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(54) **PORTABLE FOLDING SEAT WITH CUSHION ATTACHMENT**

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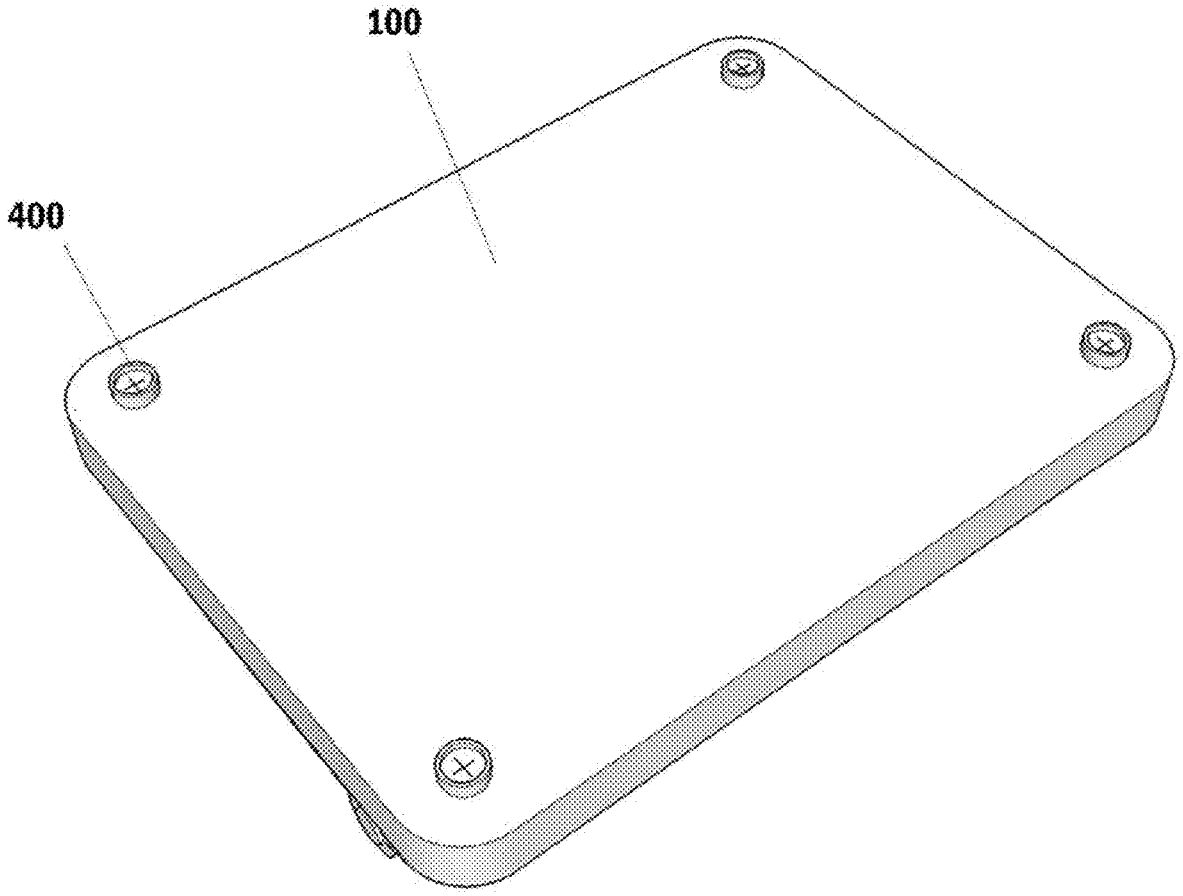
CPC *A47C 4/12* (2013.01); *A47C 3/265* (2013.01); *A47C 7/021* (2013.01)

(57) **ABSTRACT**

The portable folding seat with cushion attachments disclosed herein may comprise a planar horizontal surface, two to four collapsible leg combinations, a series of locking mechanisms for support, and a series of ratcheting mechanisms for width adjustment. The combination is designed to fold into a compact form for carrying by an otherwise-encumbered user, such as a parent or guardian pushing a stroller or carrying a baby bag, and may unfold into a stand-alone chair or a stroller attachment. The combination made be made from extruded aluminum and ABS plastic, and may comprise stainless steel components for increased strength and light weight. A removable cushioned seat may be made available as part of the combination to improve user comfort, and the combination may further include a tote bag for ease of storage.



