COLLAPSIBLE TRAVEL SEAT FOR INFANTS AND THE LIKE

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ABSTRACT

A collapsible seat for supporting an infant is provided. The collapsible seat is configured so as to obtain a relatively compact unit for convenient storage and easy transportation during periods of non-use. In that regard, the collapsible seat may include one or more inflatable sections. The collapsible seat may also include a removable, flexible cover, which may be designed with patterns, such as stripes, Polka dots, among others, or may be themed, such as with general characters, such as a mouse, cat, dog, etc., or with branded themes such as Disney® characters and the like. The collapsible seat may further include other features, such as an restraint system, headrest, etc.
COLLAPSIBLE TRAVEL SEAT FOR INFANTS AND THE LIKE

CROSS-REFERENCE(S) TO RELATED APPLICATION

[0001] This application claims the benefit to U.S. Provisional Application No. 61/724,825, filed Nov. 9, 2012, the disclosure of which is hereby incorporated in its entirety.

BACKGROUND

[0002] Families of toddlers and infants know the need for stable sitting apparatuses. This need further extends away from the home, whether a visit to friends or family or an out of town trip or vacation.
[0003] The prior art contains several devices intended to be used as sitting support devices for infants and young children, ranging from pillow like devices to be placed around the middle of the infant that also double as nursing pillows and infant propping devices, to devices designed specifically for the developmental stage when infants are first learning to sit upright.

SUMMARY

[0004] This summary is provided to introduce a selection of concepts in a simplified form that are further described below in the Detailed Description. This summary is not intended to identify key features of the claimed subject matter, nor is it intended to be used as an aid in determining the scope of the claimed subject matter.
[0005] In accordance with aspect of the present disclosure, an inflatable seat having a concavity for supporting an infant is provided. The inflatable seat includes an inflatable base section having a flat bottom surface configured to rest on a support surface and an upper perimeter region, and an inflatable upper section having a longitudinal center line. In some embodiments, the inflatable upper section includes first and second side walls and first and second side walls each upwardly extending from the upper perimeter region of the inflatable base section. The upper ends of the side walls form in some embodiments a generally oval, forwardly facing opening of the concavity. The concavity can be formed by a contiguous support surface that includes a rearwardly inclined back support surface section and a rearwardly inclined front support surface section.
[0006] In some embodiments, the support surface has a general curvature from the upper end of the first side wall to the upper end of the second side wall as the support surface extends from the front wall to the back wall.
[0007] In some embodiments, the flat bottom surface is ovaly shaped.
[0008] In some embodiments, the upper perimeter region is generally ovaly shaped.
[0009] In some embodiments, the inflatable upper section is symmetrical about the longitudinal center line.
[0010] In some embodiments, the seat further comprises an infant restraint mounted to the upper section.
[0011] In some embodiments, the seat further comprises a headrest positioned on the rearwardly inclined back support surface section.
[0012] In some embodiments, the seat further comprises a removable, flexible cover that extends over at least the upper section.

[0013] In some embodiments, the flexible cover includes one or a theme and pattern.
[0014] In accordance with another aspect of the present disclosure, an inflatable seat having a concavity for supporting an infant is provided. The inflatable seat includes an inflatable base section having an flat, ovaly shaped, bottom surface configured to rest on a support surface, and an ovaly shaped, upper perimeter region, and an inflatable upper section having a longitudinal center line. In some embodiments, the inflatable upper section includes outwardly curved front and back walls and first and second side walls each upwardly extending from the upper perimeter region of the inflatable base section. The upper ends of the side walls in some embodiments form a generally oval, forwardly facing opening of the concavity. The inflatable seat in some embodiments may also include a removable, flexible cover that extends over at least the upper section, and in some embodiments, extends over both the base section and the upper section.
[0015] In some embodiments, the forwardly facing opening is disposed generally transverse to the inflatable base section.
[0016] In some embodiments, a bottom surface of the concavity includes a contiguous support surface having a rearwardly inclined back support surface section and a forwardly inclined front support surface section.
[0017] In some embodiments, the inflatable upper section is symmetrical about the longitudinal center line.
[0018] In accordance with still another aspect of the present disclosure, an inflatable seat is provided. The inflatable seat includes an inflatable seat structure defining a concavity suitably dimensioned and configured for receiving and supporting an infant, and an outer covering disposed over at least the concavity of the inflatable seat structure.

