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JUVENILE SEAT

Abstract

A juvenile seat includes a seat chassis having a seat-bottom base, a seat-back base, and a body frame. The seat-bottom base is adapted to rest on a vehicle seat. The seat-back base is coupled to the seat-bottom base and is arranged to extend upwardly away from the seat-bottom base. The body frame is coupled to both the seat-bottom base and the seat-back base to provide side bolsters and wings for the juvenile seat. The juvenile seat further includes a seat suspension.

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Background/Summary

PRIORITY CLAIM [0001] This application is a continuation of U.S. patent application Ser. No. 17/970,064, filed Oct. 20, 2022, which claims priority under 35 U.S.C. § 119 (e) to U.S. Provisional Application Ser. No. 63/270,307, filed Oct. 21, 2021, each of which is expressly incorporated by reference herein.

BACKGROUND

[0002] The present disclosure relates to a child restraint, and particularly to a juvenile seat. More particularly, the present disclosure relates to a juvenile seat that is configured to be secured to a vehicle seat for transportation in a vehicle.

SUMMARY

[0003] According to the present disclosure, a juvenile seat includes a seat chassis having a seat-bottom base, a seat-back base, and a body frame. The seat-bottom base is adapted to rest on a vehicle seat. The seat-back base is coupled to the seat-bottom base and is arranged to extend upwardly away from the seat-bottom base. The body frame is coupled to both the seat-bottom base and the seat-back base to provide side bolsters and wings for the juvenile seat.

[0004] In illustrative embodiments, the juvenile seat further includes a seat suspension configured to support a child on the juvenile seat in spaced apart relation to the seat chassis. The seat suspension is configured to increase comfort and breathability for the child while the seat chassis protects the child from impact events.

[0005] In illustrative embodiments, the seat suspension includes a seat bottom web and a seat back web. The seat bottom web is coupled to the body frame and is at least partially spaced apart from the seat-bottom base to support a child above and spaced apart from the seat-bottom base. The seat back web is coupled to the body frame and is at least partially spaced apart from the seat-back base to support the child in front of and spaced apart from the seat-back base.

[0006] In illustrative embodiments, the seat suspension may further include a mesh sheet that is arranged to overlie and is spaced apart from the seat bottom web and the seat back web. Together, the seat bottom web, the seat back web, and the mesh sheet provide two-stage load resistance during impact events. In some embodiments, the mesh sheet may be used without the seat bottom web and the seat back web. In some embodiments, the seat bottom web and the seat back web may be used without the mesh sheet.

[0007] Additional features of the present disclosure will become apparent to those skilled in the art upon consideration of illustrative embodiments exemplifying the best mode of carrying out the disclosure as presently perceived.

Description

BRIEF DESCRIPTIONS OF THE DRAWINGS

[0008] The detailed description particularly refers to the accompanying figures in which:

[0009] FIG. **1** is a perspective and diagrammatic view of a juvenile seat, in accordance with the present disclosure, including a seat chassis configured to rest on a vehicle seat and be secured to the vehicle seat and a seat suspension coupled to the seat chassis and configured to support an occupant of the juvenile seat in spaced apart relation to the seat chassis while increasing breathability and comfort for the occupant;

[0010] FIG. **2** is a perspective view of a portion of the juvenile seat from FIG. **1** with a portion of the seat suspension cut away to show that the seat suspension includes a seat bottom web, a seat back web, and a mesh sheet arranged to overlie the seat bottom web and the seat back web and configured to support the occupant of the juvenile seat while having a structure that is air permeable to increase breathability and comfort for the occupant;

[0011] FIG. **3** is an exploded assembly view of the juvenile seat from FIGS. **1** and **2** showing, from