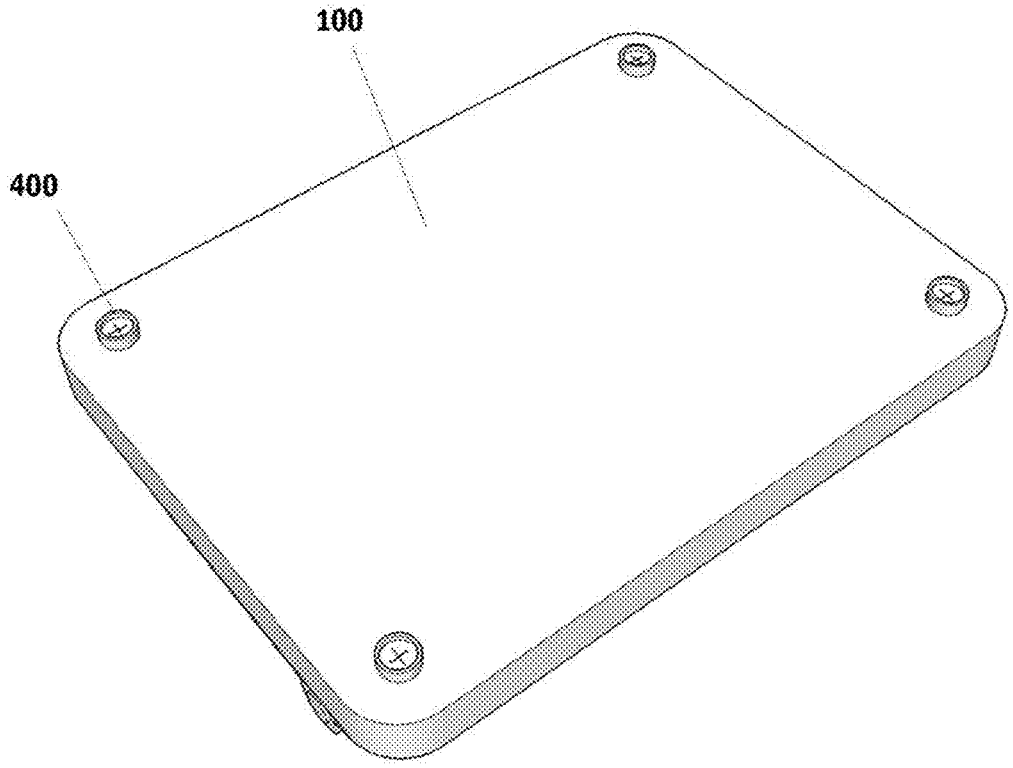


FIG. 1

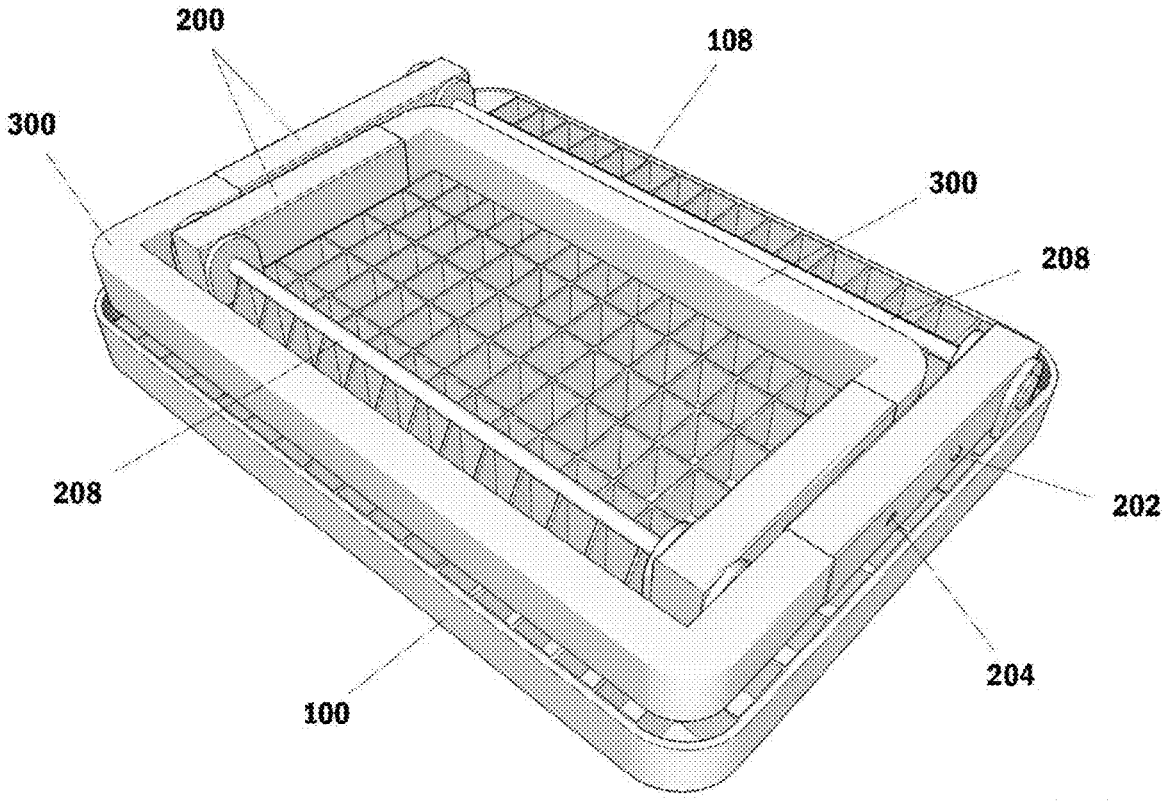

200
108
300
300
208
208
202
204
100

FIG. 2

