

BOTTOM BOARD FOR A PLAYARD**CROSS REFERENCE TO RELATED APPLICATIONS**

[0001] This application claims the benefit of U.S. Provisional Application No. 63/708,876, filed October 18, 2024, and U.S. Provisional Application No. 63/592,805, filed October 24, 2023, which are incorporated by reference as if fully set forth.

TECHNICAL FIELD

[0002] The present disclosure generally relates to a playard assembly, and is specifically directed to the mattress arrangement for a playard topper assembly.

BACKGROUND

[0003] A playard is a framed enclosure that provides a safe and comfortable space for an infant or young child (hereinafter referred to as a "child") to sleep and play. The playard typically includes a support structure (e.g. a frame or playard frame) that outlines an interior space of the playard. The playard also typically includes soft padding placed within the interior space to provide a partially enclosed cushioned or padded space to support the child.

[0004] Playards can be foldable and/or collapsible to improve portability. For example, the caregiver may fold the playard for storage and/or transport and unfold the playard for use. It is also desirable to have a foldable playard configuration for shipping purposes. In order to be fully foldable and compact, there are known playard frames that have X-shaped frame assemblies as cross supports between vertical supports or legs. Other types of foldable frame assemblies, which can include tubes or frame elements with a pivoting connection, are also well known. These X-shaped frame assemblies or other folding frame assemblies can collapse and thereby become more compact in a folded state. However, these frame assemblies typically lack a smooth upper surface along the cross supports. This lack of a continuous and uninterrupted support surface along the cross supports can make it difficult to attach add-on components, such as topper assemblies, to the playard frame.

[0005] A bassinet or changing surface may be a standalone assembly, or may be selectively mounted to a playard as a topper. Each of a playard assembly, bassinet, or topper may include a mattress assembly to provide a support surface for a child. The mattress assembly may be rigid or semi-rigid and may be designed to be covered with a fitted sheet in use.

SUMMARY

[0006] The present disclosure is directed to a playard assembly including a combination of a playard and a topper assembly in one example, as well as a standalone topper assembly or standalone playard in other examples. The playard assembly and/or topper can comprise a mattress assembly.

[0007] In accordance with one aspect, a base board for a topper assembly connectable to a playard comprises a board body, the board body defining a plurality of ribs extending along a length of the board body, the board body further defining at least one hole on at least one of the plurality of ribs.

[0008] Each rib can have a top surface with a front side, a rear side, and a top side between the front side and the rear side, and one hole of the at least one holes can be located on the front side of one rib of the plurality of ribs. Another of the at least one holes can be located on the rear side of the one rib of the plurality of ribs. Each rib can have a top surface with a front side, a rear side, and a top side between the front side and the rear side, and a first hole of the at least one holes can be located on the front side of a first rib of the plurality of ribs, and a second hole of the at least one holes can be located on the rear side of a second rib of the plurality of ribs. The first and second ribs can be on respective first and second halves of the base board. The base board can further include at least two sections pivotably connected to each other. At least one hinge can connect the at least two sections. The at least one hinge can be at least partially integrally formed with at least one of the at least two sections. The at least two sections can include a first section, a second section and a third section. The second section can be connected to each of the first section and the third section. The second section can have a width that is less than a width of the first and third sections. Each of the sections can include at least one rib, each rib has a top surface with a front side, a rear side, and a top side between the front side and the rear side.

The at least one rib of the first section can include at least one hole on the front side of the rib, and the at least one rib of the third section can include at least one hole on the rear side of the rib.

[0009] In accordance with another aspect, a mattress assembly for a topper assembly connectable to a playard comprises a top layer, a bottom layer, and a base board positioned between the top layer and the bottom layer, the base board including a board body, the board body defining a plurality of ribs extending along a length of the board body, the board body further defining at least one hole on at least one of the plurality of ribs.