left to right, the mesh sheet, the seat bottom web and seat back web, and the seat chassis;
[0012] FIG. **4** is a sectional view taken along line **4**-**4** of FIG. **2** showing that the mesh sheet is spaced apart from the seat bottom web prior to any load acting on the mesh sheet and showing that the seat bottom web is at least partially spaced apart from a seat-bottom base included in the seat chassis to provide load resistance that blocks the occupant from contacting the seat chassis when the occupant imparts a load on the seat suspension as suggested in FIG. **5**;
[0013] FIG. **5** is a view similar to FIG. **4** showing a load applied to the mesh sheet to cause the mesh sheet to deform relative to the seat chassis and the seat bottom web and suggesting that the seat bottom web is also deformable in response to the occupant imparting a load on the seat suspension;
[0014] FIG. **6** is a sectional view taken along line **6**-**6** in FIG. **1** showing that the mesh sheet is spaced apart from both the seat-bottom web and the seat-back web to provide load resistance in both a seat bottom region of the juvenile seat and a seat back region of the juvenile seat;
[0015] FIG. **7** is an enlarged portion of the juvenile seat of FIG. **6** showing the mesh sheet spaced apart from the seat back web prior any load acting on the mesh sheet;
[0016] FIG. **8** is a view similar to FIG. **7** showing a first load applied on the mesh sheet to cause the mesh sheet to deform toward the seat back web so that the occupant is supported by both the mesh sheet and the seat back web;
[0017] FIG. **9** is a view similar to FIG. **8** showing a second load, greater than the first load, applied to the mesh sheet to cause the mesh sheet and the seat back web to deform relative to a seat-back base included in the seat chassis;
[0018] FIG. **10** is a front elevation view of the juvenile seat with the mesh sheet removed showing that the juvenile seat further includes a headrest that is movable between a raised position, as shown in FIG. **10**, and a lowered position, as shown in FIG. **11** and showing that the headrest cooperates with the seat back web in both the raised position and the lowered position to support an occupant; and
[0019] FIG. **11** is a front elevation view of the juvenile seat showing the headrest in the lowered position in which a greater portion of the headrest overlaps with the seat back web.

DETAILED DESCRIPTION

[0020] A juvenile seat **10** is adapted to be secured to a vehicle seat **11** for transportation in a vehicle as suggested in FIGS. **1** and **2**. The juvenile seat **10** is formed to include a child-receiving space **12** and includes a child restraint harness **14** that is configured to secure a child to the juvenile seat **10** within the child-receiving space **12**. The juvenile seat **10** is configured to maximize comfort for the child by increasing breathability for the child without sacrificing structural integrity for the child's safety.
[0021] The juvenile seat **10** in the illustrative embodiment includes a seat chassis **16** and a seat suspension **18** coupled to the seat chassis **16** as shown in FIGS. **1** and **2**. The seat chassis **16** is configured to be secured to the vehicle seat **11** and is configured to provide structural rigidity for the juvenile seat **10**. The seat suspension **18** is not rigid and is configured to support the child in spaced apart relation to the seat chassis **16** to increase comfort for the child seated in the child-receiving space **12**.
[0022] The seat chassis **16** includes a seat-bottom base **20**, a seat-back base **22** coupled to the seat-bottom base **20**, and a body frame **24** coupled to both the seat-bottom base **20** and the seat-back base **22** as shown in FIGS. **2** and **3**. The seat-bottom base **20** and the seat-back base **22** are each adapted to rest on the vehicle seat **11**. The seat back-base **22** is arranged to extend upwardly away from the seat-bottom base **20**. The body frame **24** extends away from each of the seat-bottom base **20** and the seat-back base **22** along lateral sides **26**, **28** of the juvenile seat **10**.
[0023] The body frame **24** includes a bottom frame foundation **30** coupled to the seat-bottom base **20**, a back frame foundation **32** coupled to the seat-back base **22**, and a pair of frame side wings **34**, **36** as shown in FIGS. **1**-**3**. The bottom frame foundation **30** couples the side wings **34**, **36** to the

seat-bottom base **20**. The back frame foundation **32** couples the side wings **34**, **36** to the seat-back base **22**. Each of the side wings **34**, **36** extends away from the bottom frame foundation **30** and the back frame foundation **32** on opposing sides of the bottom frame foundation **30** and the back frame foundation **32**.

[0024] The seat-bottom base **20** is formed to include a bottom aperture **25** and the seat-back base **22** is formed to include a back aperture **27** to minimize an amount of material used in forming the seat chassis **16** as shown FIG. **3**. The seat suspension **18** is configured to overlie at least a portion of each of the apertures **25**, **27** to block the child from passing therethrough. In the illustrative embodiment, the back aperture **27** has a height greater than half of a height of the juvenile seat **10**.