DESCRIPTION OF THE DRAWINGS

[0019] The foregoing aspects and many of the attendant advantages of this invention will become more readily appreciated as the same become better understood by reference to the following detailed description, when taken in conjunction with the accompanying drawings, wherein:
[0020] FIG. 1 is a front isometric view of one example of a collapsible seat formed in accordance with aspect of the present disclosure;
[0021] FIG. 2 is an assembly view of the collapsible seat of FIG. 1;
[0022] FIG. 3 is a top view of the collapsible seat of FIG. 1;
[0023] FIG. 4 is a side view of the collapsible seat of FIG. 1;
[0024] FIG. 5 is a bottom view of the collapsible seat of FIG. 1;
[0025] FIG. 6 is a rear view of the collapsible seat of FIG. 1;
[0026] FIG. 7 is view of the collapsible seat rolled into a compact, easy to transport condition;
[0027] FIG. 8 is a front isometric view of one embodiment of an inflatable seat structure formed in accordance with aspects of the present disclosure;
[0028] FIG. 9 is a rear isometric view of the inflatable seat structure of FIG. 8;
[0029] FIG. 10 is a top view of the inflatable seat structure of FIG. 8;
[0030] FIG. 11 is a bottom view of the inflatable seat structure of FIG. 8;
[0031] FIG. 12 is a side view of inflatable seat structure of FIG. 8;
FIG. 13 is a front view of inflatable seat structure of FIG. 8;
FIG. 14 is a longitudinal cross section view of the inflatable seat structure of FIG. 8, taken along the lines 14-14 in FIG. 13;
FIG. 15 is a rear view of inflatable seat structure of FIG. 8; and
FIG. 16 is a lateral cross section of the inflatable seat structure of FIG. 8, taken along the lines 16-16 in FIG. 12;
FIG. 17 is a lateral cross section of the inflatable seat structure of FIG. 8, taken along the lines 17-17 in FIG. 12;
FIG. 18 is a lateral cross section of the inflatable seat structure of FIG. 8, taken along the lines 18-18 in FIG. 12;
FIG. 19 is a perspective view of another example of a collapsible seat formed in accordance with aspect of the present disclosure; and
FIGS. 20A and 20B are views of still another embodiment of an inflatable seat structure in accordance with aspects of the present disclosure.

DETAILED DESCRIPTION

The detailed description set forth below in connection with the appended drawings where like numerals reference like elements is intended as a description of various embodiments of the disclosed subject matter and is not intended to represent the only embodiments. Each embodiment described in this disclosure is provided merely as an example or illustration and should not be construed as preferred or advantageous over other embodiments. The illustrative examples provided herein are not intended to be exhaustive or to limit the claimed subject matter to the precise forms disclosed. Similarly, any steps described herein may be interchangeable with other steps, or combinations of steps, in order to achieve the same or substantially similar result.

In the following description, numerous specific details are set forth in order to provide a thorough understanding of exemplary embodiments of the present disclosure. It will be apparent to one skilled in the art, however, that many embodiments of the present disclosure may be practiced without some or all of the specific details. In some instances, well-known process steps have not been described in detail in order not to unnecessarily obscure various aspects of the present disclosure. Further, it will be appreciated that embodiments of the present disclosure may employ any combination of features described herein.

One representative embodiment of a collapsible seat, generally designated 20, constructed in accordance with the present disclosure is illustrated in FIG. 1. Generally described, the collapsible seat 20 comprises a bottom 24, sides 26 that upwardly extend from around the perimeter of the bottom 24, and a top 28. The top 28, in cooperation with the sides 26 in some embodiments form a concavity 32 suitably dimensioned and configured for receiving and supporting an infant and/or the like. An optional restraint 36 and a headrest 40 may be provided to secure the infant while placed in the cavity 30 and to support the head of the infant, respectively. As will be described in more detail below, the collapsible seat 20 is configured so as to obtain a relatively compact unit for convenient storage and easy transportation during periods of non-use, as shown in FIG. 7.