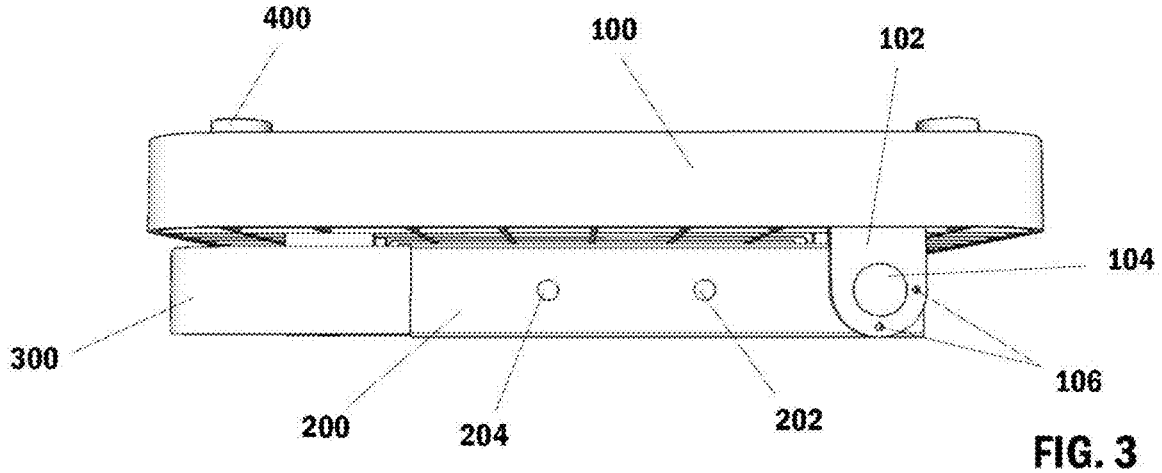

400
100
102
104
300
106
200
204
202

FIG. 3

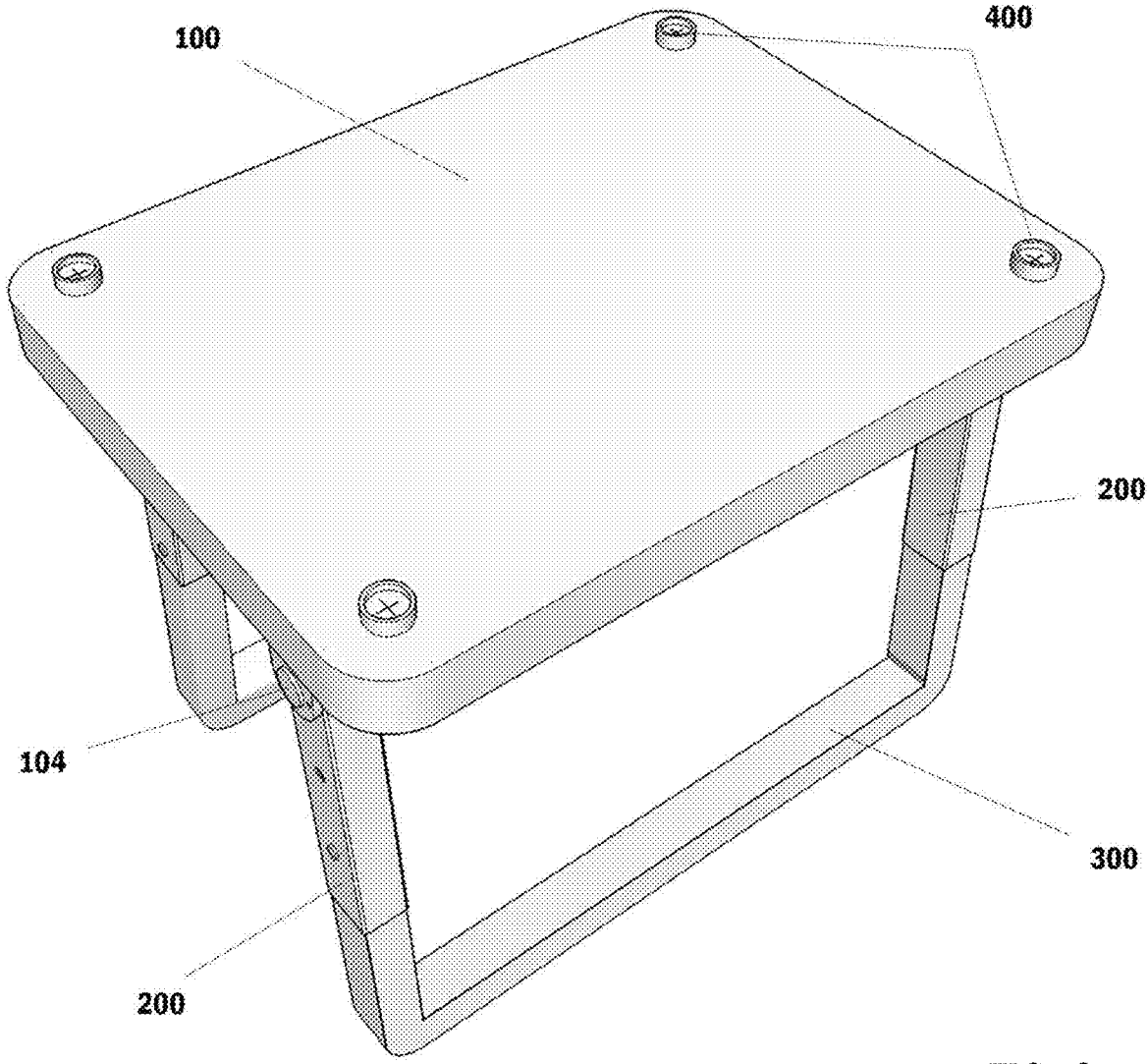


FIG. 4