[0025] Each of the frame side wings **34**, **36** includes a side rail **90**, **92** and a medial link **96**, **98** as shown in FIG. **3**. Each side rail **90**, **92** has a first end **91**, **93** coupled to a forward end of the bottom frame foundation **30** and a second end **95**, **97** coupled to a top end of the back frame foundation **32**. Each medial link **96**, **98** extends between and interconnects a corresponding side rail **90**, **92** and at least one of the bottom frame foundation **30** and the back frame foundation **32** between the first and second ends **91**, **93**, **95**, **97**. Side apertures **31**, **33**, **35**, **37** are formed in each side rail **34**, **36** to minimize the amount of material needed to form the seat chassis **16**. Each aperture **31**, **33**, **35**, **37** may be filled with a lightweight material such as foam or covered with portions of the seat suspension **18**.

[0026] The seat chassis **16** is made from a rigid material such as a metal and/or a rigid plastic so that the seat chassis **16** is able to withstand high loads during an impact, for example. In one example, the seat chassis has a generally fixed shape during normal use so that rigidity of the seat chassis is maximized. The seat suspension **18** is made from flexible, air permeable materials to increase comfort for the child seated on the juvenile seat **10**. The seat suspension **18** includes a seat bottom web **40**, a seat back web **42**, and a mesh sheet **44** that overlies the seat bottom web **40** and the seat back web **42**. The seat bottom web **40** is coupled to the bottom frame foundation **30**. The seat back web **42** is coupled to the back frame foundation **32**. The mesh sheet **44** is coupled to the bottom frame foundation **30** and to the back frame foundation **32** and is spaced apart from the seat-bottom base **20** and the seat-back base **22** to support the child in spaced apart relation to the seat-bottom base **20** and the seat-back base **22**.

[0027] In some embodiments, the mesh sheet **44** may be omitted such that only the seat bottom web **40** and the seat back web **42** are used to support the child. In some embodiments, the seat bottom web **40** and the seat back web **42** may be omitted such that only the mesh sheet **44** is used to support the child. In some embodiments, a seat pad **41** is applied over the seat bottom web **40** and the seat back web **42** and the mesh sheet **44** is omitted. The seat pad **41** may be made of foam, softgoods, trim material, and/or another suitable cushioning material. In some embodiments, a foam layer **43** is located beneath the seat bottom web **40** and behind the seat back web **42** and the mesh sheet **44** is omitted. In some embodiments, the foam layer **43** is located beneath and behind the mesh sheet **44** and the seat bottom web **40** and the seat back web **42** are omitted. The foam layer **43** may still be spaced apart from the mesh sheet **44** and/or the seat bottom web **40** and seat back web **42**.

[0028] The mesh sheet **44** is also spaced apart from the seat bottom web **40** and the seat back web **42** as shown in FIGS. **4**-**9**. The seat bottom web **40**, the seat back web **42**, and the mesh sheet **44** are free to move relative to one another and relative to the seat chassis in response to loads acting on the seat suspension **18** by the child.

[0029] In some embodiments, a first empty space **50** is established between the mesh sheet **44** and the seat bottom web **40** and a second empty space **52** is established between the seat bottom web **40** and the seat-bottom base **20** as shown in FIGS. **4** and **5**. The mesh sheet **44** may at least partially close the first empty space **50** in response to a first load **100** acting on the mesh sheet **44**. The mesh sheet **44** is attached to an upper end **30**U of the bottom frame foundation **30** and is under tension between lateral ends **26**, **28**. The first load **100** is configured to deform the mesh sheet **44** and