[0010] The top layer can include a first foam, and the bottom layer can include a second foam. Each rib can have a top surface with a front side, a rear side, and a top side between the front side and the rear side, and one hole of the at least one holes can be located on the front side of one rib of the plurality of ribs. Another of the at least one holes can be located on the rear side of the one rib of the plurality of ribs. Each rib can have a top surface with a front side, a rear side, and a top side between the front side and the rear side, and a first hole of the at least one holes can be located on the front side of a first rib of the plurality of ribs, and a second hole of the at least one holes can be located on the rear side of a second rib of the plurality of ribs. The first and second ribs can be on respective first and second halves of the base board. The base board can further include at least two sections pivotably connected to each other. At least one hinge can connect the at least two sections. The at least one hinge can be at least partially integrally formed with at least one of the at least two sections. The at least two sections can include a first section, a second section and a third section. The second section can be connected to each of the first section and the third section. The second section can have a width that is less than a width of the first and third sections. Each of the sections can include at least one rib, each rib has a top surface with a front side, a rear side, and a top side between the front side and the rear side. The at least one rib of the first section can include at least one hole on the front side of the rib, and the at least one rib of the third section can include at least one hole on the rear side of the rib.

[0011] Additional embodiments are described below and in the claims.

BRIEF DESCRIPTION OF THE DRAWINGS

[0012] The foregoing Summary and the following Detailed Description will be better understood when read in conjunction with the appended drawings, which illustrate a preferred embodiment of the disclosure. In the drawings:

[0013] Figure 1 is a perspective view of a playard assembly according to one example.

[0014] Figure 2 is a top perspective view of the playard assembly.

[0015] Figure 3 is a side view of the playard assembly with a frame in a partially exposed state.

[0016] Figure 4 is a side perspective view of the playard assembly with the topper assembly in a first state.

[0017] Figure 5 is a side perspective view of the playard assembly with the topper assembly in a second state.

[0018] Figure 6 is a top perspective view of the topper assembly.

[0019] Figure 7 is a perspective view of the playard frame in a folded state.

[0020] Figure 8 is a perspective view of the playard frame in a folded state and arranged within the topper assembly.

[0021] Figure 9 is a top magnified perspective view of a playard frame according to one example.

[0022] Figure 10 is a perspective view of a topper assembly according to another example.

[0023] Figure 11 illustrates a perspective view of a playard and topper assembly according to another example.

[0024] Figure 12 illustrates a perspective view of the topper assembly of Figure 11.

[0025] Figure 13 is a perspective view of a playard assembly according to another example.

[0026] Figure 14 is a side perspective view of a playard assembly with a topper assembly in a first state.

[0027] Figure 15 is a side perspective view of the playard assembly with the topper assembly in a second state.

[0028] Figure 16 is a front perspective view of an exemplary mattress base board in accordance with the present disclosure.

[0029] Figure 17 is a rear perspective view of the mattress base board.

[0030] Figure 18 is a cut-away front perspective view of the mattress base board.

[0031] Figure 19 is a front perspective view of the mattress base board.

[0032] Figure 20 is an enlarged cross-sectional view taken along the line 20-20 in Figure 19.

[0033] Figure 21 is a bottom view of the mattress base board.

[0034] Figure 22 is a top view of the mattress base board.

[0035] Figure 23 is a front cross-sectional perspective view of the mattress base board.

[0036] Figure 24 is a rear cross-sectional perspective view of the mattress base board.

[0037] Figure 25 is a top cross-sectional view of the mattress base board.

[0038] Figure 26 is an enlarged portion of Figure 25.

[0039] Figure 27 is a side cross-sectional view of the mattress base board.

[0040] Figure 28 is a perspective exploded view of a mattress assembly in accordance with the present disclosure.

[0041] Figure 29 is a bottom view a second exemplary mattress base board in accordance with the present disclosure.

[0042] Figure 30 is a top view of the second mattress base board.

[0043] Figure 31 is an end view of the second mattress base board in a first folded configuration.

[0044] Figure 32 is a top view the second mattress base board in a second folded configuration.

[0045] Figure 33 is a bottom perspective view the second mattress base board.

[0046] Figure 34 is a bottom oblique perspective view of the second mattress base board.

[0047] Figure 35 is a top view of the second mattress base board and mattress pad cover in accordance with the present disclosure.

[0048] Figure 36 is a bottom view of the second mattress base board and mattress pad cover.

[0049] Figure 37 is a top view of the second mattress base board partially within the mattress pad cover.

