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CHILD STROLLER APPARATUS

Abstract

A child stroller apparatus includes a first leg frame having a first side segment, a second leg frame having a second side segment, a handle frame having a third side segment, a seat assembly coupled to the first side segment, and a linkage including a support bar, a slider and a frame link. The third side segment is respectively connected pivotally to the first side segment and the second side segment, wherein the third side segment is pivotally connected to the first side segment via an articulation. The support bar is respectively connected pivotally to the first side segment and the second side segment, the slider is coupled to the seat assembly and is slidably connected to the support bar, and the frame link is pivotally connected to the slider, the slider sliding along the support bar during folding and unfolding of the child stroller apparatus.

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Background/Summary

CROSS-REFERENCE TO RELATED APPLICATION(S) [0001] This application is a national stage application of PCT/EP2023/051255, filed Jan. 19, 2023, which claims priority to China patent application no. 202210101200.0 filed on Jan. 27, 2022, to China patent application no. 202210486837.6 filed on May 6, 2022, and to China patent application no. 202210632422.5 filed on Jun. 6, 2022, All of which are incorporated herein by reference in their entirety.

BACKGROUND
1. Field of the Invention
[0002] The present invention relates to child stroller apparatuses.
2. Description of the Related Art
[0003] Child strollers are commonly used for transporting young children. A child stroller generally includes a metallic frame made from the assembly of metallic and plastic components, and a fabric material that is connected to or covers the metallic frame. When it is not used, the child stroller can be folded for convenient storage or transport. Existing child strollers may have various types of frame constructions that allow folding and unfolding operations. From a caregiver's perspective, an important factor of consideration is the ability to conveniently fold and unfold the child stroller during use.
SUMMARY
[0004] The present application describes a child stroller apparatus that can be folded and unfolded in a smooth and convenient way.
[0005] According to an embodiment, the child stroller apparatus includes a first leg frame having a first side segment, a second leg frame having a second side segment, a handle frame having a third side segment, a seat assembly coupled to the first side segment, and a linkage including a support bar, a slider and a frame link. The third side segment is respectively connected pivotally to the first side segment and the second side segment, wherein the third side segment is pivotally connected to the first side segment via an articulation. The support bar is respectively connected pivotally to the first side segment and the second side segment, the slider is coupled to the seat assembly and is slidably connected to the support bar, and the frame link is pivotally connected to the slider, the slider sliding along the support bar during folding and unfolding of the child stroller apparatus.

Description

BRIEF DESCRIPTION OF THE DRAWINGS
[0006] FIG. **1** is a perspective view illustrating an embodiment of a child stroller apparatus;
[0007] FIG. **2** is a perspective view illustrating the child stroller apparatus of FIG. **1** under a different angle of view;
[0008] FIG. **3** is a side view of the child stroller apparatus shown in FIG. **1**;
[0009] FIG. **4** is a top view of the child stroller apparatus shown in FIG. **1**;
[0010] FIG. **5** is a bottom view of the child stroller apparatus shown in FIG. **1**;
[0011] FIG. **6** is a cross-sectional view illustrating a connection region between a backrest frame and a slider in the child stroller apparatus shown in FIG. **1**;

[0012] FIG. **7** is a perspective view illustrating some construction details of the slider in the child stroller apparatus shown in FIG. **1**;
[0013] FIG. **8** is a perspective view illustrating some construction details inside a pivot coupling portion of the backrest frame in the child stroller apparatus shown in FIG. **1**;
[0014] FIG. **9** is a perspective view illustrating some construction details of a backrest locking mechanism and a frame locking mechanism in the child stroller apparatus shown in FIG. **1**;
[0015] FIG. **10** is a side view illustrating exemplary folding operation of the child stroller apparatus shown in FIG. **1**;
[0016] FIG. **11** is a perspective view illustrating the child stroller apparatus of FIG. **1** in a fully folded state;
[0017] FIG. **12** is a schematic view illustrating a fastener engaged with the slider in the child stroller apparatus of FIG. **1** occurring when the child stroller apparatus is fully folded;
[0018] FIG. **13** is a side view illustrating another embodiment of the child stroller apparatus;
[0019] FIG. **14** is a schematic view illustrating the child stroller apparatus of FIG. **13** without a softgoods member installed thereon;
[0020] FIG. **15** is a schematic view illustrating some construction details of a softgoods member suitable for use with the child stroller apparatus of FIG. **13**;
[0021] FIG. **16** is a perspective view illustrating a variant embodiment of the child stroller apparatus shown in FIG. **1**;
[0022] FIG. **17** is a perspective view illustrating the child stroller apparatus of FIG. **16** under a different angle of view;
[0023] FIG. **18** is a side view of the child stroller apparatus shown in FIG. **16**;
[0024] FIG. **19** is a rear view of the child stroller apparatus shown in FIG. **16**;
[0025] FIG. **20** is a bottom view of the child stroller apparatus shown in FIG. **16**;
[0026] FIG. **21** is an enlarged view of a portion of the child stroller apparatus shown in FIG. **16**;
[0027] FIG. **22** is an enlarged bottom view of a portion of the child stroller apparatus shown in FIG. **20**;
[0028] FIG. **23** is an enlarged rear view of a portion of the child stroller apparatus shown in FIG. **19**;
[0029] FIG. **24** is an enlarged view illustrating some construction details of the child stroller apparatus shown in FIG. **16**;
[0030] FIG. **25** is a cross-sectional view illustrating a connection region of a seat portion, a backrest frame and a slider in the child stroller apparatus shown in FIG. **16**;
[0031] FIG. **26** is a cross-sectional view illustrating a frame locking mechanism in the child stroller apparatus of FIG. **16** in an unlocking state;
[0032] FIG. **27** is a partial cross-sectional view illustrating further construction details of a driving part inside a pivot coupling portion of the backrest frame in the child stroller apparatus of FIG. **16**;
[0033] FIG. **28** is a cross-sectional view illustrating some construction details of a safety lock mechanism provided in the child stroller apparatus of FIG. **16**;
[0034] FIG. **29** is a cross-sectional view illustrating the safety lock mechanism of FIG. **28** in an unlocking state;
[0035] FIG. **30** is a side view illustrating exemplary folding operation of the child stroller apparatus shown in FIG. **16**;
[0036] FIG. **31** is a perspective view illustrating a variant embodiment of the child stroller apparatus shown in FIGS. **16**-**30**;
[0037] FIG. **32** is an enlarged view of a portion of the child stroller apparatus shown in FIG. **31**;
[0038] FIG. **33** is an enlarged bottom view of a portion of the child stroller apparatus shown in FIG. **31**;
[0039] FIG. **34** is an enlarged view illustrating a portion of the child stroller apparatus shown in FIG. **31**;

[0040] FIG. **35** is an enlarged view taken under a different angle of view illustrating a portion of the child stroller apparatus shown in FIG. **31**;
[0041] FIG. **36** is a perspective view illustrating a portion of a seat assembly in the child stroller apparatus of FIG. **31**;
[0042] FIG. **37** is a cross-sectional view illustrating a safety lock mechanism provided in the child stroller apparatus of FIG. **31**;
[0043] FIG. **38** is a cross-sectional view illustrating the safety lock mechanism of FIG. **36** in an unlocking state;
[0044] FIG. **39** is a perspective view illustrating exemplary folding of the child stroller apparatus shown in FIG. **31**;
[0045] FIG. **40** is a side view illustrating exemplary folding of the child stroller apparatus shown in FIG. **31**; and
[0046] FIG. **41** is a side view illustrating the child stroller apparatus of FIG. **31** in a fully folded state.