causes the first empty space **50** to decrease as the mesh sheet **44** stretches and moves toward the seat bottom web **40**. Empty spaces are also established on each side of the seat back web **42**.
[0030] During an impact event, a second load **102**, greater than the first load **100**, may be applied to the seat suspension **18** thereby causing the mesh sheet **44** and the seat bottom web **40** to stretch toward the seat-bottom base **20** as suggested in FIG. **5**. Thus, the seat suspension **18** is configured to provide two-stage load resistance for the child in a seat bottom area of the juvenile seat **10**. The two-stage load resistance includes a first-stage support provided by the mesh sheet **44** in response to the first load **100** acting on the seat suspension **18**. With the first-stage support, only the mesh sheet **44** deforms relative to the seat chassis **16**. The two-stage load resistance is followed by a second-stage support provided by both the mesh sheet **44** and the seat bottom web **40** in response to the second load **102** acting on the seat suspension **18**. With the second-stage support, the mesh sheet **44** and the seat bottom web **40** deform relative to the seat chassis **16** together in response to the second load **102**.
[0031] The seat back web **42** also cooperates with the mesh sheet **44** to provide two-stage load resistance in portions of a seat back area of the juvenile seat **10** as shown in FIGS. **6**-**9**. The two-stage load resistance includes a first-stage support provided by the mesh sheet **44** in response to a first load **104** acting on the seat suspension **18** as shown in FIGS. **7** and **8**. With the first-stage support, only the mesh sheet **44** deforms relative to the seat chassis **16**. The two-stage load resistance is followed by a second-stage support provided by both the mesh sheet **44** and the seat back web **42** in response to a second load **106**, greater than the first load **104**, acting on the seat suspension **18** as shown in FIG. **9**. With the second-stage support, the mesh sheet **44** and the seat back web **42** deform relative to the seat chassis **16** together in response to the second load **106**.
[0032] In the illustrative embodiment, the mesh sheet **44** may have an elasticity that limits stretching of the mesh sheet **44** all the way to the seat bottom web **40** under normal seating conditions when the child is seated on the juvenile seat **10** (i.e. before impact events). In this instance, the mesh sheet **44** is configured to support the full weight of the child without the seat bottom web **40** until an impact event occurs. In some embodiments, the mesh sheet **44** may configured to support substantially all of the weight of the child under normal seating conditions and the seat bottom web **40** may support a portion of the child's weight.
[0033] The mesh sheet **44** may have a first tensile strength while the seat bottom web **40** and the seat back web **42** each have a second tensile strength greater than the first tensile strength to provide greater support than the mesh sheet **44** during impact events. The seat suspension **18** may have a cumulative tensile strength sufficient to block deformation of the seat suspension **18** all the way to the seat-bottom base **20**. Similarly, the mesh sheet **44** may have a first elasticity while the seat bottom web **40** and the seat back web **42** each have a second elasticity less than the first elasticity. These properties provide a more comfortable seating surface for the child via the mesh sheet **44** while providing for increased safety and support via the seat bottom web **40** and the seat back web **42**.
[0034] The mesh sheet **44** is made from a flexible material and includes a plurality of woven or knitted strands or fibers that cooperate to provide a plurality of openings **46** that allow air to pass through the mesh sheet **44**. Because of the plurality of openings **46**, the mesh sheet **44** increases breathability of the juvenile seat **10** by allowing air to pass through the mesh sheet **44** and through empty spaces **50**, **52**. Each of the fibers may include cotton, nylon, polyester, any other suitable type of fiber, or a combination thereof. The fibers may be woven or knitted in any suitable arrangement including a plain weave, a twill weave, a plain dutch weave, twill dutch weave, a spiral weave, a satin weave, a basket weave, a leno weave, a warp knit weave, or any other suitable weave or knitting.
[0035] The seat bottom web **40** and the seat back web **42** are each formed from the same materials and include a plurality of strips **60**, **62**, **66**, **68** as shown in FIGS. **1**-**3**. Each of the plurality of strips **60**, **62**, **66**, **68** may include a plurality of woven strands or fibers like the mesh sheet **44** except that

the plurality of strips **60**, **62**, **66**, **68** are more tightly woven and/or include a different weave than the mesh sheet **44**. Each of the fibers may include cotton, nylon, polyester, any other suitable type of fiber, or a combination thereof. The fibers of the strips **60**, **62**, **66**, **68** may be woven or knitted in any suitable arrangement including a plain weave, a twill weave, a plain dutch weave, twill dutch weave, a spiral weave, a satin weave, a basket weave, a leno weave, a warp knit weave, or any other suitable weave or knitting. The plurality of strips **60**, **62**, **66**, **68** are woven such that there are no openings formed therein. However, the plurality of strips **60**, **62**, **66**, **68** are arranged in a grid to provide openings between each strip **60**, **62**, **66**, **68** which allows for air and other components, such as harness straps, to pass therebetween. The harness straps of child restraint harness **14** are fixed to portions of the seat chassis **16** to form a secure connection to the juvenile seat **10** so that, after bypassing the non-structural, seat suspension **18**, the harness **14** is fixed to a structural component.