DETAILED DESCRIPTION

[0050] Certain terminology is used in the following description for convenience only and is not limiting. The words "front," "rear," "upper" and "lower" designate directions in the drawings to which reference is made. The words "inwardly" and "outwardly" refer to directions toward and away from the parts referenced in the drawings. A reference to a list of items that are cited as "at least one of a, b, or c" (where a, b, and c represent the items being listed) means any single one of the items a, b, or c, or combinations thereof. This terminology includes the words specifically noted above, derivatives thereof and words of similar import.

[0051] As shown in Figures 1-8, a playard assembly 10 is disclosed herein that generally can include a playard 20 and a topper assembly 40. The present disclosure generally provides an improved connection interface between the playard 20 and the topper assembly 40. As used in this context, the term connection interface refers to an interface between the two relevant components that can reliably connect or attach the two components with one another, that also allows for selective disengagement or detachment.

[0052] Additionally, the present disclosure provides a topper assembly 40, which can be used with a variety of playards, and is configured to provide connectors to the playard 20 in corner regions of the topper assembly 40. This allows the topper assembly 40 to connect to playard frames with varying configurations in which a smooth, continuous, or uninterrupted upper connection area may not be available, such as in playards having X-frame assemblies as cross supports between the associated vertical supports or legs.

[0053] The playard 20, which is shown in detail in Figures 1 and 6, can include a frame 22, also referred to as a playard frame. The frame 22 can include various sub-components, such as tubes, supports, rods, poles, etc. The frame 22 can include a plurality of corner posts 24a, 24b, 24c, 24d, which are also referred to as legs or vertical supports. While four corner posts 24a, 24b, 24c, 24d are shown in the Figures, one of ordinary skill in the art would understand that in other configurations, additional or fewer corner posts can be provided. For example, the features disclosed herein can be adapted for a hexagon shaped playard, which would include six corner posts. Additionally, vertical supports or legs can be provided at intermediate areas between the corner posts for additional support.

[0054] The playard 20 can comprise a plurality of X-frame assemblies 27 which are each connected at a first end 27a to a first one of the corner posts 24a, 24b, 24c, 24d and at a second end 27b to a second one of the corner posts 24a, 24b, 24c, 24d. As shown in Figure 3, the X-frame assembly 27 can include more than one "X" shaped support between adjacent corner posts 24a, 24b. Although only one X-frame assembly 27 is visible in Figure 3, one of ordinary skill in the art would understand that each side of the frame includes an X-frame assembly. Various configurations of the X-frame assemblies 27 can be used, as one of ordinary skill in the art would appreciate based on this disclosure. Cross supports having an X-frame configuration are desirable in playards due to the ability for the X-frame assemblies to fold. As shown in Figure 3, a top surface area (A) of the X-frame assembly 27 lacks a smooth upper edge or portion, which necessitates that the topper assembly 40 attaches to the playard 20 in regions away from the X-frame assemblies.

[0055] The playard 20 further comprises at least one playard connector 25a, 25b, 25c, 25d that is configured to engage with at least one topper connector 45a, 45b, 45c, 45d defined on the topper assembly 40. The at least one playard connector 25a, 25b, 25c, 25d can be connected to at least one of the plurality of corner posts 24a, 24b, 24c, 24d. The at least one playard connector 25a, 25b, 25c, 25d can be defined as a cap or shell that attaches to the corner posts 24a, 24b, 24c, 24d. The at least one

playard connector 25a, 25b, 25c, 25d can be integrally defined with a respective one of the plurality of corner posts 24a, 24b, 24c, 24d in another example.

[0056] The topper assembly 40 comprises at least one topper connector 45a, 45b, 45c, 45d configured to mate with the at least one playard connector 25a, 25b, 25c, 25d to secure the topper assembly 40 with the playard 20. As used in this context, the term mate means to engage with each other, such as via a snap fit or clearance fit, in one example. In one example, the topper connector 45a, 45b, 45c, 45d is a male type connector and the playard connector 25a, 25b, 25c, 25d is a female type connector. One of ordinary skill in the art would recognize based on this disclosure that this arrangement could be reversed such that the topper connector 45a, 45b, 45c, 45d is a female type connector and the playard connector 25a, 25b, 25c, 25d is a male type connector. This specific configuration is illustrated in Figures 12A-15, which are discussed in more detail herein. Based on the configuration disclosed herein, the topper assembly 40 is configured to be attached to the playard 20 on a flat plane defined by the upper ends of the corner posts 24a, 24b, 24c, 24d.