DETAILED DESCRIPTION OF THE EMBODIMENTS

[0047] Various embodiments of a child stroller apparatus will be described hereinafter with reference to the accompanying drawings, wherein the same reference numbers used in the drawings will refer to the same or similar elements.
[0048] FIGS. **1** and **2** are perspective views illustrating an embodiment of a child stroller apparatus **100** under different angles of view. FIG. **3** is a side view of the child stroller apparatus **100**. FIG. **4** is a top view of the child stroller apparatus **100**. FIG. **5** is a bottom view of the child stroller apparatus **100**. Referring to FIGS. **1**-**5**, the child stroller apparatus **100** has a stroller frame **101**, which can include two leg frames **102** and **104**, a handle frame **106**, a seat assembly **108** and two linkages **110**.
[0049] The leg frame **102** is exemplarily a front leg frame, and can be formed by a plurality of tubular segments. The leg frame **102** can include two side segments **102**A respectively disposed at a left and a right side of the child stroller apparatus **100**, and a transversal portion **102**B connected to the two side segments **102**A. A lower portion of the leg frame **102** can be provided with a plurality of wheels **112**A.
[0050] The leg frame **104** is exemplarily a rear leg frame, and can be formed by a plurality of tubular segments. The leg frame **104** can include two side segments **104**A respectively disposed at a left and a right side of the child stroller apparatus **100**, and a transversal portion **104**B connected to the two side segments **104**A. A lower portion of the leg frame **104** can be provided with a plurality of wheels **112**B.
[0051] The handle frame **106** can also be formed by a plurality of tubular segments. The handle frame **106** can include two side segments **106**A respectively disposed at a left and a right side of the child stroller apparatus **100**, and a transversal segment **106**B connected to the two side segments **106**A.
[0052] Two same and symmetrical assembly structures can be respectively provided at the left and right side of the child stroller apparatus **100** for connecting the two leg frames **102** and **104** and the handle frame **106**. According to an embodiment, the leg frame **102** and the handle frame **106** are pivotally connected to each other via two articulations **114** respectively disposed at the left and right side thereof, whereby the handle frame **106** is rotatable relative to the leg frame **102**. Each articulation **114** can include, e.g., an articulation portion **114**A fixedly connected to a corresponding one of the two side segments **102**A of the leg frame **102** at an upper end thereof, and an articulation portion **114**B fixedly connected to a corresponding one of the two side segments **106**A of the handle frame **106** at a lower end thereof, the two articulation portions **114**A and **114**B being pivotally connected to each other so that the side segment **106**A of the handle frame **106** is pivotally connected to the side segment **102**A of the leg frame **102** via the articulation **114**. Moreover, the leg frame **104** and the handle frame **106** are pivotally connected to each other so that

the handle frame **106** is rotatable relative to the leg frame **104**. For example, an upper end of the side segment **104**A of the leg frame **104** can be pivotally connected to the side segment **106**A of the handle frame **106** via an articulation **116**. The articulations **114** and **116** that respectively connect the handle frame **106** to the leg frames **102** and **104** can be spaced apart from each other. The articulations **116** can be higher than the articulations **114** in elevation when the child stroller apparatus **100** is in an unfolded state.

[0053] Referring to FIGS. **1-5**, the seat assembly **108** can be coupled to the side segments **102**A of the leg frame **102** and the two linkages **110**. According to an embodiment, the seat assembly **108** can include two seat portions **118** and **120** and a backrest frame **122**. The seat portions **118** and **120** are connected to each other, and are adapted to provide seating support for a child. The seat portions **118** and **120** can include, without limitation, rigid seat pans. The backrest frame **122** is pivotally connected to the seat portion **120** about an axis X, and is adapted to provide support for a child's back. According to an example of construction, the backrest frame **122** can include two side segments **122**A respectively disposed at a left and a right side of the seat assembly **108**, and a transversal portion **122**B connected to the two side segments **122**A. The backrest frame **122** can include, without limitation, a plurality of tubular segments. According to an embodiment, the seat portion **120** can be pivotally connected to the side segments **122**A of the backrest frame **122** via a shaft **124**, wherein each of the side segments **122**A can be fixedly connected to a pivot coupling portion **126**, and the shaft **124** can be connected to the seat portion **120** and extend transversally along the axis X through each pivot coupling portion **126** so that the backrest frame **122** and the pivot coupling portions **126** are rotatable around the shaft **124**. Accordingly, the backrest frame **122** is rotatable about the axis X relative to the seat portions **118** and **120** for adjusting an inclination angle of the backrest frame **122** to provide suitable back support.

[0054] The two seat portions **118** and **120** are pivotally connected to each other, the seat portion **118** is pivotally connected to the side segments **102**A of the leg frame **102**, and the seat portion **120** is coupled to the two linkages **110**. According to an example of construction, the seat portion **118** can be pivotally connected to the seat portion **120** via an articulation **128** so that the seat portion **118** is rotatable relative to the seat portion **120**. The articulation **128** can have any suitable construction. For example, the articulation **128** can include a shaft that is disposed through pivot coupling portions provided on the seat portions **118** and **120** so that the seat portions **118** and **120** are rotatable around the shaft. An end of the seat portion **118** opposite to the articulation **128** can be pivotally connected to each side segment **102**A of the leg frame **102** via an articulation **130** so that the seat portion **118** is rotatable relative to the leg frame **102**. The articulation **130** can have any suitable construction. For example, the seat portion **118** can be pivotally connected to each side segment **102**A of the leg frame **102** via a shaft forming the articulation **130**. An end of the seat portion **120** opposite to the articulation **128** can be respectively connected pivotally to the two linkages **110** at the left and right side so that the seat portion **120** is rotatable relative to the two linkages **110**. The linkages **110** are configured so that the seat portions **118** and **120** are movably linked to folding and unfolding of the child stroller apparatus **100**, whereby the seat portions **118** and **120** can be folded over each other to form an acute angle when the child stroller apparatus **100** is folded and can be unfolded to extend generally along a same plane when the child stroller apparatus **100** is unfolded. The side segments **102**A of the leg frame **102** can further be provided with a leg support **131**, which is disposed adjacent to the location where the side segments **102**A connect to the seat portion **118**. The leg support **131** can extend transversally between the left and right side and connect to the two side segments **102**A, and can extend forward and downward for supporting the legs of a child.

[0055] Referring to FIGS. **1-5**, the two linkages **110** are respectively disposed at the left and right side of the child stroller apparatus **100**. The linkage **110** disposed at one of the left and right side will be described in details hereinafter, the linkage **100** at the other side being identical in construction. The linkage **110** can include a support bar **132**, a slider **134** and a frame link **136**. The

support bar **132** is respectively connected pivotally to the side segment **102**A of the leg frame **102** and the side segment **104**A of the leg frame **104** so that the support bar **132** is rotatable relative to the leg frames **102** and **104**. The slider **134** is coupled to the seat assembly **108** and is slidably connected to the support bar **132**. For example, the slider **134** can be pivotally connected to the seat portion **120** of the seat assembly **108** and slidably connected to the support bar **132** so that the seat portion **120** is rotatable relative to the slider **134**. The slider **134** can slide along the support bar **132** between two pivot connections **138** and **140** thereof, wherein the support bar **132** is pivotally connected to the side segment **102**A of the leg frame **102** via the pivot connection **138** and is pivotally connected to the side segment **104**A of the leg frame **104** via the pivot connection **140**. The pivot connection **138** between the side segment **102**A of the leg frame **102** and the support bar **132** can be located between the two articulations **114** and **130**, and the side segment **102**A of the leg frame **102**, the side segment **104**A of the leg frame **104**, the side segment **106**A of the handle frame **106** and the support bar **132** can form a four-bar linkage.

[0056] According to an example of construction, the child stroller apparatus **100** can further include a front guard **142** that is fixedly connected to the support bar **132** at each of the left and right side. When a child sits in the child stroller apparatus **100**, the front guard **142** can project forward from the leg frame **102** above the seat portion **118** and extend in front of the child, whereby the front guard **142** is adapted to restrict the child and serve as an armrest.

[0057] Referring to FIGS. **1-5**, the frame link **136** is pivotally connected to the slider **134** so that the slider **134** slides along the support bar **132** as the child stroller apparatus **100** is folded and unfolded. The frame link **136** can be coupled to any suitable locations on the stroller frame **101** so that a sliding movement of the slider **134** along the support bar **132** toward the pivot connection **138** is linked to a folding movement of the stroller frame **101** via the frame link **136**, and a sliding movement of the slider **134** along the support bar **132** toward the pivot connection **140** is linked to an unfolding movement of the stroller frame **101** via the frame link **136**. Examples of suitable locations on the stroller frame **101** for coupling to the frame link **136** can include the articulation **114**, a location on the side segment **102**A of the leg frame **102** adjacent to the articulation **114**, and a location on the side segment **106**A of the handle frame **106** adjacent to the articulation **114**.

[0058] According to an example of construction, the frame link **136** can be respectively connected pivotally to the articulation **114** and the slider **134**. For example, the side segment **102**A of the leg frame **102**, the side segment **106**A of the handle frame **106** and an end of the frame link **136** can be pivotally connected to one another in a coaxial manner at the articulation **114** so that the side segments **102**A and **106**A and the frame link **136** are rotatable relative to one another about a same axis. According to an embodiment, the frame link **136** can be a single linking bar having a first end pivotally connected at the pivot connection **114** and a second end pivotally connected to the slider **134**. With the construction described herein, the slider **134** can slide toward the location where the support bar **132** pivotally connects to the side segment **102**A of the leg frame **102** during folding of the child stroller apparatus **100**, and can slide toward the location where the support bar **132** pivotally connects to the side segment **104**A of the leg frame **104** during unfolding of the child stroller apparatus **100**.