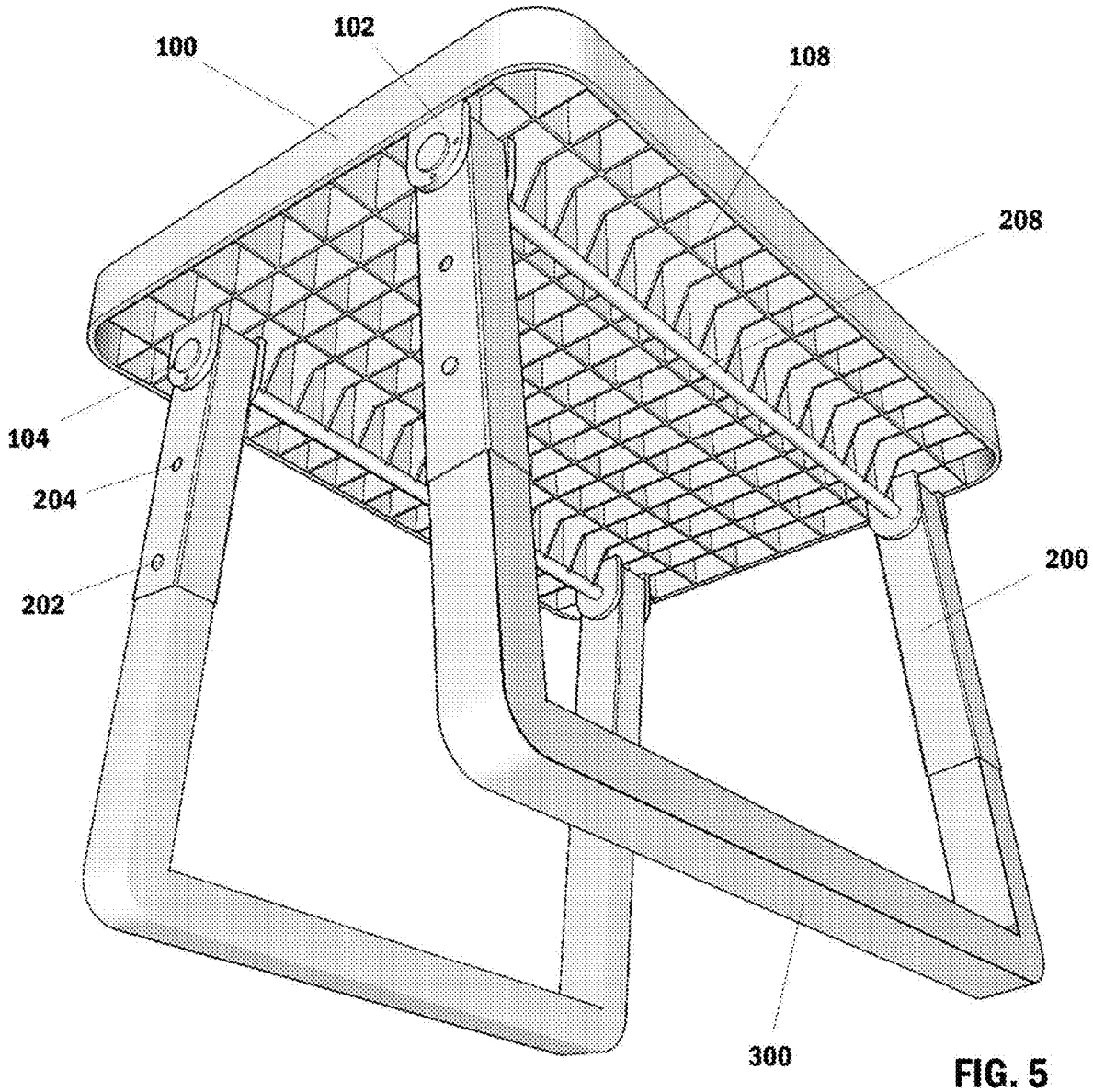


FIG. 5

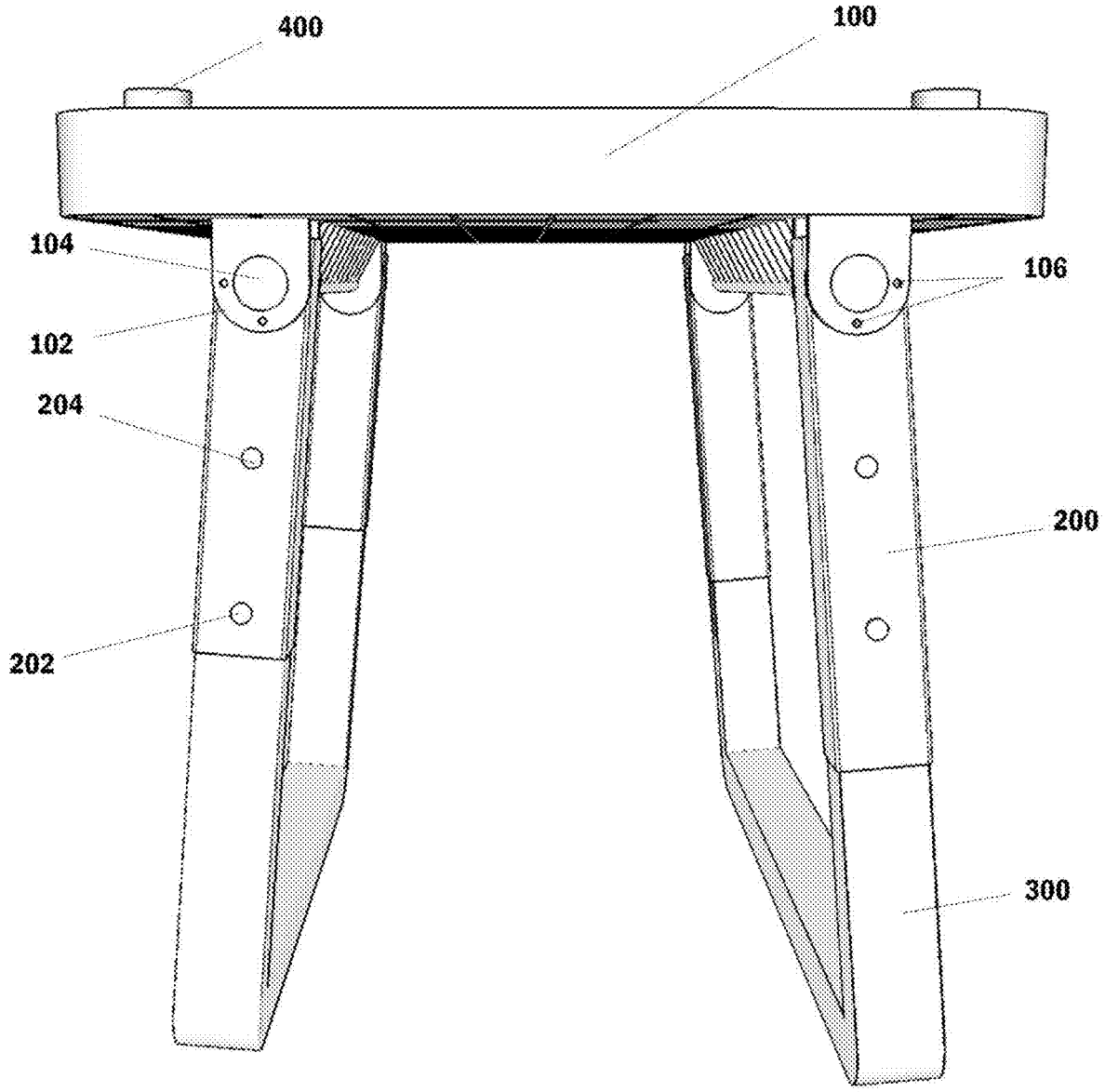


FIG. 6

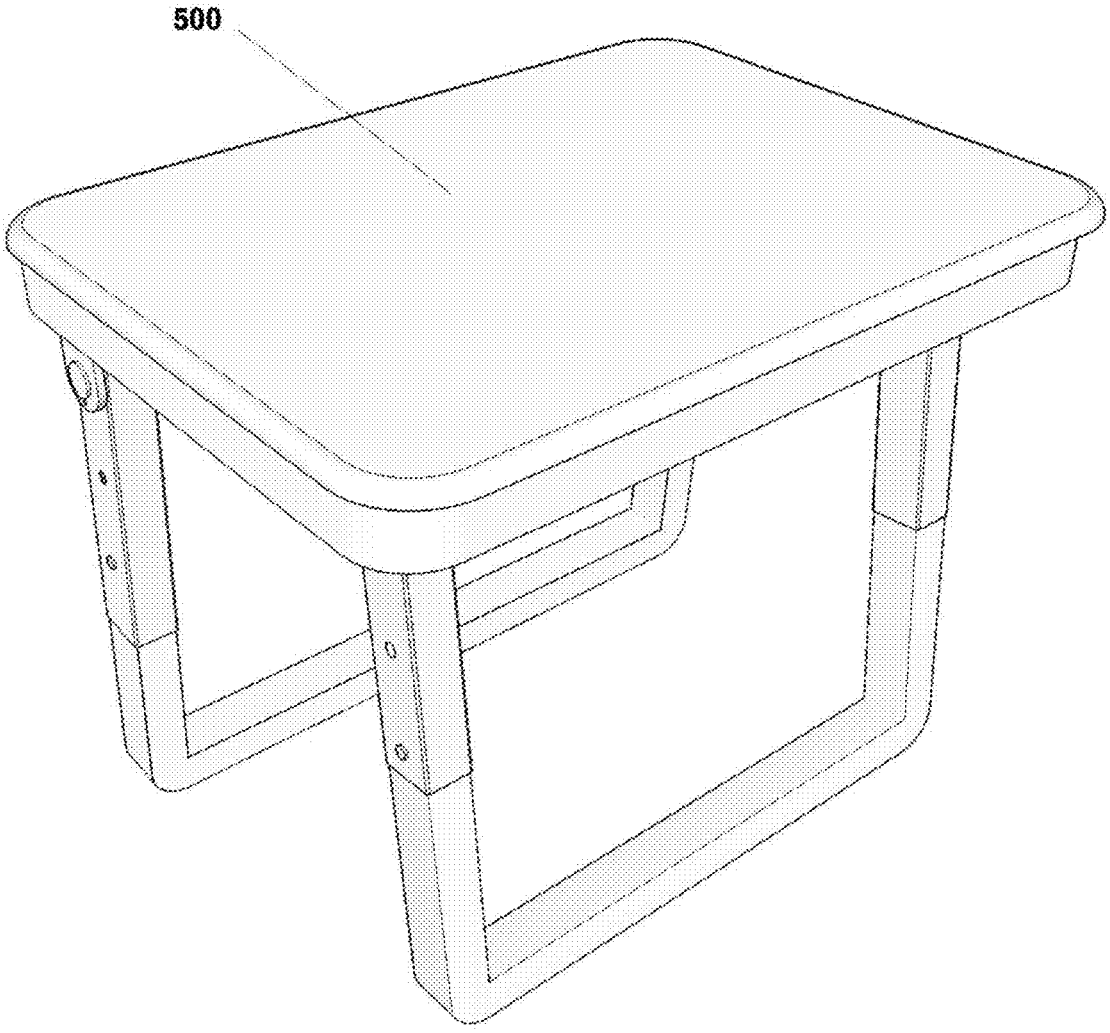


FIG. 7

