seat assembly including a seat storage compartment according to an embodiment;

[0174] FIG. 76 is a perspective view of a bottom of a seat base including a locking mechanism associated with a seat storage compartment according to an embodiment;

[0175] FIG. 77 is a perspective view of a lid of a seat storage compartment according to an embodiment;

[0176] FIG. 78A is a perspective view of the locking mechanism of FIG. 76 in a locked configuration according to an embodiment;

[0177] FIG. 78B is a perspective view of the locking mechanism of FIG. 76 in an unlocked configuration according to an embodiment;

[0178] FIG. 79A is a perspective view of a bottom of a seat base having a closed seat storage compartment according to an embodiment;

[0179] FIG. 79B is a view of a bottom of a seat base having an open seat storage compartment according to an embodiment;

[0180] FIG. 80 is a perspective view of a disconnectable cross-brace assembly according to an embodiment;

[0181] FIG. 81 is a perspective view of a portion of the cross-brace assembly according to an embodiment;

[0182] FIG. 82 is a perspective view of a child seat having a support member assembly according to an embodiment;

[0183] FIG. 83 is a perspective view of a support member assembly according to an embodiment;

[0184] FIG. 84A is a perspective view of a support member assembly having a support member coupled to a cross-brace assembly according to an embodiment;

[0185] FIG. 84B is a perspective view of a support member assembly having a support member partially uncoupled to a cross-brace assembly according to an embodiment;

[0186] FIG. 85A is a top perspective view of a support member assembly having a footrest according to an embodiment;

[0187] FIG. 85B is a bottom perspective view of the support member assembly of FIG. 85A according to an embodiment;

[0188] FIG. 86 is a perspective view of a child seat having a support member assembly according to another embodiment;

[0189] FIG. 87 is a perspective view of a support member assembly according to an embodiment;

[0190] FIG. 88A is an exploded view of the support member assembly connected to a leg assembly;

[0191] FIG. 88B is a cross-sectional view of the leg assembly and the support member assembly of FIG. 88A according to an embodiment;

[0192] FIG. 89A is a perspective view of a standard height child seat having a support member assembly according to another embodiment;

[0193] FIG. 89B is a perspective view counter height child seat having a support member assembly according to another embodiment;

[0194] FIG. 90 is a perspective view of support member assembly according to an embodiment;

[0195] FIG. 91 is a bottom perspective view of support member assembly according to an embodiment;

[0196] FIG. 92 is a cross-sectional view of the support member assembly of FIG. 90 according to an embodiment;

[0197] FIG. 93A is a cross-sectional view of the support member assembly of FIG. 90 during connection of the support member assembly to the leg assembly according to an embodiment;

[0198] FIG. 93B is a cross-sectional view of the support member assembly of FIG. 90 coupled to the leg assembly according to an embodiment;

[0199] FIG. 94 is a perspective view of support member assembly according to an embodiment;

[0200] FIG. 95A is an exploded view of a leg assembly connectable to the support member assembly of FIG. 94 according to an embodiment;

[0201] FIG. 95B is a rear exploded view of a leg assembly connectable to the support member assembly of FIG. 94 according to an embodiment;

[0202] FIG. 95C is a perspective view of the support member assembly of FIG. 94 coupled to a leg assembly according to an embodiment;

[0203] FIG. 96A is a perspective view of a portion of a support member assembly according to an embodiment;

[0204] FIG. 96B is a bottom perspective view of the portion of a support member assembly of FIG. 96A according to an embodiment;

[0205] FIG. 96C is an exploded perspective view of a mounting bracket of a support member assembly of FIG. 96A according to an embodiment;

[0206] FIG. 97 is a rear perspective view of a seat assembly of the child seat according to an embodiment;

[0207] FIG. 98A is a cross-sectional view of a recline actuator of a seat assembly in an engaged position according to an embodiment;

[0208] FIG. 98B is a cross-sectional view of the recline actuator of FIG. 98A in a disengaged position according to an embodiment;

[0209] FIG. 99A is a perspective view of a child seat having a tray assembly and a seat member in an upright position according to an embodiment;

[0210] FIG. 99B is a perspective view of a child seat having a tray assembly and a seat member in a recline position according to an embodiment;

[0211] FIG. 100A is a perspective view of a tray assembly a first configuration according to an embodiment;

[0212] FIG. 100B is a bottom perspective view of the tray assembly of FIG. 100A according to an embodiment;

[0213] FIG. 100C is an exploded view of the tray assembly of FIG. 100A according to an embodiment;

[0214] FIG. 101 is a perspective view of the tray assembly of FIG. 100A in a second configuration according to an embodiment;

[0215] FIG. 102A is a perspective view of a child seat having a tray assembly and a seat member in an upright position according to an embodiment;

[0216] FIG. 102B is a perspective view of a child seat having a tray assembly and a seat member in an upright position according to an embodiment;

[0217] FIG. 103A is a perspective view of a child seat having a tray assembly mounted in first angular orientation to a seat member in a recline position according to an embodiment;

[0218] FIG. 103B is a perspective view of a child seat having a tray assembly mounted in second angular orientation a seat member in an upright position according to an embodiment;

[0219] FIG. 104 is a perspective view of a tray assembly of FIGS. 103A and 103B according to an embodiment;

[0220] FIG. 105A is a perspective view of a tray assembly connectable to a seat member of a child seat according to an embodiment;

[0221] FIG. 105B is another perspective view of the tray assembly of FIG. 105A connectable to a seat member of a child seat according to an embodiment;

[0222] FIG. 106A is a perspective view of a child seat having a tray assembly of FIGS. 105A and 105B mounted in first position to a seat member according to an embodiment;

[0223] FIG. 106B is a perspective view of a child seat having a tray assembly of FIGS. 105A and 105B mounted in second position to a seat member according to an embodiment;

[0224] FIG. 107A is a perspective view of a child seat having a tray assembly and a seat member in an upright position according to an embodiment;

[0225] FIG. 107B is a perspective view of a child seat having a tray assembly and a seat member in a recline position according to an embodiment;

[0226] FIG. 108 is a perspective view of a tray assembly of FIGS. 107A and 107B according to an embodiment;

[0227] FIG. 109A is a perspective view of a child seat having a tray assembly and a seat member in an upright position according to an embodiment;

[0228] FIG. 109B is a perspective view of a child seat having a tray assembly and a seat member in an upright position according to an embodiment;

[0229] FIG. 109C is a perspective view of a child seat having a tray assembly and a seat member in a recline position according to an embodiment;

[0230] FIG. 110 is a perspective view of a child seat and a play table according to an embodiment;

[0231] FIG. 111 is a bottom perspective view of the play table of FIG. 110 according to an embodiment;

[0232] FIG. 112 is a detailed perspective view of a bottom of the play table of FIG. 110 according to an embodiment;

[0233] FIG. 113 is a detailed perspective view of a fastener of the tray of the play table according to an embodiment; and

[0234] FIG. 114 is a bottom perspective view of a seat base of the child seat of FIG. 110 according to an embodiment.

DETAILED DESCRIPTION

[0235] A detailed description of one or more embodiments of the disclosed apparatus and method are presented herein by way of exemplification and not limitation with reference to the Figures.

[0236] Embodiments of the present disclosure provide a child seat 20 that may be configured in various modes corresponding to different intended uses and seat heights along with different child sizes (e.g., infant, toddler, youth), different table sizes (standard, youth, counter), and different support surfaces (e.g., floor, chair). With reference to FIGS. 1A-3C, an example of a child seat 20 is illustrated in a first mode 20A (also referred to as a high chair mode). In FIGS. 4-6C, an example of a child seat 20 is illustrated in a second mode 20B (also referred to as a booster mode). In FIGS. 7A-8C, an example of a child seat 20 is illustrated in a third mode 20C (also referred to as a youth chair mode). In FIGS. 9A-11A, an example of a child seat 20 is illustrated in a fourth mode 20D (also referred to as a counter height mode).

[0237] With reference to the FIGS., an example of a child seat 20 is illustrated. As shown, the child seat 20 has a seat assembly 22 and at least one leg 24 for accommodating the child seat 20 on a support surface, such as a floor for example. The seat assembly 22 includes a seat member 26 having a generally horizontally oriented seat portion 28 and at least one sidewall, such as a first and second upright sidewall 30 arranged at opposing lateral sides of the seat portion, respectively. A seat back 32 may be connected to at least one of the horizontal seat portion 28 and to the upright sidewalls 30. In the illustrated, non-limiting embodiment (FIGS. 2A-2C), the seat back 32 is generally equal to the vertical height of one or both of the first and second upright sidewalls 30. However, embodiments where the vertical height of the seat back 32 extends vertically beyond the vertical height of one or both of the first and second upright sidewalls 30 are also contemplated herein. In an embodiment, such as shown in FIG. 97, the vertical height of the seat back 32 may vary between the sidewalls 30. As shown, the seat back 32 may be formed with a convex curvature or peak such that a vertical height at a central portion of the seat back 32 is greater than a vertical height of at a portion of the seat back 32 proximate to the first and second upright sidewalls 30. In an embodiment, the seat member 26, including the seat portion 28, the seat back 32, and the upright sidewalls 30, is formed as a single unitary component, such as molded from a plastic or composite material for example. However, embodiments where at least a portion of the seat member 26 is formed as a separate component permanently or removably connected to the remainder of the seat member 26 are also within the scope of the disclosure.

[0238] The seat portion 28, upright sidewalls 30, and seat back 32 of the seat member 26 cooperate to define a generally hollow interior 34 within which the body of a child is receivable. Furthermore, a front 36 of the seat member 26 is open to accommodate the legs of a child when a child is seated within the hollow interior 34. In an embodiment, the seat member 26 is intended for use by a toddler or an infant capable of supporting themselves in an upright position, such as a child typically six months of age or older. Accordingly, the seat member 26 is suitable to receive a child sitting in contact with the seat portion 28 with the child's back supported at least partially by the seat back 32.

[0239] A seat back extension member 38 may be removably connectable to the seat member 26 to increase the vertical height of the seat back 32. When connected, the seat back 32 and seat back extension member 38, in combination, extend vertically beyond the upright sidewalls 30. In such embodiments, a contour of the seat back extension member 38 may but need not be generally complementary or identical to the contour of the seat back 32. The seat back extension member 38 may be formed from the same material, or alternatively, from a

different material than the seat member 26. The seat back extension member 38 may be connected to the seat member 26 via any suitable connection mechanism, such as a quick connection mechanism for example.

[0240] With reference now to FIGS. 56-59B, an example of a connection mechanism for affixing the seat back extension member 38 to the seat member 26 is illustrated. In the illustrated, non-limiting embodiment, the seat back extension member 38 includes one or more extension member mounts 250, such as two extension member mounts for example, operable to selectively couple the extension member 38 to a portion of the seat member 26. As shown, each extension member mount 250 is similar to a clip and is insertable into a corresponding opening 252 formed in a portion of the seat member 26. Although the openings 252 are illustrated as being formed at a ledge 253 formed in the seat back 32, it should be understood that in other embodiments the openings 252 may be arranged at another location about the seat member 26. A hook or other engagement feature 254 (see FIGS. 59A-59B) may be formed at the distal end 256 of the extension member mount 250. When the seat back extension member 38 is installed about the seat member 26, such as via insertion of the extension member mount 250 into the corresponding opening 252, the engagement feature 254 is configured to abut against a bottom surface 258 of a portion of the seat member 26 located adjacent to the opening 252. The engagement between the bottom surface 258 and the engagement feature 254 restricts vertical movement of the seat back extension member 38 away from the seat member 26.

[0241] By forming the extension member mount 250 from a resilient material, at least a portion of the extension member mount 250, such as the distal end 256 thereof, may be configured to flex relative to the seat back extension member 38 to decouple the engagement feature 254 from the seat member 26. With continued reference to FIGS. 59A and 59B, to remove the seat back extension member 38 from the seat member 26, a user applies a force to the distal end 256 of the extension member mount 250, such as in an inward direction, illustrated by arrow F. It should be appreciated that the direction of the force will vary based on the position of the engagement feature 254 about the extension member mount 250. As shown, the end 256 of the extension member mount 250 may be arranged adjacent to an exposed surface of the seat back 32 easily accessible by a user. This force F causes the distal end 256 of the extension member mount 250 to flex or rotate, thereby moving the engagement feature 254 out of contact with the adjacent surface 258 and into alignment with the opening 252. While the engagement feature 254 is in this flexed position, the extension member mount 250 can be removed from the opening 252, thereby separating the seat back extension member 38 from the seat member 26. It should be understood that the clips illustrated in the non-limiting

embodiment as the extension member mounts 250 used to couple the seat back extension member 38 to the seat member 26 are intended as an example only and that any suitable connector or coupling mechanism, such as a snap fit connection for example, is also within the scope of the disclosure.

[0242] The seat assembly 22 additionally includes a seat base 40 that supports that seat member 26. The one or more legs 24 of the child seat 20 may be removably connectable to the seat base 40 to support the child seat 20 on a support surface. In an embodiment, the seat base 40 includes at least one leg mount 42 for receiving the at least one leg 24. The at least one leg mount 42 may be an opening formed at a bottom surface 44 of the seat base 40. However, in other embodiments, the at least one leg mount 42 may protrude outwardly from the bottom surface 44 of the seat base 40. In such embodiments, the at least one leg mount 42 may form a seat base leg upon which the seat assembly 22 may be supported on a support surface, absent the one or more legs 24. In an embodiment, best shown in FIG. 5, the at least one leg mount 42 includes a pad or other frictional surface 46 arranged at a distal end thereof to prevent slipping of the seat base 40 relative to a support surface.

[0243] With reference now to FIG. 1, a tray 50 may be mountable to a portion of the child seat 20. The tray 50 may have a generally planar upper support surface 52 configured to support items, such as food for example, at a location easily accessible by an occupant of the seat member 26. In an embodiment, the tray 50 is connectable to an adjacent surface of the seat member 26, such as the front or the upper end of the upright sidewalls 30 for example. In an embodiment, the tray 50 is a front tray positionable in overlapping arrangement with the hollow interior 34 of the seat member 26 and directly in front of a torso of an occupant seated within the interior 34 of the seat member 26. A tray horn 54 or in some embodiments, an armbar (not shown) may be connected to the child seat 20, such as to the seat assembly 22 for example. In an embodiment, the tray horn 54 is permanently connected to the seat assembly 22. As used herein “permanently connected” is intended to represent embodiments where the tray horn 54 is not intended to be disassembled from the tray 50 by a user. Such a connection may be formed by rivets, molding, or another suitable connection mechanism. In such embodiments, the tray 50 and tray horn 54 may be connected to the child seat 20 by a user when the child seat is to be used by a smaller infant and may be removed from the child seat when intended for use by an older toddler or child. This connection between the tray 50 and a portion of the seat member 26, such as the seat member 26 for example, may be formed by fasteners, a snap-fit connection, or another suitable connection mechanism, as will be described in more detail below. However, embodiments where the tray horn 54 is separable from the tray 50 are also contemplated herein.