[0059] The seat portion **120** can be respectively connected pivotally to the backrest frame **122** and the slider **134** about a same axis or different axes, wherein the seat portion **120** can be pivotally connected to the backrest frame **122** and the slider **134** via one or multiple shaft(s) so that the seat portion **120** is rotatable relative to the slider **134** and the backrest frame **122**. According to an embodiment, the seat assembly **108** is pivotally connected to the slider **134** about the axis X so that the seat assembly **108** is rotatable about the axis X relative to the slider **134**. For example, the seat portion **120**, the backrest frame **122** and the slider **134** can be pivotally connected to one another about the same axis X for providing a structure that is compact and can be conveniently operated. More details of an embodiment in which the seat portion **120**, the backrest frame **122** and the slider **134** are pivotally connected to one another about the same axis X is described hereinafter.

[0060] In conjunction with FIGS. **1-5**, FIG. **6** is a cross-sectional view illustrating a connection region between the backrest frame **122** and the slider **134**, FIG. **7** is a perspective view illustrating some construction details of the slider **134**, and FIG. **8** is a perspective view illustrating some construction details inside the pivot coupling portion **126** of the backrest frame **122**. Referring to FIGS. **1-8**, the slider **134** can have a slide coupling portion **134**A and a pivot coupling portion **134**B fixedly connected to each other. According to an example of construction, the slider **134** including the slide coupling portion **134**A and the pivot coupling portion **134**B can be a single component integrally formed as one body. The slide coupling portion **134**A can be slidably connected to the support bar **132** for sliding movement of the slider **134** along the support bar **132**. According to an example of construction, the slide coupling portion **134**A can have a hole through which is disposed the support bar **132** for slidably coupling the slider **134** to the support bar **132**. It will be appreciated, however, that the sliding connection between the support bar **132** and the slider **134** is not limited to the illustrated example. According to another example of construction, a guide track may be disposed along the support bar **132**, and the slide coupling portion **134**A of the slider **134** may be configured to slidably connect to the guide track.

[0061] The pivot coupling portion **126** on the side segment **122**A of the backrest frame **122** can be pivotally connected to the pivot coupling portion **134**B of the slider **134** so that the backrest frame **122** is rotatable about the axis X relative to the slider **134**. Moreover, the shaft **124** can extend through the pivot coupling portion **126** and connect to the pivot coupling portion **134**B of the slider **134**, and the seat portion **120** of the seat assembly **108** can be pivotally connected around the shaft **124** so that the seat portion **120** is pivotally connected to the slider **134** about the shaft **124** and hence the axis X. Accordingly, the seat portion **120** is rotatable about the axis X relative to the slider **134** and the backrest frame **122**, wherein the seat portion **120** can rotate around the shaft **124**. In the assembly described herein, the shaft **124** is thus carried with the slider **134** and can slide along with the slider **134** along the support bar **132** at each of the left and right side, the backrest frame **122** can rotate around the shaft **124** relative to the seat portion **120** and the sliders **134**, and the seat portion **120** can also rotate around the shaft **124** relative to the backrest frame **122** and the sliders **134**. When the child stroller apparatus **100** is folded, the seat portions **118** and **120** fold over each other, and the slider **134** and the shaft **124** slide in unison toward the location where the support bar **132** pivotally connects to the side segment **102**A of the leg frame **102**. When the child stroller apparatus **100** is unfolded, the seat portions **118** and **120** unfold relative to each other, and the slider **134** and the shaft **124** slide in unison toward the location where the support bar **132** pivotally connects to the side segment **104**A of the leg frame **104**.

[0062] Referring to FIGS. **1**, **2**, **4** and **6-8**, the child stroller apparatus **100** further includes a backrest locking mechanism **144** configured to lock the backrest frame **122** to the slider **134** for preventing rotation of the backrest frame **122** relative to the slider **134**. The backrest locking mechanism **144** can include a locking part **146**, a resilient element **148** and a release actuator **150**. The locking part **146** can be slidably connected to the shaft **124** so that the locking part **146** can slide along the shaft **124** between a locking position and an unlocking position. In the locking position, the locking part **146** engages with the pivot coupling portion **126** of the backrest frame **122** and the pivot coupling portion **134**B of the slider **134** to prevent rotation of the backrest frame **122** relative to the slider **134**. In the unlocking position, the locking part **146** disengages from one of the pivot coupling portion **126** of the backrest frame **122** and the pivot coupling portion **134**B of the slider **134** for rotation of the backrest frame **122** relative to the slider **134**. The locking part **146** can have a circumference provided with a plurality of protruding teeth, which can engage with the pivot coupling portion **126** of the backrest frame **122** and the pivot coupling portion **134**B of the slider **134** in the locking position for preventing relative rotation between the pivot coupling portion **126** and the pivot coupling portion **134**B. For facilitating the sliding connection between the locking part **146** and the shaft **124**, the locking part **146** can have a hole **146**A, and the shaft **124** can be disposed through the hole **146**A, whereby the locking part **146** can slide along the axis

X relative to the pivot coupling portion **126** of the backrest frame **122** and the pivot coupling portion **134**B of the slider **134**.

[0063] The resilient element **148** is connected to the locking part **146**, and is configured to apply an elastic force for biasing the locking part **146** toward the locking position. The resilient **148** can include, e.g., a spring. According to an example of construction, the locking part **146** is disengaged from the pivot coupling portion **126** of the backrest frame **122** in the unlocking position, and the resilient element **148** is respectively connected to the slider **134** and the locking part **146**.

[0064] The release actuator **150** is connected to the locking part **146**, and is operable to cause the locking part **146** to slide toward the unlocking position. According to an example of construction, the release actuator **150** can include an actuating portion **152** and an operating portion **154**. The actuating portion **152** can be disposed inside the pivot coupling portion **126** of the backrest frame **122** and can be in sliding contact with the locking part **146**. The operating portion **154** can be fixedly connected to the actuating portion **152**, can extend outside the pivot coupling portion **126** of the backrest frame **122**, and can be slidably connected to the side segment **122**A of the backrest frame **122** via the pivot coupling portion **126**. According to an example of construction, the release actuator **150** is slidable relative to the backrest frame **122** along a sliding direction that extends generally radially with respect to the shaft **124**, and the actuating portion **152** can be in sliding contact with a ramp surface **146**B provided on the locking part **146**. The release actuator **150** is operable to urge the locking part **146** to slide against the elastic force of the resilient element **148** from the locking position to the unlocking position.

[0065] According to an example of construction, the locking part **146** and the resilient element **148** described previously can be provided at each of the left and right side of the seat assembly **108**, and the operating portion **154** of the release actuator **150** can be provided with the actuating portion **152** described previously at each of the left and right side, whereby the release actuator **150** is operable to cause the two locking parts **146** at the left and right side to unlock in a concurrent manner.

[0066] Referring to FIGS. **1** and **6**-**8**, the child stroller apparatus **100** can further include a frame locking mechanism **156** having a locking state and an unlocking state, wherein the frame locking mechanism **156** locks the slider **134** to the support bar **132** in the locking state, and allows sliding of the slider **134** along the support bar **132** in the unlocking state. The frame locking mechanism **156** can include a latch **158** movable to lock and unlock the slider **134** with respect to the support bar **132**. According to an example of construction, the latch **158** is at least partially received inside the slider **134**, and is movable relative to the slider **134** to engage with and disengage from the support bar **132**. The latch **158** is engaged with the support bar **132** in the locking state to prevent the slider **134** from sliding relative to the support bar **132**, whereby the child stroller apparatus **100** can be locked in the unfolded state. The latch **158** is disengaged from the support bar **132** in the unlocking state so that the slider **134** can slide along the support bar **132** for folding or unfolding the child stroller apparatus **100**.

[0067] According to an example of construction, the latch **158** is configured to slide relative to the slider **134** for engaging with and disengaging from the support bar **132**. More specifically, the shaft **124** can have a hollow interior, and the latch **158** can be disposed to slide along the hollow interior of the shaft **124** inside the slider **134**. For example, the latch **158** can be slidably connected to the shaft **124**, whereby the latch **158** is slidable along the axis X relative to the shaft **124** and the slider **134** for engaging with and disengaging from the support bar **132**.

[0068] Referring to FIGS. **1** and **6**-**8**, the frame locking mechanism **156** can further include a latch actuator **160** and a resilient element **162**. The latch actuator **160** is connected to the latch **158**, and is operable to cause the latch **158** to move relative to the slider **134** for disengaging from the support bar **132**. According to an example of construction, the latch actuator **160** and the latch **158** are configured to move in a concurrent manner to cause the latch **158** to engage with and disengage from the support bar **132**. Accordingly, a caregiver can operate the latch actuator **160** to switch the frame locking mechanism **156** to either of the unlocking state and the locking state as desired.