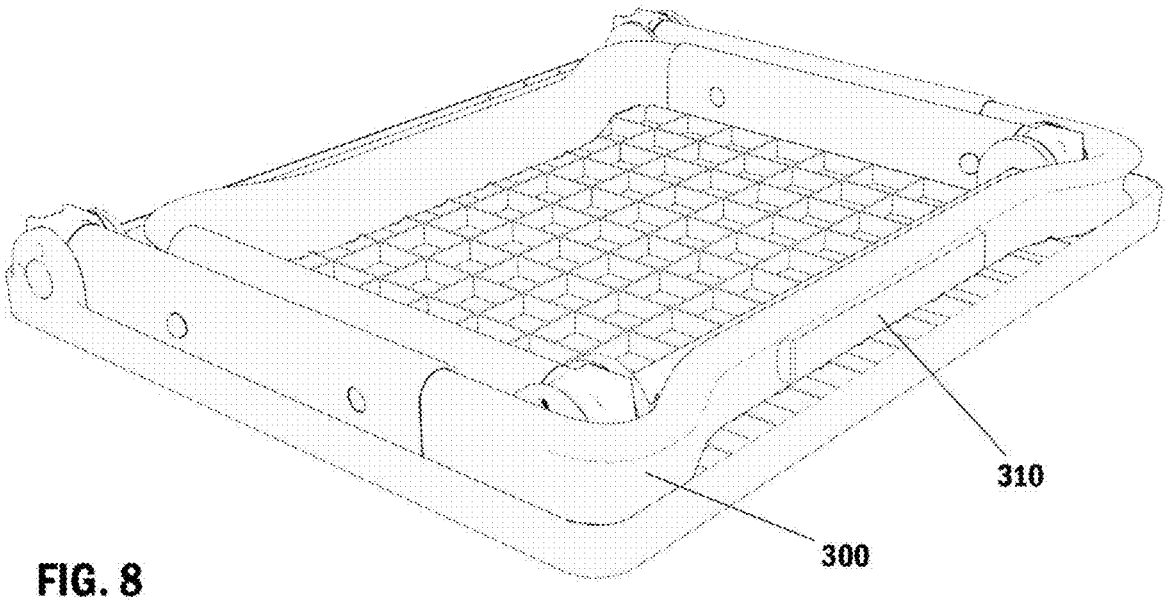


FIG. 8

FIG. 9

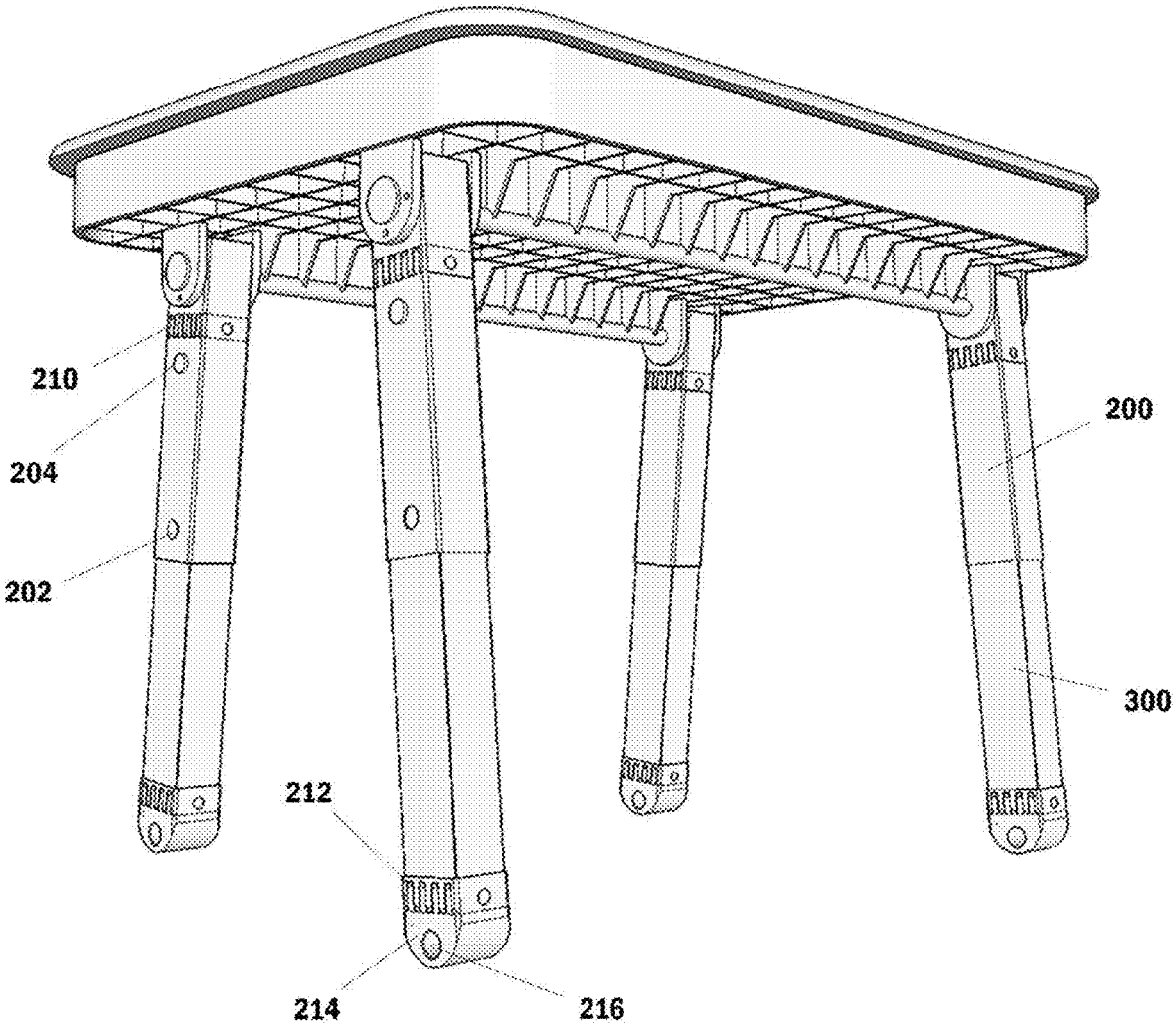
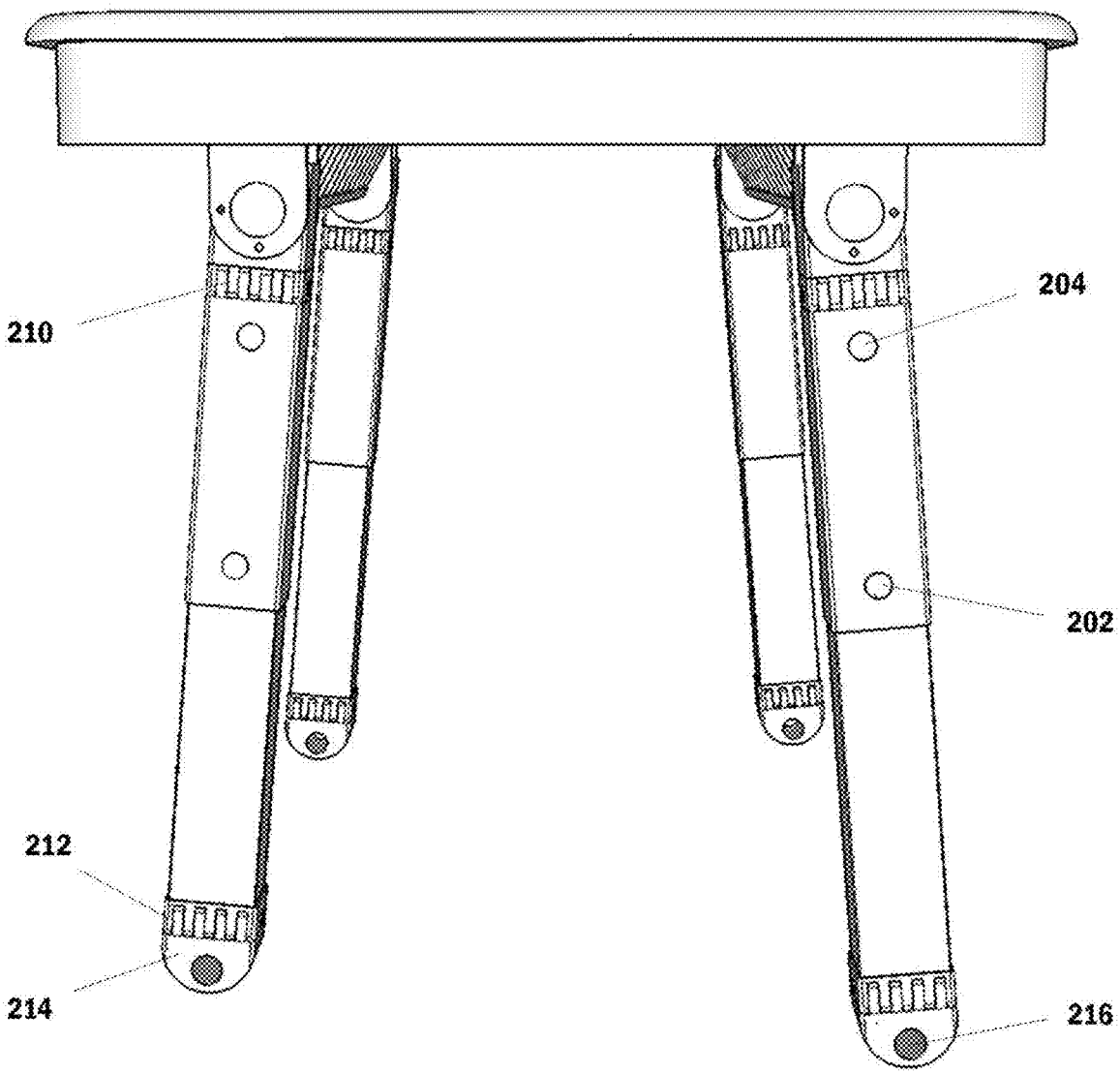