[0244] As shown, the tray horn 54 is intended to form a barrier extending across at least a portion, and in some embodiments, the entire front 36 of the seat member 26, thereby restricting movement of a child via the front 36 of the seat member 26. The tray horn 54 may cooperate with the front 36 of the seat member 26 to define a first leg opening 52a and a separate or substantially separate second leg opening 52b arranged on opposite sides thereof.

[0245] In an embodiment, the tray 50 is positionable in overlapping arrangement with an upper surface 31 of the seat assembly 22 such that the tray 50 extends between the upright sidewalls 30 of the seat member 26. For example, a groove or channel (not shown) having a shape complementary to the contour of a portion of the seat assembly 22, may be formed at an underside 56 of the tray 50. It should be appreciated that the child seat 20 illustrated and described herein is intended as an example only and that a child seat having any suitable configuration is within the scope of the disclosure.

[0246] With reference now to in FIGS. 60-68, the illustrated tray 50 is mountable to a portion of the child seat 20, such as an upper portion or the seat member 26 for example. As shown, the tray 50 may be connectable to the sidewalls 30 of the seat member 26. In the non-limiting embodiment, the tray 50 is part of a tray assembly including one or more connector elements 302a, 302b operable to engage a portion of the seat member 26 to removably couple the tray 50 to the seat member 26. The at least connector elements 302a, 302b may be arranged near or proximate to a back edge 306 of the tray 50. For example, the first connector element 302a may be located about the tray 50 such that the first connector element 302a is arranged generally adjacent to a first sidewall 30 of the seat member 26, and the second connector element 302b may be located about the tray 50 such that the second connector element 302b is arranged generally adjacent to the second, opposite sidewall 30 of the seat member 26.

[0247] In an embodiment, the first connector element 302a and second connector element 302b are engageable with a ledge 308 extending outwardly from an upper surface 31 of the sidewall 30. At least one groove or slot 310, and in some embodiments a plurality of slots 310 may be formed in the ledge 308, such as an underside of the ledge 308 for example. A portion of each of the connector elements 302a and 302b may be positionable in contact with the underside of the ledge 308, such as with one or more slots 310 for example, to restrict movement of the tray 50 relative to the seat member 26.

[0248] In an embodiment, the tray 50 is connectable to the seat member 26 at a plurality of positions. In an embodiment, each of the plurality of slots 310 defines a corresponding position of the plurality of positions. The distance between the seat back 32 of the seat member

26 and the end of the tray 50 may vary between the plurality of positions to allow for adjustment based on the size of the child seated within the seat member 26.

[0249] The connector elements 302a, 302b may be movable between a first, engaged position and a second, disengaged position to selectively couple to and decouple the tray 50 from the seat member 26. In an embodiment, a biasing mechanism 314 is operably coupled to the connector elements 302a, 302b. The biasing force of the biasing mechanism 314 is configured to bias each respective connector element 302a, 302b toward the first, engaged position. When a user applies a force to either of the connector elements 302a, 302b, this force opposes the biasing force of the biasing mechanism 314 causing the connector element 302a, 302b to transform, for example translate, from the engaged position to the disengaged position.

[0250] As shown, each of the connector elements 302a, 302b includes a latch body 316 movably mounted to the tray 50. For example, the latch body 316 may include one or more protrusions 318 slidably mounted within a corresponding slot 319 (FIG. 63) formed in the tray 50. The slots 319 may define a path of movement, such as translation for example, of the latch body 316 between the engaged position and the disengaged position. In the illustrated, non-limiting embodiment, the path of movement of the latch body 316 is oriented within a generally horizontal plane. The biasing mechanism 314 may be positioned between the tray 50 and the latch body 316 such that the biasing force of the biasing mechanism 314 applies a force to the latch body 316 toward the engaged position.

[0251] In the non-limiting embodiments of FIGS. 60-65D, each connector element 302a, 302b includes a catch 320 movably coupled to the latch body 316. The catch 320 includes an engagement member 322 positioned to engage a slot 310 formed in the seat member 26, to couple the tray 50 to the seat member 26. As shown, the catch 320 is movable relative to the latch body 316 between a first catch engaged position (FIGS. 62-65B, 65D) and a second, catch disengaged position (FIG. 65C). In an embodiment, a biasing mechanism 324 is operably coupled to the catch 320 such that the biasing force of the biasing mechanism 324 biases the engagement member 322 of the catch 320 toward the catch engaged position.

[0252] Engagement between the ledge 308 of the seat member 26 and a surface of the engagement member 322 of the catch 320 as the latch body 316 moves between an engaged position and a disengaged position is operable to oppose the biasing force of the biasing mechanism 324. In the illustrated, non-limiting embodiment, the engagement member 322 has a first ramp surface 326 and a second ramp surface 328. During installation of a tray 50 to the child seat 20, the latch body 316 may be pulled by an operator against the bias of the biasing mechanism 314 into the disengaged position. Once the tray 50 is in position relative to the seat

member 26, the connector element 302a, 302b is released, and the biasing mechanism 314 pushes the latch body 316 including the catch 320 toward the seat member 26.

[0253] As the latch body 316 and catch 320 move, a surface of the seat member 26, such as the ledge 308, engages and applies a force to the first ramp surface 326. Because the first ramp surface 326 is sloped, this force pushes the engagement member 322 in a direction opposing the biasing force of the biasing mechanism 324 to a retracted position. In the retracted position, the engagement member 322 may move beyond the ledge 308 of the seat member 26. Once the ledge 308 moves out of contact with the engagement member 322, the biasing force of the biasing mechanism 324 pushes the engagement member 322 back to an extended position. In the extended position, the engagement member 322 is received within a corresponding slot 310 formed in the ledge 308, thereby coupling the tray 50 to the seat member 26.

[0254] To separate the tray 50 from the seat member 26, a user applies a force to the connector element 302a, 302b opposing the bias of the biasing mechanism 314 to move the connector element 302a, 302b to the disengaged position. As the connector element 302a, 302b and therefore the latch body 316 and catch 320, move relative to the tray 50 and the seat member 26, the second ramp surface 328 of the engagement member 322 engages the ledge 308 of the seat member 26. As a result of the sloped configuration of the second surface 328, this engagement pushes the engagement member 322 against its bias to the retracted position, thereby allowing the engagement member 322 to move underneath the ledge 308 and away from the seat member 26.

[0255] Another embodiment of a connector element 302a, 302b is illustrated in FIG. 66. As shown, the catch 320 is pivotably mounted to a portion of the latch body 316 receivable underneath the ledge 308 of the seat member 26. Similar to the previous embodiment, the catch 320 may include an engagement member 322 arranged at a distal end thereof including at least one ramped surface. In such embodiments, a biasing mechanism 324, such as a torsion spring for example, may be operable to bias the engagement member 322 to an extended position engageable with a slot 310. In the illustrated, non-limiting embodiment, the engagement member 322 includes a first ramped surface 326 and a second ramped surface 328.

[0256] As previously described, a connector element 302a, 302b may be a biased by a biasing mechanism 314 toward an engaged position. During movement of the connector element 302a, 302b toward the seat member 26, such as driven by the biasing mechanism 314 for example, a first surface 326 of the engagement member 322 will contact the ledge 308. This engagement will cause the engagement member 322 to rotate about its axis in a first direction

against the biasing force of the biasing mechanism 324 to a retracted position. In the retracted position, the engagement member 322 may move beyond the ledge 308 into alignment with a corresponding slot 310. Once the force applied by the ledge 308 to the engagement member 322 is removed, the biasing force of the biasing mechanism 324 will cause the engagement member 322 to rotate to the extended position and into engagement with a slot 310. Similarly, as a user moves a connector element 302a, 302b away from the seat member 26 or against the biasing force of the biasing mechanism 314 to a disengaged position, a second, opposite surface of the engagement member 322 will contact the ledge 308. Engagement between the ledge 308 and the second surface 328 will cause the engagement member 322 to rotate about its axis in a second opposite direction against the biasing force of the biasing mechanism to the retracted position. This rotation to the retracted position allows the engagement member 322 to pass under the ledge 308, thereby separating the connector element 302a, 302b from the seat member 26.

[0257] In the embodiments disclosed in FIGS. 61-66, the engagement member 322 is a passive member driven to a disengaged position by engagement with the ledge 308 of the seat member 26. However, in other embodiments, an engagement member may be actively moved to the disengaged position by a latch body. In the non-limiting embodiments illustrated in FIGS. 67A-68, other embodiments of a connector element 302a, 302b associated with a tray 50 are illustrated. As shown, the connector element 302a, 302b may include a latch body 330 movable, for example translatable, relative to the tray 50. In the illustrated, non-limiting embodiment, the latch body 330 is movable vertically up and down relative to a planar support surface of the tray 50. A biasing member (not shown) may be operable to bias the latch body 330 downwardly to an extended or engaged position. However, in other embodiments, gravity may be sufficient to bias the latch body 330 downwardly to the engaged position.

[0258] The connector element 302a, 302b additionally includes a catch 340 pivotally mounted to the tray 50 and operably coupled to the latch body 330. A distal end of the catch 340 includes an engagement member 342 engageable with a corresponding portion of the seat member 26, such as receivable within a corresponding slot 310 for example, to couple the tray 50 to the seat member 26. Although a hook shaped or curved engagement member 342 is illustrated, it should be appreciated that an engagement member 342 having another suitable configuration is within the scope of the disclosure. As shown, the engagement member 342 may be fixedly mounted to the catch 340, and in some embodiments may be integrally formed with the catch 340. A biasing mechanism (not shown) may be operably coupled to the catch

340 and operable to bias the engagement member 342 of the catch 340 toward an engaged position.

[0259] In the illustrated, non-limiting embodiment of FIGS. 67A-67B, the latch body 330 includes an outwardly extending latch protrusion 332 and the catch 340 includes an outwardly extending catch protrusion 344 engageable with the latch protrusion 332 to transform the catch 340 from an engaged position to a disengaged position. In other embodiments, such as shown in FIG. 68, the catch 340 may include an elongated flange 346 positioned within the path of movement of the latch body 330 between the engaged and disengaged positions. As shown, the elongated flange 346 is arranged vertically above or in overlapping arrangement with the latch body 330. In either embodiment, movement of the latch body 330 to a disengaged position drives a corresponding movement of the catch 340 to a disengaged position.

[0260] Regardless of the configuration of the interface between the latch body 330 and the catch 340, to couple the tray 50 to the seat member 26, a user applies a force to the connector element 302a, 302b, such as to the latch body 330 for example, thereby moving the latch body 330 upward to an engaged position. As the latch body 330 moves upward, the latch body 330 engages and applies a force to a corresponding portion of the catch 340, such as the catch protrusion 344 or the elongated flange 346 for example. The force transmitted to the catch 340 causes the catch 340 to rotate about its axis, to a disengaged position. The engagement between the latch body 330 and the catch 340 may oppose the biasing force acting on the catch. When the catch 340 is in the disengaged position, the engagement member 342 is arranged out of a path movement aligned with the ledge 308 of the seat member 26. Upon positioning of the tray 50 about the seat member 26, the latch body 330 is released. As the latch body 330 returns to the engaged position, the force acting on the catch 340 is released and the engagement member 342 of the catch 340 is biased into engagement with the seat member 26. The tray 50 may be decoupled from the seat member 26 by again applying a force to the latch body 330 and by separating the tray 50 from the seat member 26 while the latch body 330, and therefore the catch 340, is in the disengaged position.

[0261] In embodiments such as those illustrated in FIGS. 99A-109C, a tray assembly 600 may include a tray 602 mountable to a portion of the child seat 20, such that the tray 602 is positionable independently of the recline of the seat member 26. For example, the tray 602 may remain substantially horizontal when the seat member 26 is reclined. In each of the illustrated, non-limiting embodiments, the tray 602 has a generally planar upper support surface 604 configured to support one or more items, such as food for example. When attached to the

child seat 20, the tray 602 may be arranged at a location that is easily accessible by an occupant of the seat member 26. In each of the illustrated, non-limiting embodiments of a tray 602 positionable independently of the recline of a seat member 26, the tray 602 is mounted adjacent to an exterior surface of the seat assembly 22 at a position that does not interfere with access to or egress from the interior 34 of the seat member 26. Accordingly, such a tray 602 may be considered a “side” tray rather than a front tray positionable between the sidewalls 30 of the seat member 26, such as tray 50 for example. However, it should be understood that a front tray as previously described herein may be adapted to be adjustable relative to the seat member 26 to control the position of such a tray independently from the recline of the seat member 26.

[0262] Each embodiment of a tray assembly 600 illustrated and described herein includes a mounting assembly 606 permanently or removably attachable to a portion of the child seat 20. The mounting assembly 606 may be connectable to a surface of the seat member 26, such as the front or a top surface of one or more of the sidewalls 30, a leg 24a-d, the tray horn 54, the armbar, combinations thereof, or other portions of the child seat 20. In some embodiments, the tray assembly 600 is connectable to the child seat 20 regardless of whether the tray horn 54 or armbar is present.

[0263] In the non-limiting embodiment of FIGS. 99A-101, the mounting assembly 606 is positionable in overlapping arrangement with an upper surface 31 of one of the sidewalls 30 of the seat member 26. In embodiments where the seat member 26 includes an armbar or a tray horn 54, the mounting assembly 606 may be mountable in overlapping arrangement with at least a portion of the armbar or tray horn 54 disposed at the sidewall 30. As shown, the mounting assembly 606 may include a generally U or C-shaped channel member 608 having a hollow interior 610 complementary to the contour of the upper surface 31 of a sidewall 30. The mounting assembly 606 may be assembled to the child seat 20 by pressing the channel member 608 downwardly over an armrest or the upper surface 31 of an upright sidewall 30. In some embodiments, sliding the mounting assembly 606 forward once positioned about the upper surface 31 of the sidewall 30 will lock the mounting assembly 606 into position about the child seat 20.

[0264] In the illustrated, non-limiting embodiment, the tray 602 is rotatably coupled to the mounting assembly, such as to a surface of the channel member 608 arranged adjacent to the exterior surface of the upright sidewall 30. Such a configuration allows the tray 602 to pivot about the axis relative to the mounting assembly 606 and the child seat 20. The tray 602 may be pivotable about an axis extending generally horizontally, such as laterally across the child seat 20 for example, such that the tray 602 is movable similarly to the rotational direction of

recline of the seat member 26. When the child seat 20 is reclined, the tray 602 can be rotated about its axis to a substantially horizontal position (see FIG. 99B).