[0069] Referring to FIGS. **1** and **6**-**8**, the latch actuator **160** can include the shaft **124** and a handle **164**. The handle **164** can be fixedly connected to the shaft **124** and can project from the shaft **124** along a generally radial direction, whereby a caregiver can use a hand to grasp the handle **164** and operate the latch actuator **160**. According to an example of construction, the latch actuator **160** has at least a portion configured to be rotatable about the axis X. For example, the shaft **124** can be pivotally connected to the pivot coupling portion **134**B of the slider **134**, whereby the shaft **124** can rotate about the axis X relative to the slider **134**. Accordingly, the latch actuator **160** is pivotally connected to the slider **134** about the axis X, and can rotate about the axis X relative to the slider **134**.

[0070] The latch **158** is slidably connected to the latch actuator **160**, and can rotate along with the latch actuator **160** about the axis X. For example, the latch actuator **160** can have a guide slot **166** arranged on the shaft **124**, and the latch **158** can have a protrusion **168** slidably connected through the guide slot **166**. Through the sliding connection between the guide slot **166** and the protrusion **168**, the latch **158** and the latch actuator **160** can rotate concurrently about the axis X, and the latch **158** can slide along the axis X relative to the latch actuator **160**. Moreover, the latch **158** can be in sliding contact with an interacting surface **170** (better shown in FIG. **7**) provided on the slider **134**, wherein at least one of the latch **158** and the interacting surface **170** has a ramp surface. Accordingly, a rotation of the latch actuator **160** about the axis X can cause the latch **158** to concurrently rotate and slide along the axis X. According to an example of construction, the interacting surface **170** is a ramp surface. The interacting surface **170** can be disposed in the pivot coupling portion **134**B of the slider **134** and at a periphery of the shaft **124**, and the protrusion **168** of the latch **158** can be in sliding contact with the interacting surface **170**. According to another example of construction, the ramp surface can be provided on the latch **158**, and the interacting surface **170** can be defined on a protrusion in sliding contact with the ramp surface, whereby a rotation of the latch actuator **160** about the axis X can likewise cause the latch **158** to concurrently rotate and slide along the axis X. Accordingly, the latch actuator **160** is operable to cause the latch **158** to slide relative to the shaft **124** and the slider **134** for engaging with or disengaging from the support bar **132**.

[0071] Referring to FIG. **6**, the resilient element **162** can be disposed inside the shaft **124** and can be connected to the latch **158**. For example, the resilient element **162** can be a spring having two ends respectively connected to the shaft **124** and the latch **158**. The resilient element **162** can apply an elastic force adapted to keep the latch **158** in sliding contact with the interacting surface **170**.

[0072] Referring to FIG. **6**, the shaft **124** can further have an abutting portion **172** in sliding contact with the locking part **146** of the backrest locking mechanism **144**. The abutting portion **172** is exemplarily connected fixedly to the shaft **124** and can rotate along with the shaft **124** about the axis X. As shown in FIG. **9**, the sliding contact between the abutting portion **172** and the locking part **146** can be achieved through a ramp surface **174**, whereby the shaft **124** and the abutting portion **172** are concurrently rotatable about the axis X to urge the locking part **146** to slide toward the unlocking position. As a result, when a caregiver rotates the latch actuator **160** for switching the frame locking mechanism **156** to the unlocking state, the locking part **146** can be concurrently urged by the abutting portion **172** of the latch actuator **160** to slide toward the unlocking position. Accordingly, the backrest locking mechanism **144** can be conveniently unlocked without the need of operating the release actuator **150** thereof, which allows rotation of the backrest frame **122** about the axis X for reducing the volume of the child stroller apparatus **100**.

[0073] According to an example of construction, the latch **158**, the resilient element **162** and the abutting portion **172** described previously can be provided at each of the left and right side of the seat assembly **108**, and the latch actuator **160** is operable to cause the two latches **158** at the left and right side to move concurrently for engaging with or disengaging from the corresponding support bars **132**, and to cause the two locking parts **146** at the left and right side to unlock concurrently.

[0074] Referring to FIGS. **4** and **6**, the child stroller apparatus **100** can further include a safety lock

mechanism **176** configured to prevent accidental unlocking of the latch **158**. The safety lock mechanism **176** can include an impeding part **178**, a resilient element **180** and a releasing part **182**. The impeding part **178** can extend inside the handle **164**, and is movable into the shaft **124** for engaging with the latch **158**. For example, the latch **158** can have an extension **158**A located inside the shaft **124**, and the impeding part **178** can engage with the extension **158**A to prevent the latch **158** from switching from the locking state to the unlocking state. According to an example of construction, the impeding part **178** can be slidably connected to the handle **164** for sliding generally radially relative to the shaft **124**. The resilient element **180** can be respectively connected to the impeding part **178** and the handle **164**, wherein the resilient element **180** is exemplarily a spring. The resilient element **180** can apply an elastic force adapted to urge the impeding part **178** to move for engaging with the latch **158**. The releasing part **182** is assembled with the handle **164** of the latch actuator **160**, and is connected to the impeding part **178**. According to an example of construction, the releasing part **182** may be a push button movable to protrude outward from and retract into the handle **164**. The releasing part **182** is operable to cause the impeding part **178** to move and disengage from the latch **158** so that the latch **158** is allowed to switch from the locking state to the unlocking state.

[0075] In conjunction with FIGS. **1-9**, reference is made hereinafter to FIGS. **10** and **11** to describe a folding operation of the child stroller apparatus **100**. When the child stroller apparatus **100** is in the unfolded state, the slider **134** at each of the left and right side is located adjacent to the location where the support bar **132** pivotally connects to the side segment **104**A of the leg frame **104**, the seat portions **118** and **120** extend generally along a same plane, and the frame locking mechanism **156** is in the locking state so that the child stroller apparatus **100** is locked in the unfolded state. For folding the child stroller apparatus **100**, a caregiver can grasp the handle **164** of the latch actuator **160** with one hand and at the same time press the releasing part **182**, which unlocks the safety lock mechanism **176**. Then the latch actuator **160** is rotated upward, which causes the frame locking mechanism **156** to switch to the unlocking state. The latch actuator **160** is then lifted to urge the slider **134** to slide along the support bar **132** away from the location where the support bar **132** pivotally connects to the side segment **104**A of the leg frame **104**, which causes the seat portions **118** and **120** to fold toward each other, and through the frame link **136** urges the leg frames **102** and **104** and the handle frame **106** to fold, as shown in FIG. **10**.

[0076] Referring to FIGS. **10** and **11**, when the child stroller apparatus **100** is fully folded, the support bar **132** can be folded toward the side segment **104**A of the leg frame **104**, and the slider **134** can be located adjacent to the location where the support bar **132** pivotally connects to the side segment **102**A of the leg frame **102**. According to an embodiment, the side segment **104**A of the leg frame **104** can have a fastener **184** configured to engage with the slider **134** when the child stroller apparatus **100** is in the folded state, which can assist in holding the child stroller apparatus **100** in the folded state. According to an example of construction, the fastener **184** can be fixedly connected to the side segment **104**A of the leg frame **104**, and is configured to elastically deform for engaging with or disengaging from the slider **134**. In conjunction with FIG. **11**, FIG. **12** is a schematic view illustrating the fastener **184** engaged with the slider **134**. Referring to FIGS. **11** and **12**, the fastener **184** may exemplarily engage with the slide coupling portion **134**A of the slider **134** for holding the child stroller apparatus **100** in the folded state. For example, the fastener **184** can have a hook **184**A, and the slide coupling portion **134**A can have a projection **186** adapted to engage with the hook **184**A.

[0077] FIGS. **13-15** are schematic views illustrating another embodiment of the child stroller apparatus **100**. In the child stroller apparatus **100** of FIGS. **13-15**, the seat assembly **108** does not have the seat portions **118** and **120** of the previous embodiment, the remaining structure of the previous embodiment and the operation thereof being identical to the embodiment of FIGS. **13-15**. Referring to FIGS. **13-15**, the seat assembly **108** of the child stroller apparatus **100** includes a softgoods member **190** (shown with phantom lines in FIG. **13**) that is connected to the backrest