Turning now to FIGS. 2 and 8-15, one example of the collapsible seat 20 will be described in more detail. As best shown in FIG. 2, the seat 20 may comprise an inflatable seat structure 46 and an outer covering 50. The inflatable seat structure 46 may be formed by an inflatable base section 54 mountable below an inflatable upper section 56. The inflatable base section 54 in one embodiment is generally oval, as shown in the bottom view of FIG. 11, and is generally symmetrical about its longitudinal axis. The inflatable base section 54 may be formed with rounded side walls 60 that interconnect generally flat, parallelly disposed bottom and top walls 62 and 64. The flat bottom wall 62 includes a bottom surface configured to be supported by a support surface, such as a floor of a room, a top of a table, etc. The bottom wall 62, side walls 60, and top wall 64 are constructed of an impermeable, flexible material, such as polyethylene or plasticized polyvinyl chloride (PVC) film, and are glued bonded, adhesive bonded, heat sealed, or otherwise connected in order to form an air tight cavity 68 (See FIG. 14). The inflatable base section 54 is sized and configured for having the strength and stability to support the weight of the inflatable upper section 56 and infant when in use. An air valve 74 is provided for inflating and deflating the air tight cavity 68 of the inflatable base 54.

The inflatable upper section 56 is glue bonded, adhesive bonded, heat sealed, or otherwise connected to the inflatable base 54. The upper section 56 is comprised of a bottom wall 76 (optional), side walls 78, a front wall 80, a back wall 82, and an upper or top wall 84. The walls 76-84 are formed of an impermeable flexible material, such as polyethylene or plasticized polyvinyl chloride (PVC) film, and can be easily fabricated and joined by glue bonding, adhesive bonding, or heat sealing techniques known in the art, among others, in order to form an air tight cavity 88 (See FIG. 14). The inflatable upper section 56 includes a resealable air valve 86 disposed in fluid communication with the cavity 88. Alternatively, the upper section 56 and the base 54 may be interconnected in such a way as to permit inflation of via one of the resealable air valves 74 or 86.

As best shown in FIGS. 2 and 8, 14 and 16, the walls 78-82 of the inflatable upper section 56 upwardly extend from an outer perimeter region of the base section 54. In the embodiment shown, the outer perimeter region of the base section 54 is generally oval. The outer surfaces of the walls 78-82 each have an outward or somewhat convex curvature, the back wall 82 extending higher than the front wall 80, and with a generally wider curve. As shown in FIGS. 15 and 16, the upper section 54 is symmetrical about its longitudinal axis.

The top ends of the walls 78-82 define an oval or egg-shaped opening 92 of a concavity or well 90 when inflated. In the embodiment shown, the well 90 is somewhat shaped like an oval bowl, formed by the concave top wall 84. In that regard, the outer perimeter of the top wall 84 is generally oval or egg-shaped, and is cooperatively sized to interface with top ends of the walls 78-82, thereby forming the opening of the well 90. As shown in the cross sectional view of FIG. 16, the top wall 84 generally curves in a concave manner from side wall 78A to side wall 78B as the top wall 84 extends from the front wall 80 to the back wall 82. In some embodiments, the top ends of the side walls 78A and 78B, along with the front wall 80 and top wall 82, contiguously connect to the outer, outer perimeter of top wall 84 via a top surface 94. As the top wall 84 extends from the front wall 80 to the back wall 82, the top wall 84 forms a shorter, frontwardly inclined front inner wall section 96 (curved from side wall to side wall as shown, for example, in FIG. 16) that supports the infant's legs, and a longer, generally backwardly inclined, inner wall section 98 (curved from side wall to side wall as shown, for example, in FIG. 16).
wall as shown, for example, in FIGS. 16-18) that supports the infants back, as shown in the longitudinal cross-section view of FIG. 14. The inner wall sections 96 and 98 join at the bottom 100 of the well with a gentle curvature for supporting the buttocks region of the infant. In one embodiment, the curvature has a radius of between about 120 mm and 180 mm along the longitudinal center line or axis, designated 104 in FIG. 10, of the upper section 56.