[0265] Further, a lock assembly 612 may be operably coupled to the tray 602 to lock the tray 602 in a desired position relative to the mounting assembly 606. The lock assembly 612 may include a button (or other actuator) 614, a biasing mechanism 616 such as a compression spring, and a locking gear 618 configured to intermesh with a complementary portion 619 of the mounting assembly 606. The biasing mechanism 616 may bias the locking gear 618 into engagement with the corresponding portion 619 of the mounting assembly 606. Application of a force to the actuator 614 may oppose the biasing force of the biasing mechanism 616 and cause the locking gear 618 to disengage from the corresponding portion 619 of the mounting assembly 606. In this actuated state, the tray 602 may be pivoted about its axis to a desired position. Upon release of the actuator 614, the locking gear 618 is biased back into engagement with the corresponding portion 619 of the mounting assembly 606, thereby locking the tray 602 against rotation about its axis.

[0266] The lock assembly 612 allows the tray 602 to be rotated and locked in various positions relative to the mounting assembly 606. In an embodiment, the lock assembly 612 provides a number of discrete locked positions, each of which corresponds to a recline position of the seat member 26. For example, the tray 602 may be configured to rotate 25° in total about the axis, and each of four discrete locked positions is adjusted by an increment of 8.3° which corresponds to an 8.3° adjustment angle of each of the four (4) recline positions of the seat member 26. However, it should be understood that the total rotation of the tray 602 and the distance between discrete locked positions described herein is intended as an example only and that various other angles and discrete positions are contemplated herein.

[0267] With reference to FIGS. 102A-104, another embodiment of a tray assembly 600 mountable to a seat member 26 of the child seat 20 is illustrated. In the illustrated, non-limiting embodiment, the mounting assembly 606 associated with the tray 602 may be operable to form a discrete mechanism interlock between the tray 602 and a sidewall 30 of the child seat. As shown in FIG. 104, the mounting assembly 606 includes a plurality of engagement features 620a, 620b arranged at a surface 622 of the tray 602 configured to abut or face a surface of the seat member 26. The engagement features 620a, 620b are sized for receipt within complementary receiving features 626 formed in the seat member 26 although other interfitting features are contemplated. In an embodiment, as shown in FIG. 104, the engagement features 620a, 620b are provided at a plurality of different angular orientations. In this manner, even if the one or more receiving features 626 move with the seat member 26 during recline, the tray

602 can be positioned at various angles relative to the seat member 26, including a substantially horizontal configuration, by mounting the tray 602 with the appropriate engagement features.

[0268] In the illustrated, non-limiting embodiment, the engagement features include a first pair of engagement features 620a having a first angular orientation and a second pair of engagement features 620b having a second angular orientation. For example, the first pair of engagement features 620a may be oriented for use when the seat member 26 is upright, and the second pair of engagement features 620b may be oriented for use when the seat member 26 is reclined. It will be appreciated that each angular orientation may include a single engagement feature, or alternatively more than two engagement features. Further, engagement features arranged at any suitable number of different angular orientations are contemplated herein. For example, in embodiments where the seat member 26 is positionable at a specific number of discrete recline positions, at least one engagement feature may be provided for a corresponding number of angular orientations. A mounting assembly 606 having such a configuration would include an engagement feature having a specific angular orientation associated with each respective recline position of the seat member 26.

[0269] As shown, the engagement features 620a, 620b may be ribs having a J-shaped configuration and the receiving features may be recesses. The ribs 620a, 620b may be inserted into the recesses 626 and may abut a bottom surface of a recesses 626 to support the tray 602 in a cantilevered configuration. In an embodiment, the recesses 626 are the same recesses arranged at an exterior of a sidewall 30 and engageable by a connector member, such as connector element 302a, 302b for example, of a tray arranged at a front of the seat member 26. Accordingly, in some embodiments, both a front tray and a side tray are interchangeably mountable to the child seat 20 using the same receiving feature 626.

[0270] Although the tray 602 in FIGS. 102A-104 is illustrated as having engagement features 620a, 620b at a plurality of different angular orientations, in other embodiments, such as shown in FIGS. 105A-106B, the tray 602 may have one or more engagement features 620 at only a single angular orientation. In the illustrated, non-limiting embodiment, the engagement features 620 are oriented for use when the seat member 26 is upright. In such embodiments, the tray 602 is not adjustable positionable independently from the recline of the seat member 26. However, in embodiments where the seat member 26 includes a plurality of receiving features 626 such as recesses, the tray 602 may be selectively and adjustably positioned front-to-back relative to the child seat 20.

[0271] With reference now to FIGS. 107A-108, a tray assembly 600 mountable to the seat base 40 of the seat assembly 22 is illustrated. Because the seat member 26 is movable

relative to the seat base 40 between the various recline positions, the tray 602 maintains a constant position regardless of the recline position of the seat member 26. In the illustrated, non-limiting embodiment, the mounting assembly 606 of the tray 602 includes a support member 630 connectable to the seat base 40. Although the support member 630 is illustrated as extending from an underside of the tray 602, it should be appreciated that a support member 630 mounted to another location about the tray 602 is also within the scope of the disclosure. As shown, a distal end 632 of the support member 630 may be receivable within a cavity 634 formed in the seat base 40. As shown, an opening 636 or other feature formed in the support member 630 may engage a corresponding boss or complementary feature (not shown) within the cavity 634 to rigidly couple the tray 602 to the seat base 40. The connection between the support member 630 and the seat base 40 is intended as an example only and any suitable interface operable to couple a support member 630 and a seat base 40 is contemplated herein.

[0272] In yet another embodiment, the tray 602 may be mounted to one or more legs 24a-24d of the child seat 20 via the mounting assembly 606. In some embodiments, such as shown in FIGS. 109A-109C, the mounting assembly 606 includes a clamp or releasable clip 640, for example a resilient C-shaped clip. The mounting assembly 606 may further include an arm 642 extending between the clip 640 and the tray. The length of the arm 642 may be selected to position the tray 602 at a usable height. In an embodiment, the arm 642 has a fixed length, however, in other embodiments, the length of the arm 642 may be adjustable. In the illustrated, non-limiting embodiment, the clip 640 is illustrated as engaging a leg 24a-24d such that the tray 602 is arranged at or proximate to a corner of the seat member 26. However, in other embodiments, the mounting assembly 606 may be oriented to position the tray 602 at another location, such as adjacent to an exterior surface of an upright sidewall 30 for example, of the seat member 26. It should be appreciated that a tray assembly 600 described in each of the embodiments of FIGS. 99A-109C, may be mounted at either the left side or the right side of the child seat 20. Further, a first tray assembly 600 may be mounted at a first location about the child seat 20 and a second tray assembly may be mounted at a second location about the child seat 20.

[0273] With continued reference to FIG. 1, the seat assembly 22 is supported by at least one leg 24, and in some embodiments, a plurality of legs 24 spaced apart from one another. In the illustrated, non-limiting embodiment, a leg 24 is arranged generally adjacent to each corner of the seat assembly 22. Accordingly, as shown, the child seat 20 may include a first, front right leg 24a, a second, front left leg 24b, a third, rear right leg 24c, and a fourth, rear left leg 24d. It should be appreciated that embodiments including a different number of legs, such as a single

leg, two legs, or three legs for example are also within the scope of the disclosure. Each of the plurality of legs 24 may be substantially identical. However, in other embodiments, a configuration of the legs 24 may vary. For example, the rear legs 24c, 24d may have a first configuration and the front legs 24a, 24b may have a second configuration, different from the first configuration. Although the overall cross-sectional shape and size of the front and rear legs 24a, 24b, 24c, 24d appears identical, in some embodiments, the axial length of the rear legs 24c, 24d may be greater than the axial length of the front legs 24a, 24b.

[0274] A first end 60 of each of the front legs 24a, 24b and the rear legs 24c, 24d is configured to contact a support surface, such as a floor for example, to support the child seat 20 in an upright configuration. As shown, a second, opposite end 62 of each of the legs 24a, 24b, 24c, 24d is positioned adjacent to a corresponding portion of the seat assembly 22. At least one, and in some embodiments, each of the legs 24a-24d may have a generally linear configuration between the first end positionable on a support surface and the second end 62 connectable to the seat assembly 22. However, in other embodiments one or more of the legs 24a-24d may have a non-linear configuration.

[0275] In an embodiment, as shown in FIG. 11, a seat foot 61 is positionable at the first end 60 of one or more of the legs 24a-24d. The seat foot 61 may include a pad 63 and a connector 65 operable to couple the pad 63 to a respective leg 24a-24d. As shown, when the seat foot 61 is coupled to a leg, the seat foot 61 does not extend beyond an exterior surface of the leg. In an embodiment, the seat foot 61 is collinear with the leg.

[0276] As previously described, one or more of the legs 24a-d may be removably connectable from the seat assembly 22 to transform the child seat between different modes or operation. As shown, the second end 62 of at least one leg 24a-d may be connectable to the seat base 40, such as to the at least one leg mount 42 for example. In the illustrated, non-limiting embodiment, the at least one leg mount 42 protrudes beyond the bottom surface 44 of the seat base 40 in the form of a seat base leg and the second end 62 of a leg 24a-d is positionable in overlapping arrangement with the seat base leg along an axis. The second end 62 of the leg 24a-d may be receivable within a hollow interior of the seat base leg, or alternatively, a portion of the leg 24a-d may be hollow such that the seat base leg is receivable within the interior of the leg.

[0277] A child seat as described herein may be transformable between a first, high chair mode, and a second booster mode. In the first mode, the legs 24a-d are attached to the seat base 40 such that the child seat 20 is operable as a standalone high chair and the seat member 26 is arranged at approximately table height from a support surface. As used herein, the term “table

height” is intended to represent embodiments where a portion of the seat assembly, such as an upper end of the sidewall 30 that forms an armrest for example, is arranged between about 27.5 inches to about 30 inches from the support surface. The child seat 20 is arranged in the second mode when the legs 24a-24d are disconnected from the child seat. In the second mode, the child seat 20 may be configured as a booster seat. For example, a portion of the seat base 40, such as seat base legs formed by the at least one leg mount 42, may be positionable in contact with an upper surface of another seat, such as an adult seat for example, to position the seat assembly 22 at approximately table height.

[0278] Alternatively, or in addition, one or more of the legs 24a-d of the child seat 20 may be formed from a leg assembly having multiple components or parts that may be selectively included or omitted to provide various modes disclosed herein. As will be described, in embodiments where a leg 24a-24d is an assembly formed from multiple pieces, the child seat 20 may be capable of transforming to additional modes that are not otherwise achievable when the legs 24a-24d are formed from a single body. In an embodiment, each of the legs 24a-d is a leg assembly comprising an upper leg section 70 and a lower leg section 72. Further, in some embodiments, such as shown in FIG. 8A, a leg 24 may additionally include an intermediate leg or leg extension section 74 positionable between the upper leg section 70 and the lower leg section 72. The interface between adjacent leg sections, such as between the upper and lower leg sections 70, 72 for example, may but need not include a washer or leg connector 76 separating adjacent leg sections. It should be appreciated that embodiments where some of the legs 24a-d are a leg assembly including multiple pieces and other(s) of the legs 24a-d are a unitary leg are also within the scope of the disclosure. Further, it should be appreciated that in embodiments where multiple legs 24a-d are formed from a leg assembly, the components of each leg 24 may not be the same. For example, the front legs 24a-b may comprise an upper leg section 70 and a lower leg section 72 while the rear legs 24c-d may substitute a relatively longer part for the upper and/or lower leg section.

[0279] In embodiments where one or more of the legs 24 is formed via an assembly, it should be appreciated that one or more sections of a leg 24 may be connected to the seat assembly 22. For example, only the upper leg section 70 may be connected to the seat assembly 22, only the lower leg section 72 may be connected to the seat assembly 22, only the upper leg section 70 and the intermediate leg section 74 in combination may be connected to the seat assembly 22, only the lower leg section 72 and the intermediate leg section 74 in combination may be connected to the seat assembly 22, both the upper and lower leg sections 70, 72 in combination may be connected to the seat assembly 22, or the upper leg section 70, lower leg

section 72, and intermediate leg section 74 in combination may be connected to the seat assembly 22.

[0280] The child seat 20 is transformable between a plurality of modes based on the one or more sections of the legs 24a-d connected to the seat assembly 22. For example, the child seat 20 may be transformable between a first high chair mode (FIGS. 1A-2C), a second booster mode (FIGS. 3A-5), and a third youth chair mode (6A-7C). In the first mode, both the upper leg section 70 and lower leg section (72) may be attached to the seat assembly 22 to position the seat assembly at table height. In the second booster mode, the legs 24a-24d, in their entirety, may be omitted. In the third or youth chair mode, only a portion of a leg is connected to the seat assembly 22. For example, the lower leg section 72 may be attached to the seat assembly 22 while the upper leg section 70 and/or the leg extension section 74 are separated therefrom. Alternatively, only the upper leg section 70 may be attached to the seat assembly 22 while the lower leg section 72 and/or the leg extension section 74 are disconnected therefrom. In some embodiments, the leg extension section 74 is connected to the seat assembly 22 in combination with either the upper leg section 70 or the lower leg section during operation in the third mode. When configured as a youth chair, the seat member 26, such as at the end of the sidewall for example, is arranged between about 10 inches and about 25 inches from a support surface.

[0281] The upper and lower leg sections 70, 72 may have different vertical heights, such that two different modes may be achieved by coupling the upper leg section 70 and the lower leg section 72 to the seat assembly 22, respectively. For example, a seat assembly 22 having only the upper leg sections 70 coupled thereto may be suitable as a toddler chair, whereas the seat assembly 22 having only the lower leg sections 72 coupled thereto may be suitable as a youth chair for kids larger than a toddler. In an embodiment, a seat assembly 22 having only the upper leg sections 70 coupled thereto may locate the seat portion 28 of the seat member 26 between about 10 and about 16 inches from a support surface and a seat assembly 22 having the lower leg sections 70 coupled thereto may locate the seat portion 28 of the seat member 26 between about 16 and about 25 inches from the support surface.

[0282] When the child seat 20 is in the third, youth mode, a portion of the child seat 20 may be used to form a complementary play table separate from the child seat 20, such as the complementary play table 700 shown in FIGS. 110-112. In the exemplary embodiment of FIGS. 110-112, a first leg section, such as an upper leg section 70a-70d of each leg 24 is connected to the seat assembly 22. The seat back extension member 38 may but need not be coupled to the seat assembly 22. The play table 700 may include a tray, such as tray 50 for

example, and one or more second leg sections of a leg assembly 24 coupled thereto to support the tray 50 on a support surface. In the illustrated, non-limiting embodiment, the second leg sections are lower leg sections 72a-72d.

[0283] As shown, one or more fasteners 702 or connection mechanisms may be coupled to or integrated into the tray 50, such as at an underside 704 of the tray 50 for example. The fasteners 702 may be complementary to at least a portion of the connection mechanisms 80 associated with a respective leg section 72a-72d of a leg assembly 24a-24d. In some embodiments, the fasteners 702 may be the same as those embedded within the seat base 40 of the seat assembly 22 and configured to receive and couple the legs 24a-24d to the seat base 40 (see FIGS. 114). For example, the fasteners 702 may have an upper connector 710 in the form of a threaded hole configured to receive a lower connector of a connection mechanism 80, such as a threaded bolt or screw for example. Accordingly, a portion of the leg 24a-24d, such as the lower leg section for example, may be threadably connected to the fastener 702 of the tray 50.