frame **122** and is coupled to the side segments **102**A of the leg frame **102**. FIG. **13** illustrates the softgoods member **190** with phantom lines, FIG. **14** is a schematic view illustrating the child stroller apparatus **100** without the softgoods member **190** installed thereon, and FIG. **15** is a schematic view illustrating some construction details of the softgoods member **190**. The softgoods member **190** can include any suitable soft materials, e.g., a fabric material, a flexible pad, and the like. According to an example of construction, the softgoods member **190** can be configured to respectively anchor to the backrest frame **122** and the leg support **131**. For example, the softgoods member **190** can have two ends respectively provided with two pockets **190**A and **190**B, the backrest frame **122** can be at least partially received inside the pocket **190**A so that the softgoods member **190** is anchored to the backrest frame **122** at one end, and the leg support **131** can be at least partially received inside the pocket **190**B so that the softgoods member **190** is anchored to the leg support **131** at the other opposite end. For a secure connection, the softgoods member **190** may further be anchored to the shaft **124** and a transversal bar **196** provided on the leg frame **102**. The transversal bar **196** can extend generally parallel to the shaft **124** from the left side to the right side at a location adjacent to the leg support **131**, and can be fixedly connected to the two side segments **102**A of the leg frame **102**. The softgoods member **190** can be respectively anchored to the shaft **124** and the transversal bar **196** via two strips **198**A and **198**B, wherein each of the strips **198**A and **198**B can be made of a flexible material and can extend at an underside of the softgoods member **190**. The strip **198**A can wrap around the shaft **124** and attach to the softgoods member **190** at two opposite ends of the strip **198**A, whereby the shaft **124** is restricted in position relative to the softgoods member **190**. Likewise, the strip **198**B can wrap around the transversal bar **196** and attach to the softgoods member **190** at two opposite ends of the strip **198**B, whereby the transversal bar **196** is restricted in position relative to the softgoods member **190**. According to an example of construction, the strips **198**A and **198**B may be attached to the softgoods member **190** in a similar way: one of the two opposite ends of each of the strips **198**A and **198**B may be permanently affixed to the softgoods member **190** (e.g., by sewing), and the other one of the two opposite ends of each of the strips **198**A and **198**B may be detachably connected to the softgoods member **190** via one or more fasteners **199** (e.g., snap fasteners, buttons, and the like).

[0078] For coupling the softgoods member **190** to the leg frame **102**, the softgoods member **190** is not necessarily anchored to both the leg support **131** and the transversal bar **196**, and may be anchored to only one of the leg support **131** and the transversal bar **196**. For example, a variant embodiment can omit the leg support **131** and have the softgoods member **190** anchored to only the transversal bar **196** for coupling the softgoods member **190** to the leg frame **102**, or can omit the transversal bar **196** and have the softgoods member **190** anchored to only the leg support **131** for coupling the softgoods member **190** to the leg frame **102**.

[0079] Once the softgoods member **190** is installed, the softgoods member **190** can define a seat portion **194** between the side segments **102**A of the leg frame **102** and the backrest frame **122** (in particular between the transversal bar **196** and the shaft **124**) that is adapted to provide seating support for a child. The softgoods member **190** can further include an opening (not shown) through which a caregiver can access and operate the handle **164**. In the embodiment shown in FIGS. **13-15**, the seat assembly **108** is coupled to the slider **134** at each of the left and right side, and the slider **134** is slidable along the support bar **132** as described previously for folding and unfolding the seat portion **194** defined by the softgoods member **190**, the sliding movement of the slider **134** along the support bar **132** being linked to the folding and unfolding movement of the stroller frame **101** via the frame link **136**.

[0080] According to a variant embodiment, the child stroller apparatus **100** shown in FIGS. **1-12** may further include a softgoods member similar to the softgoods member **190** provided with the two pockets **190**A and **190**B, which can be respectively anchored to the backrest frame **122** and the leg support **131**. For a secure attachment of the softgoods member to the child stroller apparatus **100**, the softgoods member may have flexible strips (not shown) that may be tied around the shaft

124 and/or the leg frame **102**. Alternatively or in addition to the use of flexible strips, the softgoods member may also be attached to the child stroller apparatus **100** through a sewing method. It will be appreciated that the attachment of the softgoods member to the child stroller apparatus **100** is not limited to the aforementioned examples, and other methods may be possible.

[0081] FIGS. **16-30** are various views illustrating another embodiment of the child stroller apparatus **100**. Referring to FIGS. **16-30**, the child stroller apparatus **100** shown therein can have the same stroller frame **101** of the embodiment illustrated in FIGS. **1-5**, which includes the two leg frames **102** and **104**, the handle frame **106**, the seat assembly **108** and the two linkages **110**. Likewise, the seat assembly **108** includes the two seat portions **118** and **120** and the backrest frame **122**, and each of the two linkages **110** includes the support bar **132**, the slider **134** and the frame link **136**. The assembly and operation of the leg frames **102** and **104**, the handle frame **106**, the seat portions **118** and **120**, the backrest frame **122**, the support bars **132**, the sliders **134** and the frame links **136** can be similar to the embodiment of FIGS. **1-5**, wherein each slider **134** can slide along the corresponding support bar **132**, the shaft **124** (better shown in FIG. **24**) is carried with the sliders **134** so as to be slidable along with the sliders **134** along the support bars **132**, the backrest frame **122** is rotatable around the shaft **124** relative to the seat portion **120** and the sliders **134**, and the seat portion **120** is also rotatable around the shaft **124** and the axis X relative to the backrest frame **122** and the sliders **134**. In the embodiment of FIGS. **16-30**, the two opposite ends of the shaft **124** can be respectively connected fixedly to the two sliders **134** so that the shaft **124** is fixed and does not move relative to the sliders **134**. Like in the embodiment of FIGS. **1-5**, relative rotation between the seat portions **118** and **120** is linked to sliding movement of the sliders **134** along the support bars **132** for folding and unfolding of the child stroller apparatus **100**.

[0082] Referring to FIGS. **16-25**, the child stroller apparatus **100** includes the backrest locking mechanism **144** (better shown in FIG. **25**) configured to lock the backrest frame **122** to the slider **134** for preventing rotation of the backrest frame **122** relative to the slider **134**. The backrest locking mechanism **144** can include the locking part **146**, the resilient element **148** and the release actuator **150**, which can be similar in construction and operation to the embodiment of FIGS. **1-6** described previously. Accordingly, the locking part **146** can slide along the shaft **124** and the axis X between the locking position where the locking part **146** engages with the pivot coupling portion **126** of the backrest frame **122** and the pivot coupling portion **134**B of the slider **134** to prevent rotation of the backrest frame **122** relative to the slider **134**, and the unlocking position where the locking part **146** disengages from the pivot coupling portion **126** of the backrest frame **122** for rotation of the backrest frame **122** relative to the slider **134**. The resilient element **148** can apply an elastic force for biasing the locking part **146** toward the locking position. The release actuator **150** is connected to the locking part **146**, and is operable to cause the locking part **146** to slide toward the unlocking position.

[0083] Referring to FIGS. **16-25**, the child stroller apparatus **100** further includes a frame locking mechanism **256**, which substitutes for the frame locking mechanism **156** of the previous embodiment shown in FIGS. **1-8**. The frame locking mechanism **256** has a locking state and an unlocking state, wherein the frame locking mechanism **256** locks the slider **134** to the support bar **132** in the locking state, and allows sliding of the slider **134** along the support bar **132** in the unlocking state. Referring to FIGS. **16-25**, the frame locking mechanism **256** can include a latch **258** movable to lock and unlock the slider **134** with respect to the support bar **132**. According to an example of construction, the latch **258** is at least partially received inside the slider **134**, and is movable relative to the slider **134** to engage with and disengage from the support bar **132**. The latch **258** is engaged with the support bar **132** in the locking state to prevent the slider **134** from sliding relative to the support bar **132**, whereby the child stroller apparatus **100** can be locked in the unfolded state. The latch **258** is disengaged from the support bar **132** in the unlocking state so that the slider **134** can slide along the support bar **132** for folding or unfolding the child stroller apparatus **100**.