[0036] The seat bottom web **40** is attached to at least one of the seat-bottom base **20** and the bottom frame foundation **30** and is positioned below the mesh sheet **44** as shown in FIGS. **4** and **5**. The seat bottom web **40** includes a plurality of laterally-extending strips **60** and a plurality of longitudinally-extending strips **62**. Each of the laterally-extending strips **60** and the longitudinally-extending strips may be under tension prior to any load acting on them. The plurality of laterally-extending strips **60** are coupled to the bottom frame foundation **30** and spaced apart from one another. The plurality of longitudinally-extending strips **62** are coupled to the seat-bottom base **20** and are spaced apart from one another. The plurality of longitudinally-extending strips **62** cross and/or are woven with each of the plurality of laterally-extending strips **60**. In the illustrative embodiment, the seat bottom web **40** includes three laterally-extending strips **60** and two longitudinally extending strips **62**, however, in other embodiments, any number of strips may be used in each direction.

[0037] The seat back web **42** is attached to at least one of the seat-back base **22** and the back frame foundation **32** and is positioned behind the mesh sheet **44** as shown in FIGS. **6** and **7**. The seat back web **42** includes a plurality of laterally-extending strips **64** and a plurality of vertically-extending strips **66**. Each of the laterally-extending strips **64** and the vertically-extending strips may be under tension prior to any load acting on them. The plurality of laterally-extending strips **64** are coupled to the back frame foundation **32** and are spaced apart from one another. The laterally extending strips **64** traverse the entire back aperture **27**. The plurality of vertically-extending strips **66** are coupled to the seat-back base **22** and are spaced apart from one another. The plurality of vertically-extending strips **66** cross and/or are woven with each of the plurality of laterally-extending strips **64**. The plurality of vertically-extending strips **66** may attach to corresponding longitudinally-extending strips **62** of the seat bottom web **40**. In the illustrative embodiment, the seat back web **42** includes three laterally-extending strips **64** and two vertically-extending strips **66**, however, in other embodiments, any number of strips may be used in each direction.

[0038] In the illustrative embodiment, the seat suspension **18** extends across substantially an entire length of the seat-bottom base **20** as shown in FIGS. **1**-**3**. However, the seat suspension **18** may not extend substantially across an entire height of the seat-back base **22**. Instead, the juvenile seat **10** further includes a headrest **70** which may cooperate with the seat suspension **18** to support portions of the child along the seat back area. In the illustrative embodiment, the seat back web **42** and the mesh sheet **44** extend from the seat-bottom base **20** to a point that is about half of the height of the seat-back base **22**. The headrest **70** then extends from the point to an upper end of the seat-back base **22**.

[0039] The headrest **70** includes a headrest body **72**, a headrest tail **74** coupled to a lower end of the headrest body **72**, and a pair of side wings **76**, **78** coupled to opposite lateral ends of the headrest body **72** as shown in FIGS. **3**, **10**, and **11**. The headrest **70** is movable between a fully-raised position, as shown in FIG. **10**, to a fully-lowered position, as shown in FIG. **11**. In the fully raised position, a first extent of the headrest tail **74** overlies the seat back web **42**. More particularly, in the

fully-raised position, a lowermost segment **84** of the headrest tail **74** is aligned with an uppermost strip **65** of the seat back web **42**. In the fully-lowered position, a second extent of the headrest tail **74**, greater than the first extent, overlies the seat back web **42**. The headrest body **72**, headrest tail **74**, and side wings **76**, **78** of the headrest **70** may be formed as an integral component that is made from a rigid plastic material.

[0040] The headrest tail **74** includes a perimeter frame **80** at least partially defining an opening **81** extending through the headrest tail **74** and at least one support strip **82** extending across the opening **81** as shown in FIG. **10**. The perimeter frame **80** has a width that positions lateral segments of the perimeter frame **80** in front of corresponding portions of the seat-back base **22**. The support strip **82** is arranged in a generally central location on the headrest tail **74** and extends in a vertical direction along the headrest tail **74**. Optional straps **88** may extend between the perimeter frame **80** and the support strip **82**. The straps **88** may be substantially similar to straps **60**, **62**, **64**, **66**. The headrest **70** may further be covered by a mesh sheet **44**, a trim or soft-goods material as well.