[0284] In an embodiment, the tray 50 includes at least one, and in some embodiments a plurality of sockets 712. A fastener 702 may be receivable within each of the plurality of sockets 712, such as at a base of the socket 712 against a surface of the tray 50 for example. When a leg 24 is connected to a fastener, in some embodiments, a portion of the leg 24 is also received within the socket 712. One or more bolts, screws, or other connection devices (not shown) may be used to mount the fastener 702 within a respective socket 712. In an embodiment, a body of the fastener 702 has at least one alignment slot 714 formed therein. A protrusion 716 extending inwardly from a sidewall 718 of the socket 712 may be receivable within a corresponding alignment slot 714 to properly position or align the fastener 702 within the tray 50.

[0285] In some embodiments, the child seat 20 may additionally be transformable to a fourth, counter height mode. In an embodiment, a leg 24 includes an upper leg section 70, a lower leg section, and a leg extension section 74 when in the counter height mode such that a portion of the seat assembly 22 is generally arranged at a counter height. As used herein, the term “counter height” is intended to represent embodiments where a portion of the seat assembly 22, such as an upper end of the sidewall 30 that forms an armrest for example, is at least about 30 inches from a support surface. In some embodiments, in the counter height mode, the upper end of the sidewall 30 that forms an armrest is at least about 31 inches from the support surface, about 32 inches from the support surface, about 33 inches from the support surface, about 34 inches from the support surface, about 35 inches from the support surface, and in some embodiments about 36 from the support surface. For example, the upper end of

the sidewall may be located between about 30 inches and about 36 inches from the support surface, and in some embodiments, between about 31 inches and about 36 inches, between about 32 inches and about 36 inches, between about 33 inches and about 36 inches, between about 34 inches and about 36 inches, between about 35 inches and about 36 inches, between about 31 inches and about 35 inches, between about 32 inches and about 35 inches, between about 33 inches and about 35 inches, between about 34 inches and about 35 inches, between about 31 inches and about 34 inches, between about 32 inches and about 34 inches, between about 33 inches and about 34 inches, between about 31 inches and about 33 inches, between about 32 inches and about 33 inches, and between about 31 inches and about 32 inches.

[0286] As illustrated in FIG. 9, it should be appreciated that when the child seat 20 is in the counter height mode, the armrests of the seat assembly 22, such as formed by the upper ends of the sidewalls 30, are a greater distance (higher) from a support surface than when the child seat is in the first mode and at a table height. It will be appreciated that the seat assembly 22 and the legs 24 of the child seat 20 may be packaged and sold as a kit that may be configurable by the user. The various leg sections of a leg may be readily disassembled and reconfigured by a user to transform the child seat into any one of the different modes.

[0287] As shown in FIG. 1, each of the plurality of legs 24a-24d may extend from the seat base 40 at a substantially identical angle. However, in other embodiments, such as shown in FIGS. 55 the angle at which one or more of the legs extends from the seat base 40 (relative to a vertical plane) may be different than the angle at which another of the legs extends from the seat base 40. For example, the angle of one or more of the rear legs may be greater than the angle of one or more of the front legs. However, embodiments where the angle of one or more of the front legs is greater than the angle of one or more of the rear legs is also within the scope of the disclosure. In an embodiments, the front legs 24a-24b extend forward from the seat base 40 at an angle relative to a vertical plane between about 15 degrees and about 25 degrees, and more specifically, between about 18 degrees and about 22 degrees, such as about 20 degrees for example. Similarly, the rear legs 24c-24d may extend rearward from the seat base 40 at an angle relative to the vertical plane between about 20 degrees and about 30 degrees, and more specifically, between about 22 degrees and about 27 degrees, such as about 25 degrees for example. In embodiments where the forward angle of the front legs 24a, 24b is different than the rearward angle of the rear legs 24c, 24d, the lateral angles of the front legs 24a, 24b and the rear legs 24c, 24d relative to a vertical plane may equal or may also vary.

[0288] As previously noted, the first end 60 of each leg 24a-24d is configured to contact a support surface. With reference to FIGS. 2A, 6A, 8A, a footprint area of the child seat 20 is

an area having a geometric shape or linear distance defined by the interface points between the distal first ends 60 of the plurality of legs 24 and the support surface. In some embodiments, such as where the legs 24a-24d have a generally linear configuration, the footprint area is the maximum area defined between the plurality of legs 24a-24d. In the illustrated, non-limiting embodiment of the child seat 20 including four legs, the footprint area has a geometric shape that is generally rectangular, and in some embodiments square. However, it should be appreciated that a footprint area having another geometric shape is also within the scope of the disclosure. For example, in other embodiments, such as where the child seat 20 includes three legs 24 for example, the footprint area may be triangular. Similarly, in embodiments where the child seat 20 has only two legs, the footprint area may be defined by the linear distance between the two points of interface of the first end 60 of each leg 24 and the support surface. It should be appreciated that the length of each of the plurality of legs 24, defined between the first end 60 and second end 62 thereof, may be the same, or alternatively, may be different. In embodiments where the lengths are different, the seat base 40 may be oriented at a non-parallel angle relative to the support surface.

[0289] Because at least one of the legs 24a-24d is coupled to the seat assembly 22 at a non-vertical angle, the footprint area will vary as the length of the plurality of legs 24a-24d changes, such as by adding or removing leg segments therefrom. In embodiments where one or more of the legs 24a-24d extends outwardly from the seat assembly 22 at a non-vertical angle, the footprint area will increase as the length of the legs 24a-24d increases. The length of the legs 24a-24d increases from a mode in which the child seat 20 is configured as a high chair (FIG. 2A), such as where the legs 24 include only an upper leg section 70 and lower leg section 72, and another mode in which the child seat 20 is configured as a counter height seat (FIG. 8A), such as where the legs 24 include an upper leg section 70, a lower leg section 72, and a leg extension section 74. Accordingly, the footprint area when the child seat 20 is configured as a counter height seat is greater than the footprint area of the child seat 20 when configured as a high chair. Similarly, a child seat 20 configured as a youth seat is illustrated in FIG. 6A. As shown, the legs 24a-24d include only an upper leg section 70. Therefore, the footprint area when the child seat 20 is configured as a high chair seat is greater than the footprint area of the child seat 20 when configured as a youth chair.

[0290] In embodiments where a leg 24 includes a plurality of constituent pieces or sections, the leg additionally includes a connection mechanism 80 between constituent parts, e.g., between the upper leg section 70 and the lower leg section 72, between the upper leg section 70 and a leg mount 42, between the upper leg section 70 and a leg extension section

74, or between the leg extension section 74 and the lower leg section 72. In an embodiment, two or more connection mechanisms 80 may be duplicated or substantially the same, allowing for interchangeability along with ease of manufacture and assembly.

[0291] With reference to FIG. 10, an example of a connection mechanism 80, such as located between the leg extension section 74 and the lower leg section 72 is illustrated. As shown, the connection mechanism 80 may include a lower connector 82 on the leg extension section 74 and an upper connector (not shown) on the lower leg section 72. The lower connector 82 may be a threaded part affixed to the leg extension section 74, and the upper connector may be a threaded receiver inside the lower leg section 72. In some embodiments, the lower connector is metallic threaded receiver embedded in the material of the lower leg section 72. In other embodiments, the illustrated threaded connections may be replaced with various other removable mechanical connections (e.g., quick-connect parts, spring-loaded pin, threading on the legs themselves, or the like.)

[0292] Each leg 24 or a section thereof is connectable to a portion of the seat assembly 22, such as to a fastener 83 (see FIG. of 114) a leg mount 42 for example, via a leg attachment 84. The leg attachment 84 may have any suitable configuration. With reference to FIGS. 12A-17B, an example of a leg attachment 84 is illustrated. It should be appreciated that the leg attachment 84 may be substantially identical to or may have a different configuration than a connection mechanism 80. As shown, the leg attachment 84 includes a post 86 and a head 88 arranged at a first end 90 of the post 86, the head protruding radially outwardly beyond the post 86. The post 86 may be integrally formed with the head 88, may be permanently attached to the head, such as welded thereto, or may be removably coupled thereto, such as via a plurality of threads (FIGS. 14A-14C) for example. It should be appreciated that during use of the leg attachment 84, the post 86 is not rotatable relative to the head 88.

[0293] The head 88 may include various features to improve retention, assembly, and the like with either the seat base 40 or a portion of a leg 24. The post 86 may be threaded for connection with a complementary connector formed in one or more of the portions of the leg 24, or an opening formed in the fastener 83. In an embodiment, the post 86 is a metal component that is injection-molded with the seat base 40. However, embodiments where a leg attachment 84 is alternatively, or additionally injection-molded with a section of the leg 24 are also contemplated herein. As shown in FIGS. 18-20B, in an embodiment, the post 86 may be arranged at a central portion of the leg mount 42, such as within the opening 43 of the leg mount 42. The leg 24, or a section thereof, may have an upper connector 92 (see FIG. 20B), such as a threaded component, complementary to the post 86 to allow engagement between the

post and the connector. Although the leg attachment 84 is illustrated and described herein as extending from the seat base 40, embodiments where the leg attachment 84 is affixed to a leg or section thereof such that the post 86 is receivable within the seat base 40 are also contemplated herein.

[0294] With reference now to FIG. 21, in another embodiment, the leg attachment 84 is a quick-connect coupling mechanism that does not require the use of any additional or external tools, such as a screwdriver for example. In the illustrated, non-limiting embodiment, the seat base 40 or a leg mount 42 thereof may include an engagement member 94 movably mounted thereto. Although the engagement member 94 is illustrated as being generally circular in shape, it should be appreciated that any suitable shape is contemplated herein. The engagement member 94 may be movable between an extended position and a retracted position. In the extended position, the engagement member 94 protrudes beyond an exterior surface of the leg mount 42 as shown, and in the retracted position, the engagement member 94 is generally received within the leg mount 42. A biasing mechanism (not shown), such as a coil or torsion spring for example, may be operably coupled to the engagement member 94 and configured to exert a biasing force on the engagement member 94 to maintain the engagement member 94 in the extended position.

[0295] A through hole or opening 96 (see FIG. 32A) may be formed in a portion of the leg 24, such as a section of the leg 24 configured to overlap or engage the leg mount 42. The through hole 96 is configured to receive at least a portion of the engagement member 94 therein to couple or lock the leg 24 in position relative to the leg mount 42. In an embodiment, the size and shape of the through hole 96 may be complementary, and in some embodiments substantially identical, to the size and shape of the engagement member 94.

[0296] To decouple a leg 24 from a leg mount 42 such as during transformation of the child seat from the first mode to another mode, a user applies a force, represented by arrow F1, to the engagement member 94. The force F1 applied by the user opposes the biasing force of the biasing member, thereby causing the engagement member 94 to move or translate inwardly toward the retracted position. With the engagement member 94 in the retracted position, the leg 24 is translatable linearly relative to the leg mount 42, such as away from the seat base 40. After the through hole 96 of the leg 24 has been moved out of alignment with the engagement member 94, the force F1 is removed from the engagement member 94. As a result, the biasing force of the biasing member will bias the engagement member 94 from the retracted position to the extended position.

[0297] Similarly, to couple a leg 24 or portion thereof to the seat assembly 22, a force F1 is applied to the engagement member 94 to transform the engagement member to the retracted position. While retracted, the leg 24 is slid relative to the leg mount 42. It should be appreciated that the presence of the leg 24 is sufficient to retain the engagement member 94 in the retracted position once the force applied by the user is removed. Once the through hole 96 of the leg 24 is aligned with the engagement member 94, the biasing force of the of the biasing member will automatically transition the engagement member 94 back to the extended position such that the engagement member 94 is arranged within, and in some embodiments protrudes beyond, the through hole 96.

[0298] Although the engagement member 94 is illustrated and described herein as being located at the leg mount 42, it should be understood that embodiments where the engagement member 94 is arranged at another location, such as the bottom surface 44 of the seat base 40 for example, are also within the scope of the disclosure. Further, it should be appreciated that the leg attachments 84 illustrated and described herein are intended as an example only and that any suitable leg attachment mechanism that allows a leg 24 of the child seat 20 or a section thereof to be easily coupled to and decoupled from the seat assembly 22 or from another section of the leg 24 without the use of an external tool is within the scope of the disclosure.

[0299] In the non-limiting embodiment illustrated in FIGS. 1A-2C and 8A-8D, an example of a leg assembly having various leg sections 70, 72, 74 is shown. Another embodiment of a leg assembly 24a-24d is illustrated in FIGS. 69-74. The leg sections 70, 72, 74 of the embodiment illustrated in FIGS. 1A-2C and 8A-8D may be formed as solid bodies or at least partially solid bodies, such as from a wood material for example. However, in the illustrated, non-limiting embodiment of FIGS. 69-74, one or more sections of a leg assembly may be formed as hollow bodies. In the illustrated, non-limiting embodiment, a leg assembly 24a-24d may similarly include an upper leg section 70, a lower leg section 72, and in some embodiments, and intermediate leg section 74.

[0300] With reference to FIGS. 69-74, in an embodiment, each of the upper leg section 70, lower leg section 72, and intermediate leg section 74 may be formed with at least one substantially open upper end 400, 402, 404 and a substantially open lower end 406, 408, 410. However, in some embodiment, a seat foot 412 is connectable to a lower end of one or more of the leg sections 70, 72, 74. However, embodiments where a seat foot 412 is integrally formed with one or more of the leg sections, such as with the lower leg section 72 for example, are also contemplated herein.

[0301] A connection mechanism 420 is positionable between adjacent portions of a leg assembly 24a-24d to couple the respective leg portions together. In an embodiment, two or more substantially identical connection mechanisms may be used in a leg assembly, allowing for interchangeability of the leg sections within the assembly and ease of manufacture and assembly. The connection mechanism 420 shown in FIGS. 69-74 includes one or more joining posts operable to form a quick connect interface with one or more of the leg sections 70, 72, 74. In an embodiment, the joining post 420 is operable to form a snap fit connection with at least one leg section 70, 72, 74.

[0302] Unlike the connection mechanism 80 previously disclosed herein with reference to FIG. 10, a joining post 420 such as that shown in FIGS. 69A-71B need not be integrally formed with a specific leg section. Rather, the joining post 420 may be removably couplable to any leg section 70, 72, 74 of a leg assembly 24a-24d based on the mode of operation of the child seat 20. For example, in embodiments including both the upper leg section 70 and the lower leg section 72, as shown in FIGS. 71A-71B, the joining post 420 may be operable to couple the upper and lower leg section 70, 72 together. In embodiments including each of an upper leg section 70, a lower leg section 72, and an intermediate leg section 74, a leg assembly 24a-24d may include a plurality of joining posts 420. As shown in FIGS. 72A-72B, the joining post may include a first joining post 420a arranged between the upper leg section 70 and the intermediate leg section 74, and a second joining post 420b arranged between the intermediate leg section 74 and the lower leg section 72. In embodiments where a leg assembly 24a-24d includes only a single leg section, such as the upper leg section 70 as shown in FIGS. 69A-69B, the lone joining post 420 may be connected to the distal end thereof to form a foot of the leg assembly 24a-24d.