[0084] According to an example of construction, the latch **258** is configured to slide relative to the slider **134** for engaging with and disengaging from the support bar **132**. More specifically, the shaft **124** can have a hollow interior, and the latch **258** can have an elongate portion that is disposed to slide along the hollow interior of the shaft **124** inside the slider **134**. For example, the elongate portion of the latch **258** can be slidably connected to the shaft **124**, whereby the latch **258** is slidable along the axis X relative to the shaft **124** and the slider **134** for engaging with and disengaging from the support bar **132**. FIG. **25** shows the latch **258** in the locking state, and FIG. **26** shows the latch **258** in the unlocking state.
[0085] Referring to FIGS. **16** and **21-25**, the frame locking mechanism **256** can further include a resilient element **260** and a latch actuator **262**. The resilient element **260** can be disposed inside the shaft **124**, and can be connected to the latch **258**. According to an example of construction, the resilient element **260** can be a spring having two ends respectively connected to the latch **258** and an anchor structure provided inside the shaft **124**. The resilient element **260** can apply an elastic force adapted to urge the latch **258** to slide for engaging with the support bar **132**.
[0086] The latch actuator **262** is connected to the latch **258**, and is operable to cause the latch **258** to move relative to the slider **134** for disengaging from the support bar **132**. According to an example of construction, the latch actuator **262** and the latch **258** are configured to move in a concurrent manner to cause the latch **258** to engage with and disengage from the support bar **132**, and a caregiver can operate the latch actuator **262** to switch the frame locking mechanism **256** to the unlocking state.
[0087] Referring to FIGS. **16-26**, the latch actuator **262** can be disposed adjacent to the axis X. The latch actuator **262** can extend from an underside of the seat assembly **108** to an upper side of the seat assembly **108**, and is operable to cause the latch **258** to disengage from the support bar **132** and to cause the seat portions **118** and **120** to fold toward each other. The latch actuator **262** can include a driving part **264** and an operating part **266**. According to an example of construction, the latch actuator **262** has at least a portion configured to be rotatable about the axis X. For example, the driving part **264** is connected to the latch **258**, and is rotatable about the axis X for urging the latch **258** to disengage from the support bar **132**. According to an example of construction, the driving part **264** can be pivotally connected about the shaft **124** which extends along the axis X, whereby the driving part **264** is rotatable about the axis X relative to the shaft **124**. For example, the driving part **264** can be a single component part having a hole **264**A, and the shaft **124** can be disposed through the hole **264**A so that the driving part **264** can rotate around the shaft **124**. The driving part **264** is connected to the latch **258** so that a rotation of the driving part **264** about the axis X can urge the latch **258** to slide along the axis X and disengage from the support bar **132**. According to an example of construction, the latch **258** is slidably connected to the driving part **264** so that the latch **258** and the driving part **264** are movably linked to each other, i.e., sliding of the latch **258** along the axis X and rotation of the driving part **264** about the axis X occur concurrently. For example, the driving part **264** can have a guide slot **268**, and a portion of the latch **258** extending inside the shaft **124** can have a pin **270** that protrudes outward through a slot **272** on the shaft **124** and is slidably connected through the guide slot **268** of the driving part **264**. The pin **270** is fixedly connected to the latch **258**, e.g., by fastening the pin **270** to the latch **258** or by having the pin **270** formed integrally with the latch **258** as a single body. The slot **272** of the shaft **124** can be an elongate slot extending generally along the axis X, and the guide slot **268** of the driving part **264** at least partially overlaps with and is tilted an angle relative to the slot **272** of the shaft **124**. According to an example of construction, the guide slot **268** of the driving part **264** can include, without limitation, a helicoidal slot. Through the sliding connection between the guide slot **268** and the pin **270**, a sliding movement of the latch **258** along the axis X in a locking direction (i.e., for engaging with the support bar **132**) corresponds to a rotation of the driving part **264** about the axis X in one direction, and a sliding movement of the latch **258** along the axis X in an unlocking direction (i.e., for disengaging from the support bar **132**) corresponds to a rotation of the driving

part **264** about the axis X in another opposite direction.
[0088] The operating part **266** is connected to the driving part **264**, and is operable to urge the driving part **264** to rotate and cause the latch **258** to disengage from the support bar **132**. According to an example of construction, the operating part **266** can be a flexible strip, which may include, without limitation, an operating strap. As shown in FIGS. **16**-**18**, **20**-**22** and **24**, the operating part **266** can extend through the seat assembly **108** from an underside thereof to an upper side thereof at a location forward of the axis X. For example, the seat portion **120** of the seat assembly **108** can have an opening **274** at a location forward of the axis X, and the operating part **266** can extend from the underside of the seat portion **120** through the opening **274** to the upper side of the seat portion **120**. The operating part **266** is configured so as to provide convenient unlocking and folding operation: a caregiver can pull the operating part **266** upward at the upper side of the seat portion **120** to cause the driving part **264** to rotate and thereby urge the latch **258** to disengage from the support bar **132**, and further lift the child stroller apparatus **100** for its folding. Because the operating part **266** extends along a rear-to-front direction at the underside of the seat assembly **108**, pulling the operating part **266** upward can result in the application of a forward force on the shaft **124**, which can assist in displacing the seat portion **120** and the sliders **134** in the folding direction.
[0089] In conjunction with FIG. **25**, FIG. **27** is a partial cross-sectional view illustrating further construction details of the driving part **264** inside the pivot coupling portion **126** of the backrest frame **122**. Referring to FIGS. **25** and **27**, the driving part **264** can further have an abutting portion **276**, which can be in sliding contact with the locking part **146** of the backrest locking mechanism **144**. The abutting portion **276** may be exemplarily connected fixedly to the driving part **264** at a distal end thereof, whereby the abutting portion **276** is rotatable along with the driving part **264** about the axis X. As shown in FIG. **27**, the sliding contact between the abutting portion **276** and the locking part **146** can be achieved through a ramp surface **278**, whereby the driving part **264** and the abutting portion **276** are concurrently rotatable about the axis X to urge the locking part **146** to slide toward the unlocking position. As a result, when a caregiver operates the latch actuator **262** for switching the frame locking mechanism **256** to the unlocking state, the locking part **146** can be concurrently urged by the abutting portion **276** of the latch actuator **262** to slide toward the unlocking position. Accordingly, the backrest locking mechanism **144** can be conveniently unlocked without the need of operating the release actuator **150** thereof, which allows rotation of the backrest frame **122** about the axis X for reducing the volume of the child stroller apparatus **100**.
[0090] According to an example of construction, the latch **258**, the resilient element **260** and the driving part **264** described previously can be provided at each of the left and right side of the seat assembly **108**, and the operating part **266** can extend transversally at the upper side of the seat portion **120** and connect to the two driving parts **264** at the left and right side of the seat assembly **108**. The operating part **266** is thereby operable to cause the two latches **258** at the left and right side to move concurrently for engaging with or disengaging from the corresponding support bars **132**, and to further urge the two locking parts **146** at the left and right side to concurrently unlock.
[0091] Referring to FIGS. **21**, **22**, **24**-**26**, **28** and **29**, the child stroller apparatus **100** can further include a safety lock mechanism **280** configured to prevent accidental unlocking of the latch **258**. The safety lock mechanism **280** can include an impeding part **282** and a releasing part **284** connected to each other. The impeding part **282** can engage with the driving part **264** to prevent a rotation of the driving part **264** that causes the latch **258** to switch from the locking state to the unlocking state. The releasing part **284** is operable to urge the impeding part **282** to disengage from the driving part **264**, whereby the driving part **264** is allowed to rotate about the axis X for urging the latch **258** to switch from the locking state to the unlocking state. For facilitating the engagement of the impeding part **282** with the driving part **264**, the driving part **264** can have an opening **285**, and the impeding part **282** can engage with the opening **285** to prevent the driving part **264** from rotating about the axis X. According to an example of construction, the impeding part **282** and the releasing part **284** can be assembled with the seat portion **120**, wherein the impeding part **282** can

be disposed adjacent to the driving part **264**, and the releasing part **284** can be exposed on an upper surface of the seat portion **120** for operation by a caregiver. The impeding part **282** and the releasing part **284** are movably connected to the seat portion **120**, e.g., the impeding part **282** can be slidably connected to the seat portion **120**, and the releasing part **284** can be pivotally connected to the seat portion **120**. The impeding part **282** and the releasing part **284** may be connected to each other via a cable. For example, the safety lock mechanism **280** can include a cable **286** and a cable actuator **288**. The cable **286** can have two opposite ends respectively connected to the impeding part **282** and the cable actuator **288**, and the cable actuator **288** can be disposed adjacent to the releasing part **284**. As shown in FIGS. **26** and **29**, the releasing part **284** can be pressed to urge the cable actuator **288** to move and pull the impeding part **282** through the cable **286**, which causes the impeding part **282** to disengage from the driving part **264**. The driving part **264** is thereby allowed to rotate about the axis X for urging the latch **258** to switch from the locking state to the unlocking state.

[0092] The impeding part **282** can further be connected to a resilient element **290**. When no external force is applied on the releasing part **284**, the resilient element **290** can apply an elastic force that assists the impeding part **282** in recovering an engagement state with respect to the driving part **264**. The releasing part **284** can also be connected to another resilient element **292**, which can apply an elastic force adapted to assist the releasing part **284** in recovering an initial position when no external force is applied on the releasing part **284**.

[0093] Reference is made hereinafter to FIGS. **16-30** for describing a folding operation of the child stroller apparatus **100**. Referring to FIGS. **16-25**, when the child stroller apparatus **100** is in the unfolded state, the slider **134** is located adjacent to the location where the support bar **132** pivotally connects to the side segment **104**A of the leg frame **104**, the seat portions **118** and **120** extend generally along a same plane, and the frame locking mechanism **256** is in the locking state so that the child stroller apparatus **100** can be locked in the unfolded state.