FIG. 10



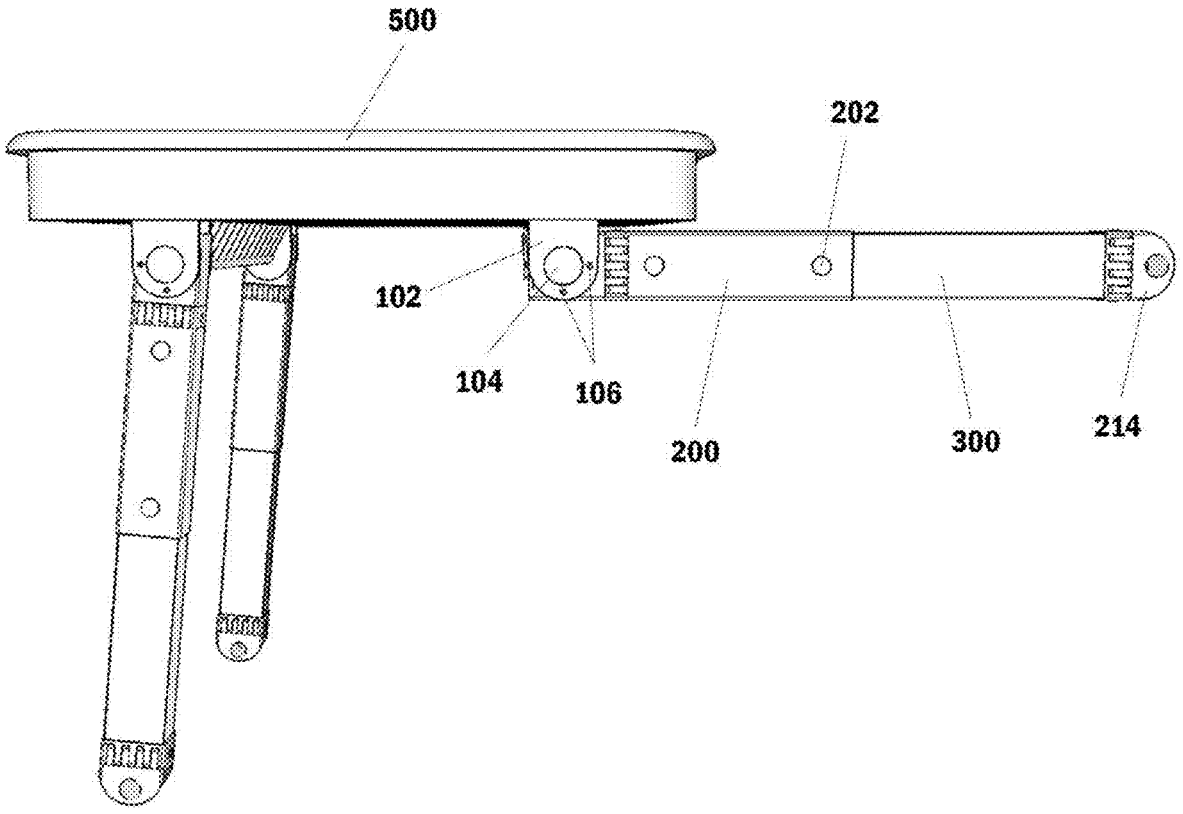


FIG. 11

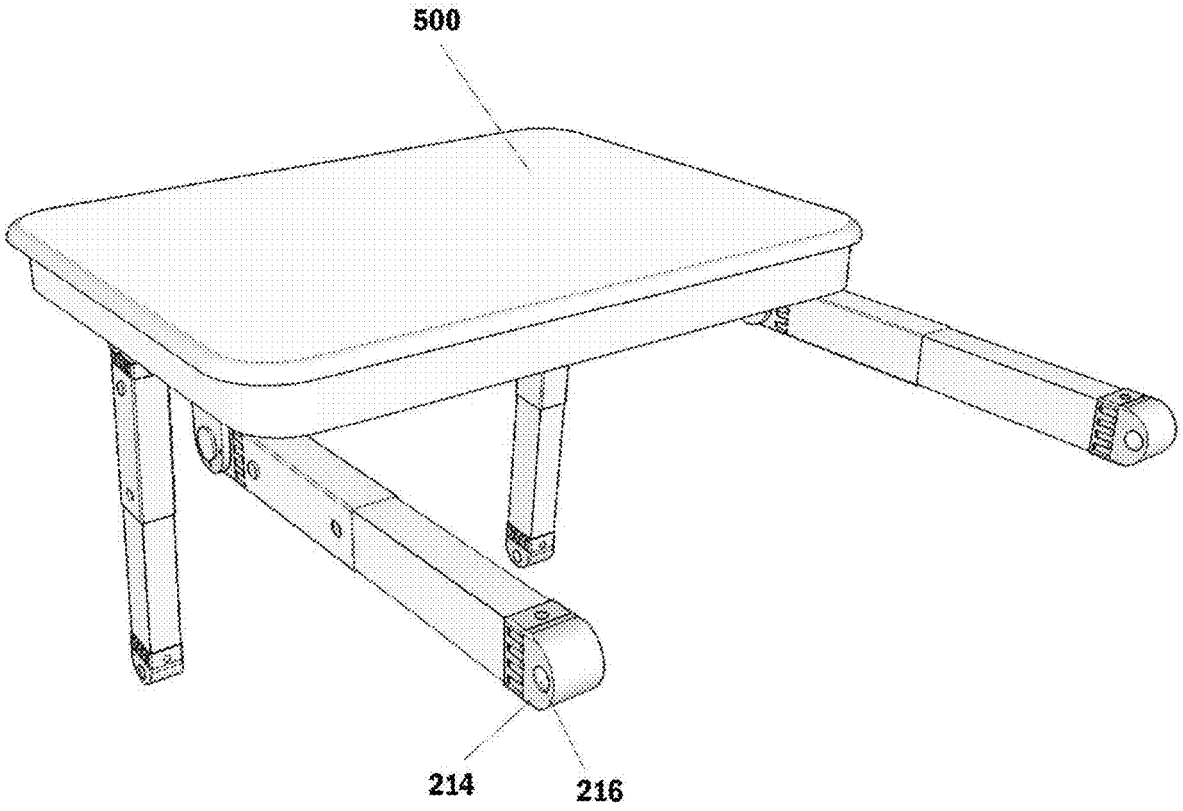


FIG. 12

PORTABLE FOLDING SEAT WITH CUSHION ATTACHMENT

TECHNICAL FIELD OF THE INVENTION

[0001] The present invention relates in general to foldable seats, and, more specifically, to a portable folding seat with cushion attachments.

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BACKGROUND OF THE INVENTION

[0004] A seat is a piece of furniture with a raised surface supported by legs, commonly used to seat a single person. Seats may vary in their design and number of legs, though generally comprise a relatively horizontal surface having three to five relatively vertical legs for support. A seat further comprising a relatively vertical support surface may be known as a chair. Seats and chairs may comprise a variety of materials of construction, though are commonly made from plastics, metals, woods, or some combination thereof. Seats and chairs may be further padded or upholstered or may comprise removably attached cushions for additional user comfort.

[0005] A folding seat is a seat that folds upon itself into a more compact form so as to occupy less space. Such a seat may be mounted to a vertical surface and may articulate up or down, or may be unmounted and may articulate relative to its vertical legs. A folding chair may be designed so that a chair back and chair seat may articulate relative to one another, and may further articulate relative to the vertical legs or may incorporate the vertical legs into the articulating action. Most folding chairs articulate at the seat, forming a side-x design, wherein the chair back support and the front legs are the same component.

[0006] Such folding chairs and folding seats, though, do not fold down into a suitably compact form for ease of carrying by a user, especially a user that may be otherwise encumbered by goods, such as a parent or guardian with a child in a stroller. Therefore, there is a need in the art for a portable folding seat with cushion attachments that is sufficiently compact for ease of carrying onboard a stroller or within a baby bag, that may be attached to a stroller for sitting, and that is also strong enough to support a user while being padded for user comfort.

[0007] It is to these ends that the present invention has been developed.

BRIEF SUMMARY OF THE INVENTION

[0008] To minimize the limitations in the prior art, and to minimize other limitations that will be apparent upon reading and understanding the present specification, the present invention describes a portable folding seat with cushion attachments.

[0009] It is another objective of the present invention to provide a portable folding seat with cushion attachments that may comprise a resilient material of construction.

[0010] It is another objective of the present invention to provide a portable folding seat with cushion attachments that may comprise a multi-component construction.

[0011] It is an objective of the present invention to provide a portable folding seat with cushion attachments that may comprise a horizontal surface.

[0012] It is another objective of the present invention to provide a portable folding seat with cushion attachments that may comprise a plurality of upper legs.

[0013] It is another objective of the present invention to provide a portable folding seat with cushion attachments that may comprise a plurality of lower legs.

[0014] It is another objective of the present invention to provide a portable folding seat with cushion attachments that may comprise a plurality of means for leg length adjustment.

[0015] It is another objective of the present invention to provide a portable folding seat with cushion attachments that may comprise a plurality of means for leg angle adjustment.

[0016] It is another objective of the present invention to provide a portable folding seat with cushion attachments that may comprise a plurality of means for leg width adjustment.

[0017] It is another objective of the present invention to provide a portable folding seat with cushion attachments that may comprise a plurality of stroller attachments.

[0018] It is another objective of the present invention to provide a portable folding seat with cushion attachments that may comprise a plurality of means for cushion attachment.

[0019] It is another objective of the present invention to provide a portable folding seat with cushion attachments that may comprise an antimicrobial layer.

[0020] These and other advantages and features of the present invention are described herein with specificity so as to make the present invention understandable to one of ordinary skill in the art, both with respect to how to practice the present invention and how to make the present invention.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

[0021] Elements in the figures have not necessarily been drawn to scale in order to enhance their clarity and improve understanding of these various elements and embodiments of the invention. Furthermore, elements that are known to be common and well understood to those in the industry are not depicted in order to provide a clear view of the various embodiments of the invention.

[0022] FIG. **1** is a top isometric perspective view of a first orientation of a first embodiment of a portable folding seat with cushion attachments, as contemplated by the present disclosure;

[0023] FIG. **2** is a bottom isometric perspective view of a first orientation of a first embodiment of a portable folding seat with cushion attachments, as contemplated by the present disclosure;

[0024] FIG. **3** is a side perspective view of a first orientation of a first embodiment of a portable folding seat with cushion attachments, as contemplated by the present disclosure;

[0025] FIG. **4** is a top isometric perspective view of a second orientation of a first embodiment of a portable folding seat with cushion attachments, as contemplated by the present disclosure;

[0026] FIG. **5** is a bottom isometric perspective view of a second orientation of a first embodiment of a portable folding seat with cushion attachments, as contemplated by the present disclosure;

[0027] FIG. **6** is a side perspective view of a second orientation of a first embodiment of a portable folding seat with cushion attachments, as contemplated by the present disclosure;

[0028] FIG. **7** is a top isometric perspective view of a second orientation of a first embodiment of a portable folding seat with cushion attachments, as contemplated by the present disclosure;

[0029] FIG. **8** is a bottom isometric perspective view of a second embodiment of a portable folding seat with cushion attachments, as contemplated by the present disclosure;

[0030] FIG. **9** is an isometric perspective view of a second orientation of a third embodiment of a portable folding seat with cushion attachments, as contemplated by the present disclosure;

[0031] FIG. **10** is a side perspective view of a second orientation of a third embodiment of a portable folding seat with cushion attachments, as contemplated by the present disclosure;

[0032] FIG. **11** is a side perspective view of a third orientation of a third embodiment of a portable folding seat with cushion attachments, as contemplated by the present disclosure; and

[0033] FIG. **12** is an isometric perspective view of a third orientation of a third embodiment of a portable folding seat with cushion attachments, as contemplated by the present disclosure.

DETAILED DESCRIPTION OF THE INVENTION

[0034] Certain terminology is used in the following description for reference only and is not limiting. The words "front," "rear," "anterior," "posterior," "lateral," "medial," "upper," "lower," "outer," "inner," and "interior" refer to directions toward and away from, respectively, the geometric center of the invention, and designated parts thereof, in accordance with the present disclosure. Unless specifically set forth herein, the terms "a," "an," and "the" are not limited to one element, but instead should be read as meaning "at least one." The terminology includes the words noted above, derivatives thereof, and words of similar import.

[0035] The present invention relates in general to foldable seats, and, more specifically, to a portable folding seat with cushion attachments. As contemplated by the present invention, the portable folding seat is designed to fold into an orientation sufficiently compact for carrying by an encumbered user or for storage on a baby stroller, and to unfold into a second, free-standing orientation sufficiently strong and stable to support a sitting parent and child. In a third orientation the portable folding seat may unfold such that a pair of its legs may attach to a stroller, so as to create a sitting attachment for the stroller.