[0303] In the illustrated, non-limiting embodiment, the joining post 420, 420a, 420b includes a first portion 422 and a second portion 424 separated by an annular protrusion or collar 426. The first portion 422 extends from a first end 428 of the joining post 420, 420a, 420b to the protrusion 426, and the second portion 424 extends between the protrusion 426 and the second opposite end 430 of the joining post 420, 420a, 420b. Further, the diameter of both the first portion 422 and the second portion 424 may be equal to or slightly smaller than the inner diameter at an end of a corresponding section 70, 72, 74 of the leg assembly 24. In an embodiment, the second end 430 of the joining post 420, 420a, 420b has a generally rounded or convex contour such that the second end 430 forms a foot positionable in contact with a support surface of the child seat 20.

[0304] The leg sections 70, 72, 74 include one or more features configured to cooperate with the joining post 420, 420a, 420b to couple the leg section to the joining post 420, 420a, 420b. A lower leg section 72 and/or the intermediate leg section 74, may include a contoured key feature or recess 440 formed in the sidewall of the leg section 72, 74 such as near the upper end 402, 404 thereof. In the non-limiting embodiment, the joining post 420, 420a, 420b includes an outwardly extending boss 442, such as arranged at the annular protrusion 426 for example. The boss 442 is receivable within the corresponding key feature 440. In an embodiment, a similar key feature 444 may be formed in the sidewall of the upper leg section 70 and/or the intermediate leg section 74, such as near a lower end 406, 410 thereof. In embodiments where a joining post 420, 420a, 420b is coupled to two leg sections, the boss 442 may be arranged within the key feature 440, 444 of both the upper and lower leg sections to rotationally align the respective leg sections 70, 72, 74.

[0305] One or more of the leg sections 70, 72, 74 may alternatively or additionally include a slot 446 formed in the sidewall, such as near an upper end 400, 402, 404 thereof. In embodiments where a leg section 70, 72, 74 includes both the key feature 440 and the slot 446, the slot 446 may be arranged vertically beneath the key feature 440 (see FIG. 70). The joining posts 420, 420a, 420b may include a latch 448 receivable within the slot 446 to couple the lower leg section 72 or the intermediate leg section 74 to the joining post 420, 420a, 420b. The latch 448 can be flexed or retracted relative to the joining post 420, 420a, 420b, thereby allowing the latch 448 to separate from the slot 446 of an adjacent leg section 72, 74. In an embodiment, the joining post 420, 420a, 420b includes a button operably coupled to the latch 448 to selectively retract or flex the latch 448. In some embodiments, the boss 442 may be configured as the button; however, embodiments having another button accessible at an exterior of the leg assembly 24a-24d by an operator are also contemplated herein.

[0306] A post or top cap 450, separate from the joining post 420, 420a, 420b, may be used to couple a respective leg section 70, 72, 74 to a leg mount 42 of the seat assembly 22. As shown, the top cap 450 may be receivable within an interior of a leg section 70, 72, 74, such as near an upper end 400, 402, 404 thereof. Similar to the joining post 420, 420a, 420b, the top cap 450 may have a resilient latch 452 engageable with a portion of a leg section 70, 72, 74. The latch 452 may be receivable within either the key feature 440 or the slot 446 formed in the lower and intermediate leg sections 72, 74. In an embodiment, the upper leg section 70 similarly has at least one slot 456 formed in its sidewall near an upper end 400 thereof within which the latch 452 is receivable. A button 454 arranged at the top cap 450 may be operable to retract the latch 452, thereby allowing the top cap 450 to be separated from the leg section 70,

72, 74. In an embodiment, the button 454 is configured to extend through another opening 458 formed in the sidewall of the upper leg section 70 or through either the key feature 440 or the slot 446 formed in the lower and intermediate leg sections 72, 74.

[0307] When the upper end 400, 402, 404 of a leg section 70, 72, 74 including the top cap 450 is inserted into a leg mount 42 of the seat assembly 22, the latch 452 is configured to engage a corresponding feature 460, such as a ledge for example (see FIG. 74) formed at an interior surface of the leg mount 42. The leg section 70, 72, 74 will remain firmly secured to the seat assembly 22 until the latch 452 is retracted or moved out of engagement with the ledge 460. Once separated, the leg section 70, 72, 74 can be removed from the leg mount 42. As shown in FIG. 74, the button 454 associated with the latch 452 of the top cap 450 may be exposed even when the leg section 70, 72, 74 is coupled to the seat assembly 22, such as at a location directly beneath the end of a leg mount 42 for example. In an embodiment, the top cap 450 and the joining post 420, 420a, 420b may have substantially similar configurations such that top cap 450 and a joining post 420, 420a, 420b are connectable to any of the leg sections 70, 72, 74 of the leg assembly 24a-24d.

[0308] In embodiments of a leg assembly 24a-24d including a connection mechanism 420, 420a, 420b separable from each of the plurality of leg sections 70, 72, 74, one or more of the leg sections 70, 72, 74, and/or the connection mechanism 420, 420a, 420b may be formed from a metal material. However, in other embodiments, the leg sections 70, 72, 74 and/or connection mechanism 420, 420a, 420b may be formed from another suitable material such as wood for example. It should further be appreciated that other embodiments of a leg assembly described herein, such as the leg assembly having leg sections 70, 72, and 74 connectable via connection mechanisms 80 for example, may be formed from any suitable material including wood or metal.

[0309] With continued reference to FIG. 21 and further reference to FIGS. 22A-22B, at least one mounting strap, piece of webbing, or other tension member 100 may be associated with the seat base 40 to affix the child seat 20 to a seat. In an embodiment, the mounting strap 100 extends through an opening 102 formed in the at least one leg mount 42. Although each of the plurality of leg mounts 42 is illustrated as including a mounting strap 100, it should be appreciated that in some embodiments, only some of the leg mounts 42 have a mounting strap 100 associated therewith. In other embodiments, the one or more mounting straps 100 may extend from a cavity or compartment formed in the seat assembly 22, such as in the seat base 40 for example, as will be described in more detail below. The mounting straps 100 may be used to removably couple the child seat 20, when in the second booster mode, to a

corresponding support surface. For example, the one or more mounting straps 100 may wrap about an underside of a seat to couple the child seat 20 to the seat. In an embodiment, the mounting straps 100 are arranged in pairs, with a first mounting strap associated with a first leg, such as front left leg 24a, and a second mounting strap associated with a second leg, such as the front right leg 24c for example. In such embodiments, one of the mounting straps 100 within the pair may have a buckle attached thereto and the other mounting strap 100 within the pair may have a clip connectable to the buckle attached thereto to connect the free ends of the mounting straps 100 to one another.

[0310] The positioning of the mounting strap 100 relative to the seat base 40 may prevent installation of a leg 24 to the seat base 40 when the mounting strap 100 is extended or hanging from the seat base 40, and therefore may prevent improper use of the child seat 20. In an embodiment, the child seat 20 includes a strap storage mechanism 110 for storing one or more mounting straps 100 when not in use (such as in the first, third, or fourth modes.)

[0311] With reference to FIGS. 23A-23C, in an embodiment, the strap storage mechanism 110 may be integrated directly into the seat base 40. As shown, the strap storage mechanism 110 includes at least one seat storage compartment 112 formed in the seat base 40. A lid 114 is movably mounted to the seat base 40 and is operable to selectively seal the seat storage compartment 112, such as when one or more mounting straps 100 are arranged therein. In an embodiment, the seat storage compartment 112 is inaccessible due to a locking mechanism 116 that is enabled or engaged when a leg 24 is connected to the seat base 40. In the illustrated, non-limiting embodiment of FIGS. 23A-24B, the locking mechanism 116 includes a movable locking pin 118. When the locking pin 118 is in an unlocked position (FIG. 23B), the locking pin 118 extends into the opening 43 of a leg mount 42 and does not in any way engage a portion of the lid 114. In the locked position, the locking pin 118 does not extend into the opening 43 of the leg mount 42, but rather, engages a portion of the lid 114 to retain the lid in a closed position relative to the seat storage compartment 112. A biasing mechanism (not shown) may be operably coupled to the locking pin 118 such that the biasing force of the biasing mechanism biases the locking pin 118 to the unlocked position.

[0312] The lid 114 is transformable between an open position and a closed position when the locking pin 118 is in the unlocked position. The locking pin 118 may be movable, for example translatable, from the unlocked position to the locked position in response to connection of a leg 24 to the leg mount 42. For example, the leg 24 is receivable within the opening 43 of the leg mount 42 such that during installation, the leg 24 applies a force F2 to the locking pin 118. The force F2 opposes the biasing force of the biasing mechanism, causing

the locking pin 118 to transform from the unlocked position to the locked position. In an embodiment, the locking pin 118 is only movable to the locked position if the lid 114 is closed relative to the seat storage compartment 112. Further, the lid 114 may only be closed if one or more mounting strap 100 receivable within the seat storage compartment 112 are wholly contained within the storage compartment. If a portion of the mounting strap 100 extends outwardly from the seat storage compartment 112, the lid 114 will engage the mounting strap 100, thereby preventing a corresponding portion of the lid 114 from aligning with the locking pin 118. It should be appreciated that the locking mechanism 116 illustrated and described herein is intended as an example only and that another suitable locking mechanism is within the scope of the disclosure.

[0313] Another example of a locking mechanism 500 operable to selectively lock a lid 114 relative to a seat base 40 to seal a seat storage compartment 112 is illustrated in FIGS. 75-79B. In the illustrated, non-limiting embodiment, the locking mechanism 500 includes a locking pin 502 movable between a locked position (FIGS. 76, 78A) and an unlocked position (FIG. 78B). Similar to the previous embodiment, the locking pin 502 does not extend into the opening 43 of the leg mount 42 when in a locked position and extends into the opening 43 of a leg mount 42 when in an unlocked position. The locking pin 502 is further mounted to a first pin or protrusion 506 extending outwardly from a surface 508 of the lid 114. The first protrusion 506 is arranged within a corresponding slot 510 formed in the seat base 40. As shown, the lid 114 is pivotable about an axis, such as defined by a second protrusion 512 extending from the lid 114 into a corresponding groove (not shown) formed in the seat base 40. The translation of the first protrusion 506 within the slot 510 defines the rotation of the lid 114 about the axis of the second protrusion 512. A biasing mechanism 514 is operably coupled to the locking pin 502 such that the biasing force of the biasing mechanism 514 biases the locking pin 502 toward the unlocked position.

[0314] An actuation mechanism 520 is arranged at the seat base 40 and is operably coupled to the lid 114. In the illustrated, non-limiting embodiment, the actuation mechanism 520 includes an actuator 522, such as a button for example, arranged at a surface of the seat base 40, and an engagement member 524 operably coupled to the actuator 522. A rib 526 may extend from a portion of the lid 114 and the engagement member 524 of the actuation mechanism 520 may cooperate with the rib 526 to oppose the biasing force of the biasing mechanism 514. For example, the engagement member 524 may abut the rib 526 to prevent rotation of the lid 114 toward an open position.

[0315] As previously described, the lid 114 is transformable between a closed position and an open position when the locking pin 502 is in the unlocked position. The locking pin 502 is movable to the unlocked position in response to the operation of the actuator 522. Application of a force to the actuator 522 causes the engagement member 524 to separate from the rib 526. As a result, the biasing force acting on the locking pin 502 will bias the locking pin 502 toward the interior 43 of the leg mount 42, thereby causing the first protrusion 506 of the lid 114 to translate within its slot 510. This translation causes the lid 114 to rotate about the axis of the second protrusion 512.

[0316] The actuator 522 is not capable of opening the lid 114 when a leg 24 is present within a leg mount 42. Although application of a force to the actuator 522 would cause the engagement member 524 to move out of contact with the rib 526, the presence of the leg 24 opposes the biasing force of the biasing mechanism 514. Accordingly, the leg 24 prevents the locking pin 502 from moving, and therefore, prevents the first protrusion 506 from translating within its slot 510 toward the open position.

[0317] In embodiments where at least a portion of leg 24 has a hollow interior 25, the hollow interior may form a leg storage compartment for receiving a mounting strap 100 therein. With reference now to FIG. 25, the mounting strap 100 may be installed into the interior 25 of the leg 24 prior to connecting the leg 24 to the seat base 40. In embodiments where the leg mount 42 is also receivable within the interior 25 of the leg 24, the mounting strap 100 may be disposed vertically beneath the leg mount 42.

[0318] In an embodiment, the child seat 20 includes a footrest 120 connectable to one or more legs 24 at a position vertically offset from the front 36 of the seat member 26. The position of the footrest 120 may be fixed or may be adjustable relative to the seat portion 28 of the seat member 26. In the illustrated, non-limiting embodiment of FIGS., the footrest 120 is positionable at a single location relative to one or more legs 24. However, it should be appreciated that embodiments where the footrest 120 may be fixedly coupled to the legs 24 at two or more or more positions are also contemplated herein. Further, it should be appreciated that in some embodiments, the footrest 120 is removable from the legs 24, and therefore the child seat 20 may be used without the footrest 120 attached thereto.

[0319] In each of the illustrated embodiments, the footrest 120 includes a footrest body 122 having a generally planar upper surface 124 upon which a child may position one or more feet. In the non-limiting embodiment of FIGS. 26-30, the footrest 120 is supported by a cross-brace assembly 130. The cross-brace assembly 130 may be affixed to the child seat 20 by being captured between adjacent sections of a leg, such as between the upper and lower leg sections

70, 72 for example. As shown, the cross-brace assembly 130 may include a front brace 132, side braces 134, 136, and a rear brace 138. However, it should be appreciated that a cross-brace assembly 130 having only one, two, or three of the identified cross-braces are also contemplated herein. As shown, a disk-shaped washer or leg connector, such as leg connector 76 for example, may be arranged at one or more of the interfaces formed between adjacent cross-braces. The leg connector 76 may have an opening formed therein such that at least a portion of the leg 24, such as of a connection mechanism 80 for example, may extend therethrough.

[0320] The cross-brace assembly 130 may be formed as a unitary rigid part. For example, in some embodiments, such as shown in FIGS. 26 and 27, the plurality of braces 132, 134, 136, 138 and the leg connectors 76 are formed from a metal material, and the braces 132, 134, 136, 138 may be permanently affixed, such as via welding or riveting for example, to respective leg connectors 76 arranged at the corners of the cross-brace assembly 130. In other embodiments, such as illustrated in FIG. 80 and 81, the cross-brace assembly may be formed from a mixture of materials. For example, the plurality of braces 132, 134, 136, 138 may be formed from a metal material, such as metal tubing for example; however, the leg connectors 76 may be formed from a different material, such as plastic for example. In such embodiments, the plurality of braces 132, 134, 136, 138 may be removably connectable to the plurality of leg connectors 76 via any suitable mechanism including but not limited to pop rivets, valco snaps, and screws.