[0094] For folding the child stroller apparatus **100**, a caregiver can press the releasing part **284** for unlocking the safety lock mechanism **280**. Then the operating part **266** can be manually grasped and pulled upward to switch the frame locking mechanism **256** to the unlocking state. The pulling action applied through the operating part **266** can also pull the shaft **124** and the sliders **134** forward, which causes each slider **134** to slide along the corresponding support bar **132** away from the location where the support bar **132** pivotally connects to the side segment **104**A of the leg frame **104**. As a result, the seat portions **118** and **120** can fold toward each other, and the leg frames **102** and **104** and the handle frame **106** can be urged to move and fold through the coupling of the frame link **136** to the slider **134** at each of the left and right side, as shown in FIG. **30**. When the child stroller apparatus **100** is fully folded, the support bar **132** can be folded toward the side segment **104**A of the leg frame **104**, and the slider **134** can be located adjacent to the location where the support bar **132** pivotally connects to the side segment **102**A of the leg frame **102**. The child stroller apparatus **100** may also be provided with the fastener **184** illustrated in FIG. **12**, which can engage with the slider **134** for holding the child stroller apparatus **100** in the folded state.

[0095] FIGS. **31-41** illustrate a variant embodiment of the child stroller apparatus **100** shown in FIGS. **16-30**. Referring to FIGS. **31-41**, the child stroller apparatus **100** shown therein can generally have the same stroller frame **101** described previously, which includes the two leg frames **102** and **104**, the handle frame **106**, the seat assembly **108** and the two linkages **110**. Likewise, the seat assembly **108** includes the two seat portions **118** and **120** and the backrest frame **122**, and each of the two linkages **110** includes the support bar **132**, the slider **134** and the frame link **136**. The seat portion **118** can include two bar segments **310** at the left and right side, and the seat portion **120** can also include two bar segments **312** at the left and right side that are respectively connected pivotally to the two bar segments **310** via two articulations **128**. The two bar segments **310** of the seat portion **118** can be respectively connected pivotally to the two side segments **102**A of the leg frame **102** via two articulations **130**, and the two bar segments **312** of the seat portion **120** can be

pivotally connected to the shaft **124** via a bracket **314**. Moreover, the seat portions **118** and **120** may further include other elements, e.g., seat pans or softgoods elements (not shown), which can be connected to the bar segments **310** and **312** so that the seat portions **118** and **120** can provide seating support for a child. The assembly and operation of the leg frames **102** and **104**, the handle frame **106**, the seat portions **118** and **120**, the backrest frame **122**, the support bars **132**, the sliders **134** and the frame links **136** can be similar to the embodiments of FIGS. **1-5** and **16-30**, wherein relative rotation between the seat portions **118** and **120** is linked to sliding movements of the slider **134** along the support bar **132** at each of the left and right side for folding and unfolding of the child stroller apparatus **100**. Like in the previous embodiment, the child stroller apparatus **100** of FIGS. **31-41** can be provided with the latch actuator **262** including the driving part **264** and the operating part **266**, which is operable to cause the frame locking mechanism **256** (better shown in FIGS. **25-27**) to switch to the unlocking state for folding of the child stroller apparatus **100**.

[0096] Referring to FIGS. **31-38**, the child stroller apparatus **100** can further include a safety lock mechanism **302**, which is operable independently of the frame locking mechanism **256** (better shown in FIGS. **25-27**), and is configured to prevent accidental folding of the seat portions **118** and **120**. The safety lock mechanism **302** includes a lock **304**, and has a locking state and an unlocking state. The lock **304** creates an obstacle on a travel path of the seat portions **118** and **120** in the locking state that prevents relative rotation between the seat portions **118** and **120** from the unfolded state toward the folded state, and removes the obstacle in the unlocking state to allow relative rotation between the seat portions **118** and **120** from the unfolded state toward the folded state. According to an example of construction, the lock **304** can be movably assembled with the seat portion **120** adjacent to the articulation **128**, and is movable to engage with and disengage from the seat portion **118**. For example, while the seat portions **118** and **120** are in the unfolded state, the lock **304** can engage with a recess **306** provided in the seat portion **118** to prevent relative rotation between the seat portions **118** and **120** toward the folded state. The safety lock mechanism **302** can be switched to the unlocking state by disengaging the lock **304** from the recess **306** of the seat portion **118**, which allows relative rotation between the seat portions **118** and **120** from the unfolded state toward the folded state.

[0097] Referring to FIGS. **31-38**, the recess **306** may be exemplarily provided on each of the two bar segments **310** of the seat portion **118**. The lock **304** can be movably disposed in a hollow interior of one of the two bar segments **312** adjacent to the articulation **128**, and is movable to protrude outside the bar segment **312** or retract toward the interior of the bar segment **312**.

[0098] The safety lock mechanism **302** can further include a resilient element **320** connected to the lock **304**. The resilient element **320** is disposed inside the bar segment **312** that carries the lock **304**, and is respectively connected to the lock **304** and an inner sidewall of the bar segment **312**. According to an example of construction, the lock **304** can have a cavity **304**A, and the resilient element **320** can include a spring extending into the cavity **304**A, two ends of the spring being respectively connected to an inner sidewall of the cavity **304**A and the inner sidewall of the bar segment **312**. The resilient element **320** can apply an elastic force that biases the lock **304** to move and protrude outside the bar segment **312** for engaging with the recess **306** of the bar segment **310**.

[0099] It will be appreciated that the assembly of the lock **304** and the resilient element **320** is not limited to the aforementioned example. Alternatively, the lock **304** and the resilient element **320** may be disposed in the bar segment **310**, the lock **304** being movable to engage with and disengaging from a recess provided on the bar segment **312** for locking and unlocking of the safety lock mechanism **302**.

[0100] To facilitate the unlocking operation of the lock **304**, the safety lock mechanism **302** can further include a release actuator **322** and a linking part **324**. The release actuator **322** can be exemplarily carried with the seat portion **118**, and can be connected to the lock **304** via the linking part **324**. According to an example of construction, the seat portion **118** can include a resilient wire assembly **326** having two ends respectively affixed to the two bar segments **310**, and the release

actuator **322** can be disposed on the resilient wire assembly **326**. The resilient wire assembly **326** is adapted to provide seating support, and can elastically move upward and downward. The release actuator **322** can be disposed at any suitable locations on the resilient wire assembly **326**. For example, a central region of the resilient wire assembly **326** can be provided with a housing **328** fixedly connected thereto, and the release actuator **322** can include a button pivotally connected to the housing **328**. According to other examples of construction, the release actuator **322** may be an element slidably connected and/or pivotally connected to to the housing **328**. The linking part **324** can include a cable having an end **324**A connected to the release actuator **322** and another end **324**B connected to the lock **304**. Accordingly, the release actuator **322** is operable to urge the lock **304** to move through the linking part **324**, which causes the lock **304** to disengage from the recess **306** of the bar segment **310**. According to an example of construction, the same assembly of the lock **304** and the resilient element **320** can be provided in each of the two bar segments **312** (or bar segments **310**), and the release actuator **322** can be respectively connected to the two locks **304** via two linking parts **324**.

[0101] Referring to FIGS. **37** and **38**, the release actuator **322** can be connected to a resilient element **330** (e.g., a spring), which is disposed inside the housing **328**. The resilient element **330** applies an elastic force that can bias the release actuator **322** toward an initial position. A caregiver can push the release actuator **322** to cause the lock **304** to disengage from the recess **306** of the bar segment **310**, which switches the safety lock mechanism **302** to the unlocking state. When the caregiver releases the release actuator **322**, the release actuator **322** can recover its initial position under the biasing action of the resilient element **330**.

[0102] In conjunction with FIGS. **31-38**, FIGS. **39-41** illustrate exemplary folding of the child stroller apparatus **100**. For folding the child stroller apparatus **100**, a caregiver can respectively operate the release actuator **322** of the safety lock mechanism **302** and the latch actuator **262** of the frame locking mechanism, whereby the seat portions **118** and **120** are allowed to rotate toward the folded state and the slider **134** at each of the left and right side is allowed to slide along the corresponding support bar **132**. Then the child stroller apparatus **100** can be lifted above a floor with the latch actuator **262**, which causes folding of the child stroller apparatus **100** as shown in FIGS. **39-41**. Once the child stroller apparatus **100** is fully folded, the leg frame **102** and the handle frame **106** can be respectively folded to generally lie at two opposite sides of the leg frame **104**.

[0103] Because the safety lock mechanism **302** is a separate mechanism that is independently operated, the safety lock mechanism **302** is limited to any specific construction of the frame locking mechanism. For example, the child stroller apparatus **100** can include the safety lock mechanism **302** in combination with any of the frame locking mechanism **156** and **256** described previously. According some variant embodiments, the child stroller apparatus **100** may omit the frame locking mechanism **156** and **256** and can be locked in the unfolded state with the safety lock mechanism **302**, i.e., the safety lock mechanism **302** can serve as a frame locking mechanism.