As inflated, the well 90 is suitably dimensioned and configured for receiving and supporting an infant and/or the like while lying in a somewhat prone to inclined, forwardly facing position. In some embodiments, the back inner wall section 98 of the well 90 supports the infant at an inclined angle of between about ten (10) degrees and about 60 degrees, although other angles of inclination are within the scope of the disclosed subject matter. As best shown in FIGS. 1, 8, and 9, the well 90 is sized and configured to somewhat cradle and ensconce the infant in a somewhat seated but inclined, supporting position when placed therein.

FIGS. 20A-20B illustrate another embodiment of the inflatable seat structure 146. The inflatable seat structure is substantially similar to the inflatable seat structure 46 except for the differences that will now be explained. As shown in FIGS. 20A-20B, the upper or top wall 84 of upper section 56 described above is optional. In that regard, the top wall 164 of base section 154 may form the bottom surface of the concavity 190. As such, the front, back, and side walls 178-182 have a somewhat tubular shape, defining cavity 188. In this embodiment, the cavity 188 is generally shaped as an oval ring.

Referring now to FIGS. 1-7, the inflatable seat 20 may optionally include the outer covering 50. The outer covering 50 is sized and configured to overlay at least the upper section 56 is a somewhat snug fashion so as to be somewhat secured to the upper section 56 when the upper section 56 is generally inflated, and in some embodiments, when the upper section 56 is fully inflated. In one embodiment, the outer covering 50 is lace locked to the upper section 56. Alternatively or additionally, snaps, hook and loop fasteners, etc., may be used in other embodiments to releasably secure the outer covering 50 to the upper section 56. As best shown in the rear view of FIG. 6, the covering 50 may provide access to the resealable valve 86. In other embodiments, the outer covering 50 may be designed with patterns, such as stripes, Polka dots, among others, or may be themed, such as with general characters, such as a mouse, cat, dog, etc., or with branded themes such as Disney® characters and the like.

Preferably, the outer covering 50 may be generally soft to the touch and aesthetically pleasing to the infant and/or the like. In one embodiment, the outer covering 50 is constructed from a durable fabric, such as Cordura®. Other materials may be additionally or alternatively employed, including fleece, Polar fleece or other microfiber material, wool, lambs wool, cotton, nylon, polyester, etc. The outer covering 50 may be designed with patterns, such as stripes, Polka dots, among others, or may be themed, such as with general characters, such as a mouse, cat, dog, etc., or with branded themes such as Disney® characters and the like.

Referring now to FIGS. 1-3, the collapsible seat 20 may include additional features, such as a restraint 36 and/or a head rest 40. In the embodiment shown, the head rest 40 is a pillow or other head support structure capable of supporting the infant's head when the infant is placed in the well 90. The head rest 40 is stitched or otherwise secured to the covering 50 at a position on the back wall 92. In some embodiments, the head rest 40 can be an inflatable body, foam packing, and/or the like, and covered, for example, with a soft fabric covering.

The restraint 36 may be any restraint currently employed in infant, baby, and/or toddler seats, for restraining the infant in the seat 20 when placed therein. The restraint 36 may also support the infant in a generally inclined position, among others. In some embodiments, the restraint 36 may include a harness system of the three point type or the five point type. In the embodiment of FIGS. 1-4, the restraint 36 includes leg openings and straps that are positionable around the infant's waist or stomach. The restraint 36 may be stitched or otherwise secured to the outer covering 50 at a proximal portion of the well 90. In other embodiments, the restraint 36 and the head rest 40 are releasably secured to the outer covering 50 in any of a variety of connection techniques known in the art.

Using the collapsible seat 20, which is constructed in accordance with aspects of the present disclosure, will now be described with reference to FIGS. 1-19. When the collapsible seat 20 is not in use, the collapsible seat 20 can be stored in a deflated condition. In the deflated condition, the collapsible seat 20 can be folded, rolled, or otherwise manipulated into a compact, stowable, condition, including, floor example, as shown in FIG. 7. If desired, the collapsible seat 20 in the compact, stowable, condition can be placed within a storage bag for easy transport, etc. In embodiments where the headrest 40 and/or the restraint 36 are removable, these features may be removed prior to deflating and placed within the storage bag for subsequent use. In some embodiments, the collapsible seat 20 includes straps 108 or other structure that maintains the collapsible seat 20 in the compact, stowable, condition. In these embodiments and others, the straps or other structure may either be attached to the seat 20, or detached from the seat 20.