[0321] In some embodiments, the child seat 20 may be provided with a kit having multiple cross-brace assemblies of different arrangements. For example, a cross-brace assembly 130 including four braces 132, 134, 136, 138 may be used when the child seat is in the fourth, counter height mode, and a cross-brace assembly 130 having one, two, or three braces, may be used when the child seat is in another mode. In some embodiments, the leg connectors 76 may be omitted or may be separate from the cross-brace assembly 130, in which case the cross-brace assembly 130 may include a ring or other structure to mechanically engage one or more of the legs 24a-d.

[0322] As shown, the footrest 120 may be connected to at least one cross-brace, such as the front cross-brace 132. In an embodiment, the footrest 120 is integrally formed with the front cross-brace 132. In other embodiments, the footrest 120 may be removably couplable to the front cross-brace 132. For example, a bottom of the footrest 126 may include a recess (not shown) and a corresponding portion of a front cross-brace 132 may be receivable within the recess to connect the footrest 120 to the cross-brace assembly 130. Alternatively, or in addition,

a locking mechanism may be used to lock the footrest 120 in place about the cross-brace assembly 130 and prevent rotation of the footrest 120 relative thereto.

[0323] In other embodiments, the footrest 120 is mounted via engagement with the one or more legs 24. With reference to FIG. 1A and FIGS. 31A-32B, in the illustrated, non-limiting embodiment, the body 122 of the footrest 120 includes at least one opening 140 within which a leg 24 is receivable. A footrest engagement member 142, such as a guide rib for example, extends radially inward from an interior surface at the opening 140. An engagement detent 144, such as a groove or recess, complementary in shape to the footrest engagement member 142 may be formed at a surface of the leg 24, adjacent to the footrest engagement member 142. The leg 24 may additionally include one or more holes 146, also referred to herein as a detent stop, formed along the engagement detent 144, such as at an end thereof. When the footrest engagement member 142 is aligned with the engagement detent 144 (FIG. 32A), the body 122 of the footrest 120 is translatable relative to the leg 24. When the engagement detent 144 is aligned or engaged with the detent stop 146, a portion of the footrest engagement member 142 extends or abuts the detent stop 146, thereby locking the footrest 120 in position relative to the leg 24.

[0324] To install the footrest 120, a leg 24 is aligned with each opening 140 formed in the footrest body 122 such that a footrest engagement member 142 of each opening 140 is aligned with a corresponding engagement detent 144. A user then applies a force to the footrest body 122 causing the footrest 120 to manually move relative to the legs 24 until the footrest engagement members 142 contact a respective detent stop 146. In an embodiment, best shown in FIG. 26, the front legs 24a, 24b of the child seat 20 are arranged at a non-parallel angle to one another. As a result, the horizontal clearance defined between the front legs 24a, 24b varies, e.g., gradually reduces, from the support surface towards the seat member 26. Accordingly, as the footrest body 122 translates relative to the legs 24 toward a desired position, the relative orientation of the legs 24 changes. For example, the angle α (see FIGS. 31A, 33A) defined between the legs 24 when originally connected to the footrest, also referred to herein as an angle of insertion, is generally zero. The legs 24 transition from being generally parallel to being arranged at a non-parallel angle to one another. The connection between the footrest 120 and the plurality of legs 24 orients the plurality of legs 24 at a desired angle. In an embodiment, when the footrest body 122 is at a final position, the legs 24 are arranged at a desired angle relative to one another and the second ends 62 thereof are properly positioned or aligned with the leg mounts 42 of the seat base 40 for connection of the legs 24 to the seat base 40.

[0325] With reference now to FIGS. 82-96C, alternatively, or in addition to the footrest 120, the child seat 20 may include a support member assembly 550 positionable underneath the seat assembly 22, such as within the area defined between the plurality of legs 24a-24d. In an embodiment, the support member assembly 550 is a basket assembly having a support member, such as a fabric basket 551 for example, and a frame for mounting the support member or basket 551 to the child seat 20. In some embodiments such as shown in FIGS. 82-85B, the cross-brace assembly 130 functions as the frame operable to support the basket 551. As shown, the basket 551 has one or more sides 552a, 552b, 552c, 552d formed from a fabric material and connected by a central fabric section 554, such as formed from a mesh material for example. In an embodiment, one or more of the sides 552a, 552b, 552c, 552d may include a tunnel or passageway 556 configured to receive a corresponding cross-brace 132, 134, 136, 138 of the cross-brace assembly 130 therein to couple the basket 551 to the cross-brace assembly 130. In an embodiment, the components of the cross-brace assembly 130 may be disconnectable to allow separation of the basket 551 from the cross-brace assembly 130. In such embodiments, the fabric sides 552a-552d of the basket 551 may be sewn such that the tunnels 556 are permanently formed therein.

[0326] Alternatively, as shown in FIGS. 84A and 84B, the basket 551 may include one or more fastening mechanisms 558, such as zippers, snaps, or hook and loop fasteners for example, that can be transformed by an operator to open and close a respective tunnel 556 to selectively couple the basket 551 to a corresponding brace of the cross-brace assembly 130. In embodiments where the tunnels 556 are formed via one or more fastening mechanisms 558, the cross-brace assembly 130 may be a unitary body or may be capable of being disassembled as previously described. It should be understood that a basket 551 as described herein may also be mounted to a cross-brace assembly 130 having a footrest 120 mounted thereto or integrally formed therewith (see FIGS. 85A, 85B).

[0327] With reference now to FIGS. 86-88B, in another embodiment, the basket 551 is couplable to a cross-brace assembly 130 formed at least partially from a plastic material. In such embodiments, a leg connector 76 of the cross-brace assembly 130, such as formed from a plastic material for example, may be insertable into a slot 462 formed in a portion of a leg of the child seat. As shown, the leg may be configured as leg assembly 24a-24d and the slot 462 may be formed in a joining post 420, 420a, 420b operable to connect two adjacent leg sections of the leg assembly 24a-24d, such as an upper leg section 70 and a lower leg section 72 for example. When the joining post 420, 420a, 420b is coupled to a lower leg section 72, see FIGS. 88A and 88B, the distal end of the joining post 420, 420a, 420b is received within the lower

leg section 72. Further, when fully coupled, the lower leg section 72 may be configured to overlap a portion of the leg connector 76, thereby preventing the leg connector 76 from separating from the leg assembly 24a-24d. Only after the lower leg section 72 is separated from the joining post 420, 420a, 420b can the leg connector 76 be removed from the slot 462 formed in the joining post 420, 420a, 420b. Although the joining post 420, 420a, 420b is illustrated and described as being receivable within a lower leg section 72, it should be understood that in some embodiments, the joining post 420, 420a, 420b may alternatively be receivable within an intermediate leg section 74.

[0328] In other embodiments of a support member assembly 550, shown in the FIGS. 89A-95, the frame operable to support the basket 551 is a footrest brace 572 having a unitary body including a plurality of sides 574a, 574b, 574c, 574d arranged in a general ring shape. Although the footrest brace 572 is illustrated as having four sides, it should be appreciated that embodiments including fewer than four sides, such as three sides or even two sides for example, are also within the scope of the disclosure. One of the plurality of sides 574a, 574b, 574c, 574d of the footrest brace 572 may extend outwardly further than the other sides of the footrest brace 572 to form a functional footrest similar to footrest 120. The basket 551 may be positioned centrally between the sides 574a, 574b, 574c, 574d of the footrest brace 574 and is coupled to one or more sides 574a, 574b, 574c, 574d thereof.

[0329] An upper end 578 (see FIGS. 91 and 92) of the basket 551 may be permanently affixed, or alternatively, may be removably coupled to the footrest brace 572, such as to an underside of the footrest brace 572 for example. In an embodiment, the upper end 578 of the basket 551 includes a plastic rod 580. The plastic rod 580 may but need not be integrally formed with the basket 551. As shown, the upper end 578 of the basket 551 may have an opening or tunnel 582 formed therein extending about at least a portion of the periphery of the basket 551, and the plastic rod 580 may be arranged within the tunnel. The plastic rod 580 may be retained in position relative to the footrest brace 572 by one or more retention features 584, such as undercut ledges for example.

[0330] As shown, a cutout 586, such as a U-shaped cutout may be formed at one or locations, such as in one or more corners of the footrest brace 572 for example. In the illustrated, non-limiting embodiment, a retaining lock 588 is arranged within a respective cutout 586 and is operable to engage a leg of the child seat 20 arranged within the cutout 586. Further, the retaining lock 588 may cooperate with the undercut ledges 584 to retain the upper end 578 of the basket 551 in position relative to the footrest brace 572. In FIG. 93B, the retaining lock 588 is shown engaged with a feature of a joining post 420, 420a, 420b of a leg

assembly 24a-24d, such as the boss 442 for example. This engagement restricts movement of the footrest brace 572 and therefore the basket 551 relative to the leg assembly 24a-24d unless an operator intentionally flexes the retaining lock 588 out of engagement with the features 442 of the joining post 420, 420a, 420b.

[0331] In other embodiments, the footrest brace 572 may be adapted for use with a leg assembly, such as leg assembly 24-24d having a plurality of leg sections 70, 72, 74 connectable via a threaded connection mechanism 80. With reference to FIGS. 94-96C, a circular mounting bracket or leg connector 590 may be arranged at each corner of the footrest brace 572 within a cutout 586 previously described. As shown, each mounting bracket 590 has a hole 592 for receiving a connection mechanism 80 therethrough. The mounting brackets 590 may be integrally formed with the footrest brace 572, as shown in FIGS. 94 and 95A-C. However, in other embodiments, the mounting bracket 590 may be detachably connected to the footrest brace 572. In the illustrated, non-limiting embodiment of FIGS. 96A-C, the mounting bracket 590 is illustrated as being removably connectable to the footrest brace 572 via a fastener (not shown), such as a screw for example. It should be understood that other suitable connection mechanisms, including a mechanism connectable via biased engagement similar to that of the retaining lock 588 previously described may also be used.

[0332] In embodiments where the mounting brackets 590 are removable from the footrest brace 572, the mounting brackets 590 may function as adapters based on the respective legs 24a-24d of the child seat 20. For example, the footrest brace 572 may be adapted for use with wooden legs, such as including one or more leg sections 70, 72, 74 of a leg assembly, via inclusion of the mounting brackets 590 or may be adapted for use with one or more at least partially metal legs, such as leg assembly 24a-24d for example, by removing one or more mounting brackets 590 from the footrest brace 572. In such embodiments, the mounting brackets 590 may be connectable in overlapping arrangement with a retaining lock 588.

[0333] With reference now to FIGS. 33A-52B, a first portion of the seat assembly 22 may be movable relative to a second portion of the seat assembly 22. In an embodiment, the seat member 26 is movable relative to the seat base 40 between a first seat member position and a second seat member position. For example, in an embodiment, the seat member 26 is translatable forward (in a direction toward the front legs) and backward (in a direction towards the back legs). Alternatively, or in addition, an angle of incline of at least a portion of the seat member 26 may be adjustable such that the seat member 26 is movable relative to the seat base 40 between an inclined position (first incline position or first seat member position) and a reclined position (second inclined position or second seat member position). It should also be

appreciated that the seat member 26 may be arranged at one or more positions defined between the first and second seat member positions.

[0334] During movement along an incline path, the seat back 32 of the seat member 26 is configured to rotate about an axis that is offset from an intersection between the seat back 32 and the seat portion 28. In the non-limiting embodiment of FIGS. 34A-37B, the seat member 26 in its entirety is movable relative to the seat base 40 to control an incline or recline of the seat member 26. As shown, a recline lock mechanism 150 may be mounted to the seat member 26. In the illustrated, non-limiting embodiment, the recline lock mechanism 150 includes recline cap 152 positionable in overlapping arrangement with a bottom surface of the seat member 26. Accordingly, when the seat member 26 is mounted to the seat base 40, the recline cap 152 is arranged between the seat member 26 and the seat base 40. The recline lock mechanism 150 may additionally include at least one recline pin 154, for example arranged within a cavity formed within the recline cap 152. In the illustrated, non-limiting embodiment, the recline lock mechanism 150 includes a plurality of recline pins, such as a first recline pin 154 and a second recline pin 154 arranged at opposite sides of the recline cap 152, and a biasing mechanism 156, such as a coil spring for example, extending between and operably coupling the first and second recline pins 154.

[0335] The recline pins 154 are transformable in unison between a first, locked position (FIG. 35A) in which the seat member 26 is not movable relative to the seat base 40, and a second, unlocked position (FIG. 35B) in which the seat member 26 is movable relative to the seat base 40 to adjust an incline of the seat member 26. When each of the recline pins 154 is in a locked position, an end 158 of the recline pins 154 extends through an opening 160 formed in the recline cap 152 and is engaged with a corresponding lock opening 162, formed in a portion of the seat base 40. When the recline pins 154 are in the second, unlocked position, the second ends 158 of the recline pins 154 are separated or disengaged from the lock openings 162, allowing the seat member 26 to be inclined or reclined.

[0336] An actuator 164 is operably coupled to the recline lock mechanism 150. The actuator 164 may include a handle 166 arranged at an exterior surface of the seat assembly 22, such as at a surface of seat back 32 for example. In embodiments where the upper surface of the seat back 32 has a curved configuration, such as shown FIGS. 97-98B, the handle 166 may be arranged near the top of the arch or convex curvature. In an embodiment, the handle 166 has a plurality of angled slots 168 (see FIGS. 37A and 37B) formed therein and an engagement pin 170 extending from each recline pin 154 is arranged within a corresponding slot 168 formed in the handle 166. When a force F3 is applied to the handle 166, the handle 166 is configured

to move relative to the seat member 26, such as relative to the seat back 32. As shown in FIGS. 98A and 98B, when actuated, the upper end of the handle 166 may be receivable within a clearance defined between a ledge 253 extending outwardly from an upper surface of the seat back 32 and an exterior surface of the seat back 32.

[0337] When the force F3 is applied to the handle 166, the engagement pins 170 are configured to translate within the slots 168, such as from a first position adjacent to a first end of the slot 168 to a second position adjacent to a second, opposite end of the slot 168. Because of the angled configuration of the slots 168, the recline pins 154 are configured to translate inwardly relative to the openings 160 formed in the recline cap 152 as the engagement pins 170 translate within the slots 168. The force applied to the engagement pins 170 via operation of the handle 166 overcomes the biasing force of the biasing mechanism 156 operably coupled to the recline pins 154. However, upon release of the handle 166, the biasing force of the biasing mechanism will push the recline pins 154 outwardly causing the handle 166 to move relative thereto and return to the unactuated position.