[0104] Referring to FIGS. **34** and **36**, a stop **332** may further be provided to prevent excessive rotation of the seat portions **118** and **120** in the unfolding direction. The stop **332** and the lock **304** may be disposed at two opposite sides of the articulation **128**. According to an example of construction, the stop **332** may be fixedly connected to the bar segment **312**. The stop **332** can abut against an underside of the bar segment **310** when the seat portions **118** and **120** are in the unfolded state, and can be displaced away from the bar segment **310** when the seat portions **118** and **120** are folded. For facilitating the abutment of the stop **332**, the bar segment **310** can have a recessed portion **334** facing downward, and the stop **332** can engage with the recessed portion **334** when the seat portions **118** and **120** are unfolded. It will be appreciated that the stop **332** and the recessed portion **334** may be interchanged in position, i.e., the stop **332** may be disposed on the bar segment **310** and the recessed portion **334** may be provided on the bar segment **312**.

[0105] Advantages of the child stroller apparatus described herein include the ability to smoothly fold and unfold the stroller frame in a safe way, and allow convenient folding with a single hand.

[0106] Realizations of the structures have been described only in the context of particular embodiments. These embodiments are meant to be illustrative and not limiting. Many variations, modifications, additions, and improvements are possible. Accordingly, plural instances may be provided for components described herein as a single instance. Structures and functionality presented as discrete components in the exemplary configurations may be implemented as a combined structure or component. These and other variations, modifications, additions, and improvements may fall within the scope of the claims that follow.

Claims

1-51. (canceled)

52. A child stroller apparatus comprising: a first leg frame and a second leg frame, the first leg frame including a first side segment, the second leg frame including a second side segment; a handle frame including a third side segment respectively connected pivotally to the first side segment and the second side segment, wherein the third side segment is pivotally connected to the first side segment via an articulation; a seat assembly coupled to the first side segment; and a linkage including a support bar, a slider and a frame link, wherein the support bar is respectively connected pivotally to the first side segment and the second side segment, the slider is coupled to the seat assembly and is slidably connected to the support bar, and the frame link is pivotally connected to the slider, the slider sliding along the support bar during folding and unfolding of the child stroller apparatus.

53. The child stroller apparatus according to claim 52, wherein the slider slides toward a location where the support bar pivotally connects to the first side segment during folding of the child stroller apparatus, and slides toward a location where the support bar pivotally connects to the second side segment during unfolding of the child stroller apparatus.

54. The child stroller apparatus according to claim 52, wherein the frame link is respectively connected pivotally to the slider and the articulation.

55. The child stroller apparatus according to claim 52, further comprising a frame locking mechanism having a locking state and an unlocking state, wherein the frame locking mechanism locks the slider to the support bar in the locking state and allows sliding of the slider along the support bar in the unlocking state.

56. The child stroller apparatus according to claim 55, wherein the frame locking mechanism includes a latch that is at least partially received inside the slider, the latch being movable relative to the slider to engage with or disengage from the support bar, the latch being engaged with the support bar in the locking state and disengaged from the support bar in the unlocking state.

57. The child stroller apparatus according to claim 56, wherein the frame locking mechanism further includes a latch actuator connected to the latch, the latch actuator being operable to cause the latch to move relative to the slider for disengaging from the support bar.

58. The child stroller apparatus according to claim 56, wherein the seat assembly is pivotally connected to the slider about an axis so that the seat assembly is rotatable about the axis relative to the slider, and the latch is slidable along the axis relative to the slider for engaging with and disengaging from the support bar.

59. The child stroller apparatus according to claim 58, wherein the seat assembly is pivotally connected to the slider via a shaft extending along the axis, the shaft being carried with the slider, the latch being slidable along the shaft relative to the slider for engaging with and disengaging from the support bar.

60. The child stroller apparatus according to claim 59, wherein the frame locking mechanism further includes a latch actuator connected to the latch, the latch actuator having at least a portion configured to be rotatable about the axis, the latch actuator being operable to cause the latch to slide relative to the slider for disengaging from the support bar.

61. The child stroller apparatus according to claim 60, wherein the latch is slidably connected to the latch actuator and is rotatable along with the latch actuator about the axis, the latch being in sliding contact with an interacting surface of the slider, whereby a rotation of the latch actuator about the axis causes the latch to slide along the axis.
62. The child stroller apparatus according to claim 60, wherein the latch actuator includes the shaft and a handle fixedly connected to the shaft, the shaft being rotatable about the axis relative to the slider, the latch being slidable along a hollow interior of the shaft.
63. The child stroller apparatus according to claim 62, further comprising a safety lock mechanism including a releasing part and an impeding part connected to each other, the releasing part being assembled with the handle, the impeding part being movable through the shaft to engage with the latch to prevent the latch from switching from the locking state to the unlocking state, and the releasing part being operable to cause the impeding part to disengage from the latch so that the latch is allowed to switch from the locking state to the unlocking state.
64. The child stroller apparatus according to claim 60, wherein the latch actuator includes an operating part configured as a flexible strip, the operating part extending through the seat assembly from an underside thereof to an upper side thereof at a location forward of the axis.
65. The child stroller apparatus according to claim 64, wherein the latch is slidable along a hollow interior of the shaft, and the latch actuator further includes a driving part respectively connected to the latch and the operating part, the driving part being rotatable around the shaft for urging the latch to disengage from the support bar.
66. The child stroller apparatus according to claim 65, wherein the driving part has a guide slot, the latch has a pin, and the pin extends through a slot on the shaft and is slidably connected with the guide slot of the driving part.
67. A child stroller apparatus comprising: a first leg frame and a second leg frame, the first leg frame including a first side segment, the second leg frame including a second side segment; a handle frame including a third side segment respectively connected pivotally to the first side segment and the second side segment, wherein the third side segment is pivotally connected to the first side segment via an articulation; a seat assembly coupled to the first side segment; and a linkage including a support bar, a slider and a frame link, wherein the support bar is respectively connected pivotally to the first side segment and the second side segment, the slider is coupled to the seat assembly and is slidably connected to the support bar, and the frame link is pivotally connected to the slider, the slider sliding along the support bar during folding and unfolding of the child stroller apparatus; wherein the seat assembly includes a backrest frame, and a first seat portion and a second seat portion pivotally connected to each other, the first seat portion being pivotally connected to the first side segment, and the backrest frame, the second seat portion and the slider being pivotally connected to one another about a same axis.
68. The child stroller apparatus according to claim 67, wherein: the slider has a slide coupling portion and a first pivot coupling portion fixedly connected to each other, the backrest frame is fixedly connected to a second pivot coupling portion, the support bar being slidably connected to the slider through the slide coupling portion, and the first pivot coupling portion being pivotally connected to the second pivot coupling portion so that the backrest frame is rotatable about the axis relative to the slider; the seat assembly is pivotally connected about a shaft that is carried with the slider, extends along the axis and passes through the second pivot coupling portion; and the child stroller apparatus further comprises a backrest locking mechanism configured to lock the backrest frame to the slider, wherein the backrest locking mechanism includes a locking part slidably connected to the shaft so that the locking part is slidable along the shaft between a locking position and an unlocking position, the locking part being engaged with the first pivot coupling portion and the second pivot coupling portion in the locking position for preventing the backrest frame from rotating relative to the slider, and the locking part being disengaged from one of the first pivot coupling portion and the second pivot coupling portion in the unlocking position for rotation of the

backrest frame relative to the slider.

69. The child stroller apparatus according to claim 68, wherein the shaft has an abutting portion in sliding contact with the locking part, the shaft and the abutting portion being concurrently rotatable about the axis to urge the locking part to slide toward the unlocking position.

70. The child stroller apparatus according to claim 67, wherein: the slider has a slide coupling portion and a first pivot coupling portion fixedly connected to each other, the backrest frame is fixedly connected to a second pivot coupling portion, the support bar being slidably connected to the slider through the slide coupling portion, and the first pivot coupling portion being pivotally connected to the second pivot coupling portion so that the backrest frame is rotatable about the axis relative to the slider; the seat assembly is pivotally connected about a shaft that is carried with the slider, extends along the axis and passes through the second pivot coupling portion; and the child stroller apparatus further comprises a frame locking mechanism having a locking state that locks the slider to the support bar and an unlocking state that allows sliding of the slider along the support bar, wherein the frame locking mechanism includes a latch that is at least partially received inside the slider and is movable relative to the shaft, and a latch actuator connected to the latch, the latch being engaged with the support bar in the locking state and disengaged from the support bar in the unlocking state, the latch actuator being operable to cause the latch to move for disengaging from the support bar, the latch actuator having at least a portion configured to be rotatable about the axis; wherein the latch actuator includes a driving part connected to the latch, the driving part being rotatable around the shaft for urging the latch to disengage from the support bar.

71. The child stroller apparatus according to claim 67, wherein the second seat portion is pivotally connected to the slider, and relative rotation between the first seat portion and the second seat portion is linked to sliding of the slider along the support bar.