[0036] The illustrations of FIGS. **1** through **8** illustrate various views of a first and second embodiment of a portable folding seat with cushion attachments. The portable folding seat may comprise a main body **100**, a plurality of upper legs **200**, a plurality of lower legs **300**, a plurality of means for leg length adjustment **202**, a plurality of means for leg angle adjustment **104**, and a plurality of means for cushion attachment **400**.

[0037] The main body **100** may comprise a substantially planar rectangular shape with a substantially smooth upper surface and a plurality of support ridges **108** on a lower surface. The main body **100** may further comprise a plurality of leg attachments **102** attached on or incorporated into the lower surface, generally located along each lateral end of a front side and a rear side of the main body **100**. The plurality of leg attachments **102** may be of a circular or hemi-circular design spaced in pairs such that they may receive a plurality of upper legs **200**. The plurality of upper legs **200** located on a first side of the main body **100** may be attached to one another by a shaft **208**, which may further insert through a central opening in the plurality of leg attachments **102** such that the legs may articulate on a horizontal longitudinal axis of the combination. The plurality of upper legs **200** located on a second side of the main body **100** may be similarly attached.

[0038] The plurality of upper legs **200** may comprise a hollow length of material with a substantially cylindrical or rectangular cross-sectional profile. The plurality of lower legs **300** may also comprise a hollow length of material with a substantially cylindrical or rectangular cross-sectional profile, sized appropriately to insert within the plurality of upper legs **200**. The plurality of lower legs **300** may be shaped such that they generally form a U-shape, but may further implement additional curvatures and an elevated horizontal section for aesthetic purposes. An upper edge of the plurality of lower legs **300** may incorporate a plurality of means for leg length adjustment **202**, which may be spring button detents or any other mechanism appropriate for such a purpose.

[0039] The plurality of upper legs **200** may further comprise a plurality of length adjustment holes **204** located in pairs opposite one another and positioned at multiple points along the length of the plurality of upper legs **200**. Such length adjustment holes **204** may be appropriately sized to receive a plurality of means for leg length adjustment **202** incorporated into the plurality of lower legs **300**. By this design it is contemplated that when the means for leg length adjustment **202** of the plurality of lower legs **300** are positioned into a lowermost of the plurality of length adjustment holes **204** of the plurality of upper legs **200**, the overall length of the combination will be at a maximum. It is further contemplated that when the means for leg length adjustment **202** of the plurality of lower legs **300** are positioned into an uppermost of the plurality of length adjustment holes **204** of the plurality of upper legs **200** that the overall length of the combination will be at a minimum, and that the combination may also be designed for engagement at any point between these two limits.

[0040] An upper edge of the plurality of upper legs **200** may incorporate a plurality of means for leg angle adjustment **104**, which may be a spring and ball detent mechanism or any other mechanism appropriate for such a purpose. The plurality of leg attachments **102** of the main body **100** may further comprise a plurality of angle adjustment holes **106** located in pairs opposite one another and positioned at multiple points around the plurality of leg attachments **102**. Each of such plurality of angle adjustment holes **106** may be set to position and lock the plurality of upper legs **200** at

preferred angles relative to the main body **100**, and such locking may be enhanced by a plurality of ball bearings **110** engaging the plurality of angle adjustment holes **106**. In a second embodiment the means for leg angle adjustment may comprise a rectangular pressure switch **310** that may be attached into the plurality of lower legs **300** and which may comprise a pushrod and cable mechanism, or other appropriate mechanism, to permit adjustment of the leg angle when engaged.

[0041] The upper surface of the main body **100** may comprise a plurality of means for cushion attachment **400** generally located along each lateral end of a front side and a rear side of the main body **100**. The plurality of means for cushion attachment **400** may comprise button snaps, clips, hooks, or any other mechanism appropriate for such a purpose, and may reversibly attach a seat cushion. The plurality of upper legs **200** and plurality of lower legs **300** on a first side of the present invention may comprise a width wider than the plurality of upper legs **200** and plurality of lower legs **300** on a second side of the present invention so that the second combination may rest within the first combination when both combinations are folded.

[0042] The design of each various component may further comprise rounded, chamfered, beveled, or similarly modified edges for aesthetic purposes. The combination may further comprise a seat cushion **500** with cushion attachments, which may reversibly attach to said plurality of means for cushion attachment **400**.

[0043] The illustrations of FIGS. **9** through **12** illustrate various views of a third embodiment of a portable folding seat with cushion attachments. The portable folding seat may comprise a main body **100**, a plurality of upper legs **200**, a plurality of lower legs **300**, a plurality of means for leg length adjustment **202**, a plurality of means for leg angle adjustment **104**, a plurality of means for leg width adjustment **210**, a plurality of means for foot adjustment **212**, a plurality of feet **214**, a plurality of means for stroller attachment **216**, and a plurality of means for cushion attachment **400**.

[0044] The main body **100** may comprise a substantially planar rectangular shape with a substantially smooth upper surface and a plurality of support ridges **108** on a lower surface. The main body **100** may further comprise a plurality of leg attachments **102** attached on or incorporated into the lower surface, generally located along each lateral end of a front side and a rear side of the main body **100**. The plurality of leg attachments **102** may be of a circular or hemi-circular design spaced in pairs such that they may receive a plurality of upper legs **200**. The plurality of upper legs **200** located on a first side of the main body **100** may be attached to one another by a shaft **208**, which may further insert through a central opening in the plurality of leg attachments **102** such that the legs may articulate on a horizontal longitudinal axis of the combination. The plurality of upper legs **200** located on a second side of the main body **100** may be similarly attached.

[0045] The plurality of upper legs **200** may comprise a hollow length of material with a substantially cylindrical or rectangular cross-sectional profile. A plurality of means for leg width adjustment **210** may be integrated into an upper section of each of the plurality of upper legs **200** such that the lateral angulation of the plurality of upper legs **200** may be altered, as desired. The plurality of means for leg width adjustment **210** may comprise a ratcheting mechanism or any other mechanism appropriate for such a purpose, and may allow the angle of the plurality of upper legs **200** to be adjusted outwardly or inwardly relative to the orientation of the plurality of leg attachments **102**.

[0046] The plurality of upper legs **200** may further comprise a plurality of length adjustment holes **204** located in pairs opposite one another and positioned at multiple points along the length of the plurality of upper legs **200**. Such length adjustment holes **204** may be appropriately sized to receive a plurality of means for leg length adjustment **202** incorporated into the plurality of lower legs **300**. By this design it is contemplated that when the means for leg length adjustment **202** of the plurality of lower legs **300** are positioned into a lowermost of the plurality of length adjustment holes **204** of the plurality of upper legs **200**, the overall length of the combination will be at a maximum. It is further contemplated that when the means for leg length adjustment **202** of the plurality of lower legs **300** are positioned into an uppermost of the plurality of length adjustment holes **204** of the plurality of upper legs **200** that the overall length of the combination will be at a minimum, and that the combination may also be designed for engagement at any point between these two limits.

[0047] An upper edge of the plurality of upper legs **200** may incorporate a plurality of means for leg angle adjustment **104**, which may be a spring and ball detent mechanism or any other mechanism appropriate for such a purpose. The plurality of leg attachments **102** of the main body **100** may further comprise a plurality of angle adjustment holes **106** located in pairs opposite one another and positioned at multiple points around the plurality of leg attachments **102**. Each of such plurality of angle adjustment holes **106** may be set to position and lock the plurality of upper legs **200** at preferred angles relative to the main body **100**, and such locking may be enhanced by a plurality of ball bearings **110** engaging the plurality of angle adjustment holes **106**. In a second embodiment the means for leg angle adjustment may comprise a rectangular pressure switch **310** that may be attached into the plurality of lower legs **300** and which may comprise a pushrod and cable mechanism, or other appropriate mechanism, to permit adjustment of the leg angle when engaged.

[0048] The plurality of lower legs **300** may also comprise a hollow length of material with a substantially cylindrical or rectangular cross-sectional profile, sized appropriately to insert within the plurality of upper legs **200**. An upper edge of the plurality of lower legs **300** may incorporate a plurality of means for leg length adjustment **202**, which may be spring button detents or any other mechanism appropriate for such a purpose.