[0338] While the recline pins 154 are held in the unlocked position via application of a force F3 to the handle 166, the seat member 26 is translatable relative to the seat base 40. As best shown in FIG. 34B, the seat base 40 includes a plurality of lock openings 162, each associated with a different incline of the seat member 26. The seat member 26 is therefore movable to a position in which the ends 158 of the recline pins 154 are aligned with and configured to engage respective lock openings 162 of the plurality of lock openings. Once aligned, the handle 166 is released, causing the recline pins 154 to lock into engagement with the respective lock openings 162. It should be appreciated that the recline lock mechanism 150 illustrated and described herein is intended as an example only and that any mechanism suitable to selectively lock and unlock a portion of the seat assembly 22 to adjust an incline of the seat member 26 is within the scope of the disclosure.

[0339] With reference now to FIGS 38A-38C, the final assembly steps of the seat member 26 with to the seat base 40 are illustrated, allowing them to be separate during shipping. As shown, the upper surface 41 of the seat base 40 includes a flexible or resilient finger 172 and the exterior surface of the recline cap 152 has a slot 174 formed therein. As the seat member 26 is aligned relative to the upper surface 41 of the seat base 40, a user slides the seat member 26 in the direction F5 shown in FIG. 38C, causing the flex finger 172 to resiliently retract. When the resilient flex finger 172 is subsequently free to move upward and engage with the slot 174 formed in the recline cap 152 connected to the seat member 26, the seat member

26 is mounted to the seat base 40. In this mounted configuration, the seat member 26 is effectively not able to be disassembled from the seat base 40.

[0340] With reference now to FIGS. 43-48, another embodiment of a seat assembly 22 having a recline lock mechanism 150 and a locking actuator 164 similar to the embodiment of FIGS. 33A-38C, is illustrated. As shown in FIG. 46, the recline cap 152 of the recline lock mechanism 150 may include a curved slot 153 formed at one or more sides thereof and an adjacent surface of the seat base 40 may include a corresponding curved rib 155 receivable within the curved slot 153. It should be appreciated that embodiments where the rib 155 is formed at the recline cap 152 and the slot 153 is formed in the seat base 40 are also within the scope of the disclosure.

[0341] Alternatively, or in addition, the upper surface 41 of the seat base 40 may have at least one base recline groove 157 formed therein and at least one seat recline member 159 extending from the bottom of the seat member 26 may be receivable within a corresponding base recline groove 157. Engagement between the seat recline member 159 and a corresponding end surface 161 of the base recline groove 157 may define an end or stop position (FIG. 45) along the path of incline of the seat member 26 relative to the seat base 40. In an embodiment, engagement between the seat recline member 159 and a corresponding end surface 161 of the base recline groove 157 restricts separation of the seat member 26 from the seat base 40.

[0342] With reference now to FIGS. 47A-48, the final assembly steps of the seat member 26 with to the seat base 40 are illustrated, allowing them to be separate during shipping. As shown in FIG. 47A, recline cap 152 is arranged in a reclined orientation (second incline position) and is lowered onto the base. From this reclined position, the recline cap 152 can be moved relative to the seat base 40 to position the one or more ribs 155 of the seat base 40 within the one or more slots 153 of the recline cap 152 (FIG. 47B). Once the slots 153 and ribs 155 are fully engaged and arranged in an upright position (first incline position) as shown in FIG. 47C, the seat member 26 may be lowered onto the seat base 40 and into engagement with the recline lock mechanism 150. With the seat recline members 159 arranged within the base recline grooves 157, the recline cap 152 may be affixed to the seat member 26, such as with a plurality of fasteners for example (see FIG. 48).

[0343] With reference now to FIGS. 39A-42B, in an embodiment, the seat back 32, and in some embodiments, a seat back extension member 38 connectable thereto, is movable relative to the remainder of the seat member 26 and the seat base 40 to adjust an incline of the seat member 26. In an embodiment, the seat back 32 and/or seat back extension member 38 is

movable relative to the seat member 26 between a first seat back position (upright or first incline position) and a second seat back position (reclined or second incline position). It should also be appreciated that the seat back 32 and/or seat back extension member 38 may be arranged at one or more positions defined between the first and second seat back positions.

[0344] In the illustrated, non-limiting embodiment, a curved rib 180 protrudes outwardly at least one side, and in some embodiments, from opposite sides of the seat back 32. A corresponding curved slot 182 is formed in the seat member 26, such as in a portion of the sidewalls 30. The engagement between the at least one rib 180 and the at least one slot 182 defines an incline path of the seat back 32 relative to the remainder of the seat member 26. In an embodiment, a forward end of the curved slots 182 (see FIG. 40) extends vertically beneath the seat portion 28 of the seat member 26 such that when the seat back 32 is arranged at a reclined position, an end of the seat back 32 is arranged beneath the seat portion 28. Such a configuration results in a generally smooth surface extending from the seat portion 28 to the seat back 32 and/or seat back extension member 38, thereby enhancing a user's comfort when in a reclined configuration. It should be appreciated that although the embodiment illustrated and described herein includes ribs 180 mounted to the seat back 32 and slots 182 formed in the sidewalls 30 of the seat member 26 embodiments where the ribs 180 protrude from the seat member 26 and are receivable within a slot 182 formed in the seat back 32 are also within the scope of the disclosure.

[0345] A recline lock mechanism 190 may be used to selectively lock the seat back 32 at a desired incline relative to the seat member 26. The recline lock mechanism 190 may be similar to the recline lock mechanism 150 described above with reference to FIGS. 34A-37B. As shown, the recline lock mechanism 150 may include one or more recline pins 192 that protrude radially outward from a surface the seat back 32 to engage at least one lock opening 194 formed in the seat member 26. Although the recline pins 192 are illustrated and described herein as being arranged at the seat back 32 and the lock openings 194 are illustrated and described as being arranged at the sidewalls 30 of the seat member 26, it should be understood that embodiments where the recline pins 192 are arranged at the seat member 26 and the lock openings 194 are formed in the seat back 32 are also within the scope of the disclosure.

[0346] An actuator 200 includes a handle 202 operably coupled to the recline pins 192. When a force F_4 is applied to the handle 202, the recline pins 192 are translated from a locked position engaged with a corresponding lock opening 194 to an unlocked position separated from a lock opening 194. The direction of movement of the handle 202 in response to the force F_4 may be arranged at an angle to the direction of movement of the recline pins 192 between

the locked and unlocked position. A biasing mechanism (not shown) may bias the recline pins 192 to the locking position upon release of the handle 202. Any suitable connection between the recline pin 192 and the handle 202 is contemplated herein. For example, the recline pins 192 may be operably coupled to a pivot member (not shown) rotatable about an axis in response to operation of the handle 202 to translate the recline pins 192.

[0347] In some embodiments having a seat back 32 and/or seat back extension member 38 movable relative to the seat member 26 between a first seat back position and a second seat back position, the seat member 26 is fixedly mounted to or is integrally formed with the seat base 40. In such embodiments, as shown in FIGS. 39A-42B, the seat portion 28 and the sidewalls 30 of the seat member 26 are not movable relative to the seat base 40. However, in other embodiments, the seat member 26 is movable relative to the seat base 40 between a first seat member position and a second seat member position. For example, the seat member 26 may be configured to translate relative to the seat base 40 and/or may be configured to incline relative to the seat base 40, such as described above with respect to FIGS. 33A-38C and FIGS. 43-47C. In such embodiments, the seat member 26 may be considered movable relative to the seat base 40 along a first path between the first seat member position and the second seat member position and the seat back 32 and/or seat back extension member 38 may be considered movable relative to the seat member 26 along a second path between a first seat back position and a second seat back position. It should be appreciated that the first path may have at least one of a linear configuration and an inclined configuration.

[0348] In embodiments where both the seat member 26 is movable relative to the seat base 40 and the seat back 32 and/or seat back extension member 38 is movable relative to the seat member 26, movement of the seat member 26 relative to the seat base 40 may occur independently from the movement of the seat back 32. In such embodiments, a first actuator, such as actuator 164 for example, is associated with and operable to move the seat member 26, and a second actuator, such as actuator 200 for example, separate from the first actuator is associated with and operable to move the seat back 32 and/or seat back extension member 38.

[0349] However, it should be appreciated that embodiments where the recline lock mechanism 150 associated with the seat member 26 is operably coupled to or is integral with the recline lock mechanism 190 associated with the seat back 32 and/or seat back extension member 38 also within the scope of the disclosure. In such embodiments, a single actuator may be operable to unlock both recline mechanisms to allow the position of either the seat member 26, the seat back 32 and/or seat back extension member 38 or both to be adjusted.

[0350] Further, in an embodiment, movement of either the seat member 26 or the seat back 32 and/or seat back extension member 38 may drive movement of the other of the seat member 26 or seat back 32 and/or seat back extension member 38. For example, movement of the seat back 32 and/or seat back extension member 38 to the second seat back position may cause the seat member 26 to transition away from the first seat member position, for example recline, relative to the seat base 40. Alternatively, or in addition, the seat back 32 and/or seat back extension member 38 may be moved from the first seat back position in response to the seat member 26 reaching the second seat member position. Although movement of the seat member 26 or the seat back 32 and/or seat back extension member 38 is described as occurring in response to the other of the seat member 26 or the seat back 32 and/or seat back extension member 38 reaching a respective second position, it should be appreciated that the movement of one of the seat member 26 and the seat back 32 and/or seat back extension member 38 may occur at any position along the first path and the second paths, respectively.

[0351] Existing high chairs when in an upright fully, inclined position typically have a center of gravity located vertically underneath the seat assembly, between the front legs and the rear legs. When the seat back of an existing high chair is in a fully reclined position, the center of gravity is shifted rearward, sometimes outwardly beyond the rear legs. This rearward movement of the center of gravity causes the high chair to be less stable when the seat is reclined.

[0352] With reference now to the child seat 20 illustrated in FIGS. 52A and 52B, the center of gravity of the child seat 20 having a child occupant seated thereon may be positioned at a location between the front legs and the rear legs of the child seat 20 in both the inclined position and the fully reclined position. The term “fully reclined position” is intended to include embodiments where the seat member 26 is in the second seat member position and the seat back 32 and/or seat back extension member 38 is at any position relative to the seat member 26, embodiments where the seat back 32 and/or seat back extension member 38 is in the second seat back position and the seat member 26 is at any position relative to the seat base 40, and embodiments where the seat back 32 and/or seat back extension member 38 is at the second seat back position and the seat member 26 is at the second seat member position.

[0353] The center of gravity of the child seat 20 may at least partially be based on the weight of the child occupant seated within the child seat 20. For example, with continued reference to FIGS. 52A and 52B, a child seat 20 having a child occupant between about 0 and 3 months of age has a first center of gravity associated with the seat assembly 22 in the inclined position (FIG. 52A) and a second center of gravity associated with the seat assembly 22 in the

fully reclined position (FIG. 52B). The average weight associated with an occupant between 0 and 3 months may be between 10 and 20 pounds, between 12 and 20 pounds, between 15 and 20 pounds, between 18 and 19 pounds, and in some embodiments, may be about 18 pounds or greater than 18 pounds, such as 18.167 pounds for example. Similarly, a child seat 20 having a child occupant approximately 1 year old has a first center of gravity associated with the seat assembly 22 in the inclined position (FIG. 53A) and a second center of gravity associated with the seat assembly 22 in the fully reclined position (FIG. 53B). The average weight associated with an occupant about 1 year old may be between 20 and 28 pounds, between 22 and 28 pounds, between 24 and 28 pounds, between 25 and 26 pounds, and in some embodiments, may be about 26 pounds or greater than 25 pounds, such as 25.636 pounds for example. With reference to FIGS. 54A and 54B, the child seat 20 having a child occupant approximately 3 years old has a first center of gravity associated with the seat assembly 22 in the inclined position (FIG. 54A) and a second center of gravity associated with the seat assembly 22 in the fully reclined position (FIG. 54B). The average weight associated with an occupant about 3 years old may be between 28 and 40 pounds, between 28 and 38 pounds, between 32 and 36 pounds, between 33 and 34 pounds, and in some embodiments, may be about 34 pounds or less than 34 pounds, such as 33.825 pounds for example. It should be appreciated that the size and weight of the child occupant will vary based on the mode of the child seat. As previously described, the overall length of one or more of the legs 24 may be determined by the mode of the child seat 20.

[0354] In an embodiment, the second center of gravity of the child seat 20 is located closer to the front legs 24a-24b of the child seat 20 than the first center of gravity. Accordingly, the center of gravity may move in a direction toward the front legs as the seat assembly 22 transforms from the inclined position and the reclined position. In other embodiments, as shown in FIGS. 52A-54B, the second center of gravity of the child seat 20 may be located closer to the rear legs of the child seat 20 than the first center of gravity. Accordingly, in such embodiments, the center of gravity may move in a direction toward the rear legs as the seat assembly 22 transforms from the inclined position and the reclined position.

[0355] Alternatively, the location of the center of gravity may remain substantially consistent between the inclined position of the seat assembly 22 and the reclined position of the seat assembly 22. As used herein, the term “substantially consistent” is intended to represent embodiments where the center of gravity does not move, or moves only a small distance, such as a 3 mm or less for example, as the seat assembly 22 transforms between the inclined position and the fully reclined positions.

[0356] The center of gravity of an occupied child seat 20 when the seat assembly 22 is in both a fully upright position and a fully reclined position may be located forward of a vertical axis X located centrally or at a midpoint between the front legs and the rear or back legs. However, embodiments where the center of gravity associated with the seat assembly 22 in the inclined position is arranged at an opposite side of the vertical axis X as the center of gravity associated with the fully reclined position, and embodiments where the centers of gravity of the occupied child seat 20 having a seat assembly 22 in both the fully upright position and the fully reclined position are located rearward of the vertical axis X are also contemplated herein. In embodiments where the center of gravity moves in response to reclining the seat assembly 22, the center of gravity may remain positioned between the front and rear legs of the child seat 20 when the seat assembly 22 is in both the upright and fully reclined positions.

[0357] As noted above, the center of gravity of the child seat 20 may move as the seat assembly transforms between the inclined position and the reclined position. The center of gravity may be movable any suitable distance, in either the forward or rearward directions. However, in an embodiment, the horizontal distance between the center of gravity associated with the seat assembly 22 in the inclined position and the center of gravity associated with the seat assembly 22 in the reclined position, may be less than two inches, and in some embodiments, less than one inch or less than half an inch in any given direction, such as upward, downward, forward, and backward. For example, with reference to FIGS. 52A and 52B, the second center of gravity of the child seat 20 is located about .078 inches downward and/or about .075 inches rearward of the first center of gravity. Similarly, with reference to FIGS. 53A and 53B, the second center of gravity of the child seat 20 is located about .077 inches downward and/or about .043 inches rearward of the first center of gravity. In the non-limiting embodiment of FIGS. 54A and 54B, the second center of gravity of the child seat 20 is located about .055 inches downward and/or about .036 inches rearward of the first center of gravity.