[0041] In some embodiments, the juvenile seat includes an inner seat unit having mesh child-support pads **44** that at least partially form a seat bottom and a seat back of the inner seat unit. This provides breathability that may reduce the potential of children sweating. Each mesh child-support pad **44** includes a plurality of woven or non-woven fibers that provide a thin, breathable fabric having a backside that is substantially spaced apart from the support frame **16** to allow air to flow behind and under the child seated on the child support pad **44**. The mesh child-support pads **44** have openings between fibers to allow air, moisture, and heat to pass therethrough.

[0042] In some embodiments, each mesh child-support pad **44** coupled to outer rails **30**, **32** included in the seat unit and tensioned to support the child in spaced apart relation to other parts of the seat unit and the support frame **16** in normal circumstances. The mesh child-support pads **44** may be coupled to an intermediate webbing **40**, **42** (i.e. by sewing) and may include foam pads in some areas (around the head) for impact mitigation. Spacing or gaps are provided between the mesh child-support pads **44** and the intermediate webbing **40**, **42**. During an impact (i.e. a crash event), the mesh child support pads **44** may flex to close the gaps until the mesh child support-pad **44** reaches the intermediate webbing **40**, **42**. The intermediate webbing **40**, **42** is flexible but may have a higher tensile strength than the mesh child-support pad **44** so as not to flex as much as the mesh child-support pad **44**. In some embodiments, the intermediate webbing **40**, **42** may not flex at all but may move slightly relative to the rails **30**, **32** when exposed to a force.

[0043] In some child restraints, heat can accumulate behind the child while seated in the child seat. The child restraint **10** includes mesh portions **44** and gaps between the mesh portions **16** and structural portions (i.e. frame **20**, **22** and rails **24**) of the child restraint **10** to promote air circulation around the child thus dissipating the heat generated by the child's body resulting in the elimination of sweat. The use of a stretched mesh as the seating surface may also provide additional comfort and may eliminate the need to use foam as a comfort layer.

[0044] In some embodiments, the structural frame **16** may sit on the vehicle seat and can be attached to the vehicle using either the vehicle seatbelt or through the ISOFIX anchors. The frame may be produced using any of or any combination of the following technologies: a gas assisted injection molding process; an injection molding process; an overmolding of metal structure; an alloy injection molding process. In one example, at least one alloy used to form the frame **12** is magnesium.

[0045] In some embodiments, the seat unit may include a frame **16** and a mesh fabric material **44** strung on that frame **16** to form a seating surface for the child. In some embodiments, the mesh **44** may be strung directly on the structural frame **16**. The seating surface includes two areas, one to support the child's bottom and the other to support the child's back. These two surfaces include a porous mesh to allow air circulation around the child body. The shape of the frame may extend to limit the lateral movement of the child supporting the shoulders and thighs of the child. The seat unit may be fitted with a headrest **70** composed of substantially the same mesh material as the seat

unit. The headrest **70** may be movable to adjust to different heights to accommodate different sizes of children. The frame of the headrest **70** may be shaped with side wings limiting the lateral movement of the child's head.

[0046] The child restraint **10** further includes a harness system **14**. In some embodiments, the harness system is a 5-point harness system. The harness may be fitted with an adjustment mechanism to allow the harness length to be adjusted to fit snugly around different size children. The harness **14** may also be routed through the headrest so the height of the harness will automatically adjust with the height of the headrest.

Claims

1. A juvenile seat comprising a seat chassis, and a seat suspension configured to support a child above and spaced apart from at least a portion of the seat chassis, the seat suspension including a web coupled to the seat chassis and at least partially spaced apart from the portion of the seat chassis and a mesh sheet coupled to the seat chassis and spaced apart from the web, wherein the seat suspension is configured to provide two-stage load resistance including a first-stage support provided by the mesh sheet in response to a first load acting on the seat suspension in which only the mesh sheet deforms relative to the seat chassis and a second-stage support provided by the mesh sheet and the web in response to a second force acting on the seat suspension greater than the first force in which the mesh sheet and the web stretch toward the seat chassis.

2. The juvenile seat of claim 1, wherein the mesh sheet is flexible and includes a plurality of woven strands that cooperate to provide a plurality of openings that allow air to pass through the mesh sheet, and wherein web includes a plurality of flexible strips that underlie the mesh sheet.