When the collapsible seat 20 is needed for supporting an infant or the like, the base 54 and the upper section 56 are inflated via the valves 74 and 86. This can be readily accomplished by manually exhauling into the valves 74, 86 or by using an auxiliary air system, such as an air pump or with the exhaust port of a wet/dry vacuum. The inflation of the base 54 and upper section 56 will cause the collapsible seat 20 to expand, thereby erecting the walls and forming the well 90. The optional cover 50 may then be placed over at least the upper section 56, and in some embodiments, over both the base section 54 and the upper section 56. The infant may then be placed within the well 90, and if employed, the infant may be positioned so as to be restrained by the restraint 36 and/or have its head supported by the headrest 40.

After use of the collapsible seat 20 and the infant is removed from the collapsible seat 20, the collapsible seat 20 may be deflated by opening the air valves 74 and 86, permitting air within the cavities 68 and 88 to be released. After the collapsible seat 20 is deflated, the collapsible seat 20 may then be folded, rolled or otherwise manipulated into a relatively compact unit for convenient storage and transport during periods of non-use. Prior to storing the collapsible seat 20, the collapsible seat 20 may be cleaned and/or sanitized, as desired.

The principles, representative embodiments, and modes of operation of the present disclosure have been described in the foregoing description. However, aspects of the present disclosure which are intended to be protected are not to be construed as limited to the particular embodiments
disclosed. Further, the embodiments described herein are to be regarded as illustrative rather than restrictive. It will be appreciated that variations and changes may be made by others, and equivalents employed, without departing from the spirit of the present disclosure. Accordingly, it is expressly intended that all such variations, changes, and equivalents fall within the spirit and scope of the present disclosure.

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. An inflatable seat having a concavity for supporting an infant, comprising:
   - an inflatable base section having a flat bottom surface configured to rest on a support surface and an upper perimeter region; and
   - an inflatable upper section having a longitudinal center line, the inflatable upper section including front and back walls and first and second side walls each upwardly extending from the upper perimeter region of the inflatable base section, the upper ends of the side walls forming a generally oval, forwardly facing opening of the concavity, wherein the concavity is formed by a contiguous support surface that includes a rearwardly inclined back support surface section and a forwardly inclined front support surface section.

2. The inflatable seat of claim 1, wherein the support surface has a general curvature from the upper end of the first side wall to the upper end of the second side wall as the support surface extends from the front wall to the back wall.

3. The inflatable seat of claim 1, wherein the flat bottom surface is ovaly shaped.

4. The inflatable seat of claim 1, wherein the upper perimeter region is generally ovaly shaped.

5. The inflatable seat of claim 1, wherein the inflatable upper section is symmetrical about the longitudinal center line.

6. The inflatable seat of claim 1, further comprising an infant restraint mounted to the upper section.

7. The inflatable seat of claim 1, further comprising a headrest positioned on the a rearwardly inclined back support surface section.

8. The inflatable seat of claim 1, further comprising a removable, flexible cover that extends over at least the upper section.

9. The inflatable seat of claim 8, wherein the flexible cover includes one or a theme and pattern.

10. An inflatable seat having a concavity for supporting an infant, comprising:
    - an inflatable base section having an flat, ovaly shaped, bottom surface configured to rest on a support surface, and an ovaly shaped, upper perimeter region;
    - an inflatable upper section having a longitudinal center line, the inflatable upper section including outwardsly curved front and back walls and first and second side walls each upwardly extending from the upper perimeter region of the inflatable base section, the upper ends of the side walls forming a generally oval, forwardly facing opening of the concavity; and
    - a removable, flexible cover that extends over at least the upper section.

11. The inflatable seat of claim 10, wherein the forwardly facing opening is disposed generally transverse to the inflatable base section.

12. The inflatable seat of claim 10, wherein a bottom surface of the concavity includes a contiguous support surface having a rearwardly inclined back support surface section and a forwardly inclined front support surface section.

13. The inflatable seat of claim 12, wherein the inflatable upper section is symmetrical about the longitudinal center line.

14. An inflatable seat, comprising:
    - an inflatable seat structure defining a concavity suitably dimensioned and configured for receiving and supporting an infant; and
    - an outer covering disposed over at least the concavity of the inflatable seat structure.