[0358] With reference now to FIGS. 49A-50, in an embodiment, the seat member 26 includes a depression or recess 210 formed in the seat portion 28. The depression 210 may form a hole through which a crotch strap 212 of a harness assembly is extendable. In such embodiments, a resilient tab or protrusion 214 may extend inwardly from a surface underneath the seat member 26, such as from the recline cap 152 for example, for engagement with a corresponding anchor 216 of the crotch strap 212 to secure the crotch strap in position about the seat member 26.

[0359] In other embodiments, as shown in FIG. 51, the depression 210 may engage a seat pad 220 associable with the seat member 26 to restrict movement of the seat pad 220 relative to the seat member 26, regardless of whether or not a crotch strap 212 is anchored to the seat member 26. In an embodiment, the seat pad 220 is receivable in overlapping arrangement with the upper surface of the seat portion 28 of the seat member 26 and includes a seat pad protrusion 222 positionable within the depression 210. A configuration of the seat pad protrusion 222 may but need not be substantially identical to a configuration of the depression 210.

[0360] The term “about” is intended to include the degree of error associated with measurement of the particular quantity based upon the equipment available at the time of filing the application.

[0361] The terminology used herein is for the purpose of describing particular embodiments only and is not intended to be limiting of the present disclosure. As used herein, the singular forms “a,” “an” and “the” are intended to include the plural forms as well, unless the context clearly indicates otherwise. It will be further understood that the terms “comprises” and/or “comprising,” when used in this specification, specify the presence of stated features, integers, steps, operations, elements, and/or components, but do not preclude the presence or addition of one or more other features, integers, steps, operations, element components, and/or groups thereof.

[0362] While the present disclosure has been described with reference to an exemplary embodiment or embodiments, it will be understood by those skilled in the art that various changes may be made and equivalents may be substituted for elements thereof without departing from the scope of the present disclosure. In addition, many modifications may be made to adapt a particular situation or material to the teachings of the present disclosure without departing from the essential scope thereof. Therefore, it is intended that the present disclosure not be limited to the particular embodiment disclosed as the best mode contemplated for carrying out this present disclosure, but that the present disclosure will include all embodiments falling within the scope of the claims.

What is claimed is:

1. A child seat system, the child seat system comprising:
a child seat configurable between a high chair mode and a booster mode, said child seat comprising:
at least one leg; and
a seat assembly supportable by said at least one leg, said seat assembly including a seat back that is movable along an incline path relative to a portion of said seat assembly between a first position and a second position.
2. The child seat system of claim 1, wherein said seat assembly further comprises a seat member having a seat portion and at least one sidewall extending upwardly from said seat portion, wherein said seat back is movable along said incline path relative to said seat member.
3. The child seat system of claim 2, wherein in said first position an end of said seat back is generally aligned with said seat portion and in said second position, said end of said seat back is positioned vertically beneath said seat portion.
4. The child seat system of claim 2, wherein said seat member includes at least one rib and said seat member includes at least one slot, said at least one rib being receivable within the at least one slot to define said incline path.
5. The child seat system of claim 4, wherein said at least one slot extends beneath said seat portion of said seat member.
6. The child seat system of claim 2, further comprising a recline lock mechanism operable to lock said seat back in said first position and said second position, said recline lock mechanism including:
at least one recline pin movable between a locked position and an unlocked position;
at least one lock opening, said at least one recline pin being receivable within said at least one lock opening in said locked position; and
a biasing mechanism operably coupled to said at least one recline pin, wherein a biasing force of said biasing mechanism biases said at least one recline pin to the locked position.
7. The child seat system of claim 6, wherein said at least one recline pin is arranged at said seat back and said at least one lock opening is formed at said at least one sidewall.

8. The child seat system of claim 6, further comprising an actuator operably coupled to said at least one recline pin, said actuator being operable to transform said at least one recline pin from said locked position to said unlocked position.

9. The child seat system of claim 8, wherein said at least one recline pin further comprises a plurality of recline pins, said actuator being operable to transform said plurality of recline pins from said locked position to said unlocked position in unison.

10. The child seat system of claim 1, wherein said seat assembly further comprises a seat base and a seat member, said seat member including said seat back, wherein said seat member is movable along said incline path relative to said seat base.

11. The child seat system of claim 10, further comprising a recline lock mechanism operable to lock said seat back in said first position and said second position, said recline lock mechanism including:

at least one recline pin movable between a locked position and an unlocked position;

at least one lock opening, said at least one recline pin being receivable within said at least one lock opening in said locked position; and

a biasing mechanism operably coupled to said at least one recline pin, wherein a biasing force of said biasing mechanism biases said at least one recline pin to said locked position.

12. The child seat system of claim 11, wherein said recline lock mechanism further comprises a cap mounted to a bottom of said seat member, said at least one recline pin being coupled to said seat member via said cap.

13. The child seat system of claim 12, wherein in said locked position, said at least one recline pin protrudes through an opening formed in said cap.

14. The child seat system of claim 12, further comprising an actuator operably coupled to said at least one recline pin, said actuator being operable to transform said at least one recline pin from said locked position to said unlocked position.

15. The child seat system of claim 14, wherein said actuator further comprises a handle having at least one slot formed therein and said at least one recline pin includes an engagement pin receivable within said at least one slot.

16. The child seat system of claim 15, wherein said at least one slot is arranged at an angle to a direction of movement of said handle.

17. The child seat system of claim 12, wherein said cap includes a resilient protrusion engageable with a portion of a harness assembly.

18. The child seat system of claim 11, wherein said recline lock mechanism includes at least one slot and said seat base includes at least one rib, said at least one rib being receivable within said at least one slot to define said incline path.

19. The child seat system of claim 10, wherein said seat base includes a base recline groove and said seat member includes a seat recline member receivable within said base recline groove.

20. The child seat system of claim 10, further comprising a seat pad, said seat pad being positionable about said seat assembly.

21. The child seat system of claim 20, wherein said seat assembly includes a depression and said seat pad includes a seat pad protrusion receivable within said depression to position said seat pad about said seat assembly.

22. The child seat system of claim 1, wherein said seat back is movable along said incline path when said child seat is in each of said high chair mode and said booster mode.

23. The child seat system of claim 1, further comprising a seat back extension member, said seat back extension member being connectable to said seat back for movement along said incline path.

24. A child seat assembly, comprising:
at least one leg;
a seat base, said seat base being supportable by said at least one leg; and
a seat back that is slidable along an incline path relative to said seat base between a first incline position and a second incline position.

25. The child seat assembly of claim 24, wherein when said seat back transitions between said first incline position and said second incline position, said seat back rotates relative to said seat base about an axis that is offset from an intersection between said seat back and said seat base.

26. The child seat assembly of claim 25, wherein said seat back is part of a seat member and said seat member further comprises a seat portion and at least one sidewall extending upwardly from said seat portion.

27. The child seat assembly of claim 26, wherein in said first incline position an end of said seat back is generally aligned with said seat portion and in said second incline position, said end of said seat back is positioned vertically beneath said seat portion.

28. The child seat assembly of claim 26, wherein said seat portion and said at least one sidewall are fixedly mounted to said seat base.

29. The child seat assembly of claim 26, wherein said seat member is movable relative to said seat base.

30. The child seat assembly of claim 24, further comprising a seat back extension member connectable to said seat back.

31. A child seat assembly, comprising:
a seat base;
a seat member including a seat portion and a back portion;
wherein said seat member is movably coupled to said seat base; and
wherein said back portion of said seat member is movably coupled to said seat portion of said seat member.

32. The child seat assembly of claim 31, wherein said seat member is movable relative to said seat base along an incline path.

33. The child seat assembly of claim 31, wherein said seat member is translatable relative to said seat base along a linear path.

34. The child seat assembly of claim 31, wherein said back portion is movable along an incline path relative to said seat portion between a first seat back position and a second seat back position.

35. The child seat assembly of claim 34, wherein in said first seat back position an end of said back portion is generally aligned with said seat portion and in said second seat back position, said end of said back portion is positioned vertically beneath said seat portion.

36. The child seat assembly of claim 35, wherein said back portion includes at least one rib and said seat portion includes at least one slot, said at least one rib being receivable within the at least one slot to define said incline path.

37. The child seat assembly of claim 36, wherein said at least one slot extends beneath said seat portion of said seat member.

38. The child seat assembly of claim 31, further comprising a recline lock mechanism operable to at least one of lock said back portion relative to said seat member and lock said seat member relative to said seat base, said recline lock mechanism including:

at least one recline pin movable between a locked position and an unlocked position;

at least one lock opening, said at least one recline pin being receivable within said at least one lock opening in said locked position; and

a biasing mechanism operably coupled to said at least one recline pin, wherein a biasing force of said biasing mechanism biases said at least one recline pin to said locked position.

39. The child seat assembly of claim 38, wherein said seat member further includes at least one sidewall extending upwardly from said seat portion and said at least one recline pin is arranged at said back portion and said at least one lock opening is formed at said at least one sidewall.

40. The child seat assembly of claim 39, wherein said recline lock mechanism further comprises a cap mounted to a bottom of said seat member, said at least one recline pin being coupled to said seat member via said cap.

41. The child seat assembly of claim 40, wherein in said locked position, said at least one recline pin protrudes through an opening formed in said cap.

42. The child seat assembly of claim 38, further comprising an actuator operably coupled to said at least one recline pin, said actuator being operable to transform said at least one recline pin from said locked position to said unlocked position.

43. A child seat assembly, comprising:

a seat assembly including:

a seat member movable along a first path within the child seat assembly, said seat member including a seat portion and a back portion movable relative to said seat portion along a second path;

wherein said back portion is operably coupled to said seat member such that at least one of said back portion is movable along said second path in response to said seat member being moved along said first path and said seat member is movable along said first path in response to said back portion being moved along said second path.

44. The child seat assembly of claim 43, wherein said first path is an incline path such that said seat member is movable between a first seat member position arranged at a first incline and a second seat member position arranged at a second incline.

45. The child seat assembly of claim 44, wherein said first path has a linear configuration.

46. The child seat assembly of claim 44, wherein said seat member is movable along said first path between said first seat member position and said second seat member position and said back portion is movable along said second path between a first seat back position and a second seat back position, wherein said seat member is movable from said first seat member position in response to said back portion being moved to said second seat back position.

47. The child seat assembly of claim 44, wherein said seat member is movable along said first path between seat first seat member position and said second seat member position and said back portion is movable along said second path between a first seat back position and a second seat back position, wherein said back portion is movable from said first seat back position in response to said seat member being moved to said second seat member position.

48. A child seat system that supports a child occupant, the child seat system comprising:

at least one front leg and at least one back leg; and

a seat assembly supportable by said at least one front leg and said at least one back leg, said seat assembly having a first portion and a second portion, said second portion being movable relative to said first portion between an inclined position and a reclined position;

wherein when the child occupant is supported in the child seat system, a center of gravity is at least one of consistent as said second portion moves from said inclined position to said reclined position, moving in a direction towards said at least one front leg as said second portion moves from said inclined position to said reclined position, and moving in a direction towards said at least one back leg less than two inches as said second portion moves from said inclined position to said reclined position.

49. The child seat system of claim 48, wherein said center of gravity of the child seat system is arranged between said at least one front leg and said at least one back leg when said second portion of said seat assembly is in said inclined position and said reclined position.

50. The child seat system of claim 48, wherein said center of gravity is arranged at a midpoint between said at least one front leg and said at least one back leg when said second portion of said seat assembly is in at least one of said inclined position and said reclined position.

51. The child seat system of claim 48, wherein said first portion of said seat assembly is a seat base and said second portion of said seat assembly is a seat member.

52. The child seat system of claim 48, wherein said first portion of said seat assembly is a seat member and said second portion of said seat assembly is a seat back.

53. A child seat assembly, comprising:

at least one leg;

a seat connectable to said at least one leg, said seat being configured to recline to provide an upright position and a reclined position; and

a tray attachable to the child seat assembly, said tray having a support surface, wherein said support surface is positionable at a substantially horizontal position when said seat is in said reclined position.

54. The child seat assembly of claim 53, wherein said support surface is positionable at a substantially horizontal position when said seat is in said upright position.

55. The child seat assembly of claim 53, wherein said tray is pivotable relative to said seat.

56. The child seat assembly of claim 55, wherein said tray further comprises a locking assembly operable to lock said tray in a position relative to said seat.

57. The child seat assembly of claim 53, wherein said tray is attachable to the child seat assembly in a plurality of discrete orientations.

58. The child seat assembly of claim 53, wherein said tray is attachable to a portion of the child seat assembly that does not recline with said seat.

59. The child seat assembly of claim 58, wherein said tray is attachable to said at least one leg.

60. The child seat assembly of claim 58, wherein said seat further comprises a seat member and a seat base, and at least a portion of said seat member being movable relative to said seat base between said upright position and said reclined position.

61. The child seat assembly of claim 60, wherein said tray is attachable to said seat base.

62. The child seat assembly of claim 53, wherein said seat further comprises a seat member and a seat base, at least a portion of said seat member being movable relative to said seat base between said upright position and said reclined position, wherein said tray is attachable to said portion of said seat member.

63. The child seat assembly of claim 62, wherein said tray further comprises a mounting assembly, said mounting assembly being connectable to the child seat assembly.

64. The child seat assembly of claim 63, wherein said seat member further comprises a seat portion and at least one sidewall extending from said seat portion, said mounting assembly being positionable in overlapping arrangement with said at least one sidewall.

65. The child seat assembly of claim 53, wherein said seat further comprises a seat member having a seat portion and at least one sidewall extending from said seat portion, said tray being positionable adjacent to an exterior of said at least one sidewall.

66. The child seat assembly of claim 53, wherein said seat further comprises a seat member and said tray is positionable proximate to a corner of said seat member.

67. A child seat assembly, comprising:

a seat member having a seat portion and at least one sidewall extending from said seat portion to define an interior of said seat member; and

at least one tray attachable to the child seat assembly such that said at least one tray is remote from said interior of said seat member.

68. The child seat assembly of claim 67, wherein said at least one tray is positionable adjacent to an exterior of said at least one sidewall.

69. The child seat assembly of claim 67, wherein said at least one tray is positionable proximate to a corner of said seat member.

70. The child seat assembly of claim 67, wherein said at least one tray further comprises a first tray and a second tray, said first tray and said second tray being connectable to the child seat assembly simultaneously.

71. The child seat assembly of claim 70, wherein said first tray is positionable at a first location about an exterior of said seat member and said second tray is positionable at a second located about said exterior of said seat member.

72. The child seat assembly of claim 67, wherein said at least one tray has a support surface, said support surface being movable relative to said seat member when said at least one tray is attached to the child seat assembly.

73. The child seat assembly of claim 72, wherein said at least one tray is pivotable relative to said seat member when said at least one tray is attached to the child seat assembly.

74. The child seat assembly of claim 72, wherein said at least one tray is translatable relative to said seat member when said at least one tray is attached to the child seat assembly.

75. The child seat assembly of claim 72, wherein said at least one tray further comprises a locking assembly operable to lock said at least one tray in a position relative to said seat member.