[0049] The plurality of lower legs **300** may further comprise a plurality of means for foot adjustment **212** may be integrated into a lower section of each of the plurality of lower legs **300** such that the lateral angulation of the plurality of feet **214** may be altered, as desired. The plurality of means for foot adjustment **212** may comprise a ratcheting mechanism or any other mechanism appropriate for such a purpose, and may allow the angle of the plurality of feet **214** to be adjusted outwardly or inwardly relative to the orientation of the lower legs **300**.

[0050] The plurality of feet **214** may comprise any appropriate design for supporting the device, and may further comprise a plurality of means for stroller attachment **216**. The plurality of means for stroller attachment **216** may be

any appropriate mechanism of attachment such as, for example, a post-receiving hole, a snap button, or a clip.

[0051] The upper surface of the main body **100** may comprise a plurality of means for cushion attachment **400** generally located along each lateral end of a front side and a rear side of the main body **100**. The plurality of means for cushion attachment **400** may comprise button snaps, clips, hooks, or any other mechanism appropriate for such a purpose, and may reversibly attach a seat cushion. The plurality of upper legs **200** and plurality of lower legs **300** on a first side of the present invention may comprise a width wider than the plurality of upper legs **200** and plurality of lower legs **300** on a second side of the present invention so that the second combination may rest within the first combination when both combinations are folded.

[0052] The design of each various component may further comprise rounded, chamfered, beveled, or similarly modified edges for aesthetic purposes. The combination may further comprise a seat cushion **500** with cushion attachments, which may reversibly attach to said plurality of means for cushion attachment **400**.

[0053] The portable folding seat with cushion attachments may be substantially constructed of any suitable material or combination of materials, but typically is constructed of a resilient material or combination of materials such that the device is resistant to damage as a result of compression, twisting, heating, or submersion in water. As an example, and without limiting the scope of the present invention, various exemplary embodiments of the portable folding seat with cushion attachments may be substantially constructed of one or more materials of fabric, plastic, acrylic, polycarbonate, steel, aluminum, brass, fiberglass, carbon fiber, or combinations thereof. In some embodiments the various components of the device may be coated, lined, or otherwise insulated to prevent contamination of the device. In one embodiment the material of construction may vary from one component to the next within the system.

[0054] In one embodiment the portable folding seat with cushion attachments may comprise a resilient material of construction that either comprises a material having antimicrobial properties or comprises a layering of antimicrobial material or coating. Antimicrobial properties comprise the characteristic of being antibacterial, biocidal, microbicidal, anti-fungal, anti-viral, or other similar characteristics, and the oligodynamic effect, which is possessed by copper, brass, silver, gold, and several other metals and alloys, is one such characteristic. Copper and its alloys, in particular, have exceptional self-sanitizing effects. Silver also has this effect, and is less toxic to users than copper. Some materials, such as silver in its metallic form, may require the presence of moisture to activate the antimicrobial properties.

[0055] While the invention has been described in connection with what is presently considered to be the most practical and preferred embodiments, it is to be understood that the invention is not to be limited to the disclosed embodiments, but, on the contrary, is intended to cover various modifications and equivalent arrangements included within the spirit and scope of the appended claims.

I claim:

1. A portable folding seat with cushion attachments, comprising:

a main body;

a plurality of upper legs;

a plurality of lower legs;

a plurality of means for leg length adjustment; and

a plurality of means for leg angle adjustment;

wherein said main body further comprises a planar rectangular shape with a smooth upper surface and a plurality of support ridges attached to a lower surface;

wherein said main body further comprises a plurality of leg attachments attached to said lower surface;

wherein one each of said plurality of leg attachments is attached to one each of said plurality of upper legs;

wherein a first of said plurality of leg attachments is located near a first lateral side of a front edge of said lower surface;

wherein a second of said plurality of leg attachments is located near a second lateral side of a front edge of said lower surface;

wherein a third of said plurality of leg attachments is located near a first lateral side of a rear edge of said lower surface, inset from said first of said plurality of leg attachments such that their respective upper legs do not interfere with each other when folded; and

wherein a fourth of said plurality of leg attachments is located near a second lateral side of a rear edge of said lower surface, inset from said second of said plurality of leg attachments such that their respective upper legs do not interfere with each other when folded.

2. The invention of claim **1**,

wherein one each of said plurality of leg attachments is attached to one each of said plurality of upper legs such that the plurality of upper legs may rotate along a longitudinal arc relative to said main body;

wherein said plurality of leg attachments attached near said front edge of said main body permit their relative upper legs to rotate rearwards from a vertical orientation to a horizontal orientation; and

wherein said plurality of leg attachments attached near said rear edge of said main body permit their relative upper legs to rotate forwards from a vertical orientation to a horizontal orientation.

3. The invention of claim **2**,

wherein said plurality of upper legs rotate through a longitudinal arc of up to 180 degrees.

4. The invention of claim **3**,

wherein said plurality of upper legs are hollow.

5. The invention of claim **4**,

wherein said plurality of upper legs attached to said plurality of leg attachments attached near said front edge of said main body receive one each of said plurality of lower legs; and

wherein said plurality of upper legs attached to said plurality of leg attachments attached near said rear edge of said main body receive one each of said plurality of lower legs.

6. The invention of claim **5**,

wherein said plurality of lower legs are attached to said plurality of upper legs by inserting said lower legs into their respective upper legs;

wherein said plurality of lower legs further comprise a plurality of means for leg length adjustment;

wherein said plurality of upper legs further comprise a plurality of length adjustment holes; and

wherein said plurality of means for leg length adjustment comprise spring button detents that reversibly engage said plurality of length adjustment holes to lock said plurality of lower legs into said plurality of upper legs.

7. The invention of claim 6,

wherein said plurality of lower legs may be reversibly locked to said plurality of upper legs at a lower set of said plurality of length adjustment holes such that an overall length of said plurality of lower legs and said plurality of upper legs is at a maximum.

8. The invention of claim 7,

wherein said plurality of lower legs may be reversibly locked to said plurality of upper legs at an upper set of said plurality of length adjustment holes such that said overall length of said plurality of lower legs and said plurality of upper legs is at a minimum.

9. The invention of claim 8,

wherein said plurality of upper legs further comprise a plurality of means for leg angle adjustment;

wherein said plurality of leg attachments further comprise a plurality of angle adjustment holes; and

wherein said plurality of means for leg angle adjustment comprise spring and ball detents that reversibly engage said plurality of plurality of angle adjustment holes to lock said plurality of upper legs into said plurality of leg attachments.

10. The invention of claim 9,

wherein said plurality of upper legs may be reversibly locked to said plurality of leg attachments at a vertical set of said plurality of angle adjustment holes such that said plurality of upper legs are oriented vertically relative to said main body.

11. The invention of claim 10,

wherein said plurality of upper legs may be reversibly locked to said plurality of leg attachments at a horizontal set of said plurality of angle adjustment holes such that said plurality of upper legs are oriented horizontally relative to said main body.

12. The invention of claim 11, further comprising:

a plurality of means for cushion attachment;

wherein said plurality of means for cushion attachment are attached to said smooth upper surface of said main body.

13. The invention of claim 12, further comprising:

a cushion;

wherein said cushion is reversibly attached to said plurality if means for cushion attachment.

14. The invention of claim 13, further comprising:

a plurality of means for leg width adjustment;

a plurality of means for foot adjustment; and

a plurality of feet;

wherein one each of said plurality of means for leg width adjustment is installed on one each of said upper legs near their attachment to said leg attachments;

wherein one each of said plurality of means for foot adjustment is installed on one each of said lower legs at a distal end; and

wherein one each of said plurality of feet is installed on one each of said plurality of means for foot adjustment.

15. The invention of claim 14,

wherein said plurality of means for leg width adjustment comprise a ratcheting mechanism permitting said plurality of upper legs to be rotated along a lateral arc relative to said main body; and

wherein said plurality of means for foot adjustment comprise a ratcheting mechanism permitting said plurality of feet to be rotated along a lateral arc relative to said main body.

16. The invention of claim 15,

wherein said plurality of upper legs rotate through a lateral arc of up to 180 degrees; and

wherein said plurality of feet rotate through a lateral arc of up to 180 degrees.

17. The invention of claim 16,

wherein said plurality of feet further comprise a plurality of means for stroller attachment.

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