3. The juvenile seat of claim 2, wherein the mesh sheet has a first tensile strength and each of the plurality of flexible strips have a second tensile strength greater than the first tensile strength.

4. The juvenile seat of claim 1, wherein a first empty space is established between the mesh sheet and the web and a second empty space is established between the web and the seat chassis, and wherein the mesh sheet is configured to contact the web in response to the second force to close at least a portion of the first empty space.

5. The juvenile seat of claim 1, wherein the web includes a plurality of laterally-extending strips coupled to the seat chassis, and wherein the seat chassis is formed to include a back aperture that has a height greater than half of a height of the juvenile seat, and wherein the laterally extending strips traverse the back aperture.

6. The juvenile seat of claim 1, further comprising a headrest including a headrest body, a headrest tail coupled to a lower end of the headrest body, and a pair of side wings coupled to opposite lateral ends of the headrest body, and wherein the headrest is movable between a fully-raised position, in which a first extent of the headrest tail overlies the web, and a fully-lowered position, in which a second extent of the headrest tail overlies the web, the first extent being less than the second extent.

7. The juvenile seat of claim 1, wherein the seat chassis includes a seat-bottom base, a seat-back base coupled to the seat-bottom base and arranged to extend upwardly away from the seat-bottom base, and a body frame including a first frame side wing coupled to a first lateral side of the seat-back base and a second frame side wing coupled to a second lateral side of the seat-back base opposite from the first frame side wing, and wherein the mesh sheet is coupled to the seat-bottom base and the seat-back base and is spaced apart from a distal end of the first and second frame side wings.

8. The juvenile seat of claim 7, wherein at least one side aperture is formed between the distal end of each frame side wing and the seat-back base.

9. The juvenile seat of claim 8, wherein each of the frame side wings is formed to include a first side aperture and a second side aperture, the second side aperture located between a distal end of each corresponding frame side wing and the seat-back base and located at least partially above the

first side aperture.

10. The juvenile seat of claim 9, wherein first and second side apertures extend all the way through each respective frame side wing.

11. A juvenile seat comprising a seat-bottom base, a seat-back base coupled to the seat-bottom base and arranged to extend upwardly away from the seat-bottom base, and a body frame including a first frame side wing coupled to a first lateral side of the seat-back base and a second frame side wing coupled to a second lateral side of the seat-back base opposite from the first frame side wing, wherein each of the frame side wings is formed to include a first side aperture and a second side aperture, the second side aperture is located between a distal end of each corresponding frame side wing and the seat-back base and is located at least partially above the first side aperture.

12. The juvenile seat of claim 11, wherein the first side aperture has a first length and the second side aperture has a second length along a height of the seat-back base greater than the first length.

13. The juvenile seat of claim 11, wherein the second side aperture as a first end located near an upper end of the seat-back base and a second end located near a lower end of the first side aperture along a height of the seat-back base such that the second side aperture extends along a majority of the height of the seat-back base.

14. The juvenile seat of claim 13, wherein the second end of the second side aperture is located below an upper end of the first side aperture along the height of the seat-back base.

15. The juvenile seat of claim 11, further comprising a headrest coupled to the seat-back base, the headrest including a first headrest side wing and a second headrest side wing, and wherein a lower end of the first and second headrest side wings is at or above the second side aperture in a lateral direction.

16. The juvenile seat of claim 15, wherein the headrest is movable along the seat-back base from a raised position to a lowered position and the lower end of the first and second headrest side wings is aligned with at least a portion of the second side aperture in the raised position and the lowered position.

17. The juvenile seat of claim 15, wherein an upper end of the first and second headrest side wings is located above the second side aperture.

18. The juvenile seat of claim 17, wherein the second side aperture includes an upper end and a lower end, and the first and second headrest side wings are located above the lower end of the second side aperture.

19. The juvenile seat of claim 18, wherein the headrest is movable along the seat-back base from a raised position to a lowered position and the upper end of the first and second headrest side wings is located above the upper end of the second side aperture in the raised position and below the upper end of the second side aperture in the lowered position.

20. The juvenile seat of claim 11, wherein the second side aperture of the first frame side wing extends entirely through the first frame side wing and the second side aperture of the second frame side wing extends entirely through the frame second side wing.