[0057] The playard connector 25a, 25b, 25c, 25d is at least partially defined at a playard corner region 21a, 21b, 21c, 21d, and the topper connector 45a, 45b, 45c, 45d is at least partially defined at a topper corner region 41a, 41b, 41c, 41d. As used in this context, the term corner region means a region that is at least partially defined at an intersection of two sides or edges which form an angle with each other. For example, with respect to the playard 20, the playard corner region 21a, 21b, 21c, 21d is defined at the intersection of two cross supports forming an angle, i.e. the intersection of two X-frame assemblies. With respect to the topper assembly 40, the topper corner region 41a, 41b, 41c, 41d can be defined at the intersection of two support frames 50a, 50b of a topper frame 50, as shown in Figure 5. As also shown in Figure 5, the topper frame 50 is coplanar with the topper connector 45a and the engagement element 46. No additional frame members, tubes, or other structures are required on the topper assembly 40 to define the connector interface with the playard 20.

[0058] The playard 20 can further comprise a soft goods assembly 28 that is configured to attach to the frame 22. The soft goods assembly 28 can comprise at least one opening 28a, 28b, 28c, 28d and the at least one playard connector 25a, 25b, 25c, 25d can be configured to extend out of or above the at least one opening 28a, 28b, 28c, 28d. In one example, the soft goods assembly 28 can include four openings 28a, 28b, 28c, 28d. The openings 28a, 28b, 28c, 28d can be defined at a corner edge of the soft goods assembly 28. For example, the openings 28a, 28b, 28c, 28d can be defined in an upper region of corner seams of the soft goods assembly 28.

[0059] The soft goods assembly 28 can define a continuous perimeter, and a portion of the soft goods assembly 28 can be configured to extend uninterrupted around an upper portion of an outer perimeter of the playard 20 as well as an inner perimeter of the playard 20. For example, an upper portion 29a of the soft goods assembly 28 can wrap over an upper portion of the frame 22 (including the X-frame assemblies), and a lower portion 29b of the soft goods assembly 28 can hang inside of the interior space defined by the frame 22. The upper portion 29a can be formed from a reinforced, durable material, such as nylon, while the lower portion 29b can be formed from a mesh fabric or other material. As shown in the Figures, when the soft goods assembly 28 is attached to the playard 20, the X-frame assemblies are hidden and not visible, and only the playard connectors 25a, 25b, 25c, 25d are visible along a top surface of the playard assembly 10. The soft goods assembly 28 can also wrap around an outer surface of an upper region of each of the corner posts 24a, 24b, 24c, 24d.

[0060] The playard connector 25a, 25b, 25c, 25d and the topper connector 45a, 45b, 45c, 45d can be embodied according to any number of shapes, configurations, profiles, etc. In one example, the playard connector 25a, 25b, 25c, 25d includes a receptacle 26, which is shown according to one exemplary configuration in Figure 9. The receptacle 26 can be arranged such that it faces inward to an interior space or area defined by the playard 20. One of ordinary skill in the art would understand that the orientation of the receptacle 26 can vary. The receptacle 26 can be formed as a pocket or other structure configured to receive and selectively retain another component, i.e. a portion of the topper

connector 45a, 45b, 45c, 45d. The receptacle 26 can have a generally complementary profile to a portion of the topper connector 45a, 45b, 45c, 45d. In one example, the receptacle 26 can include a pocket with an upper lip, shoulder, or edge 26a that is configured to temporarily engage with a portion of the topper connector 45a, 45b, 45c, 45d during an attachment or connection phase. A bottom portion of the receptacle 26 can also include a bottom support 26b on which the topper assembly 40 is configured to rest or abut when attached to the playard 20. Side portions, such as guide portions 26c, 26d can also be provided within the receptacle 26 which ensure that the topper connector 45a, 45b, 45c, 45d remains in the correct position within the playard connector 25a, 25b, 25c, 25d. While a specific geometry of the receptacle 26 is shown in Figure 9, one of ordinary skill in the art would understand this geometry can be modified. Additionally, in one example, the receptacle 26 could instead be a protrusion, and a receptacle could instead be provided on the topper connector 45a, 45b, 45c, 45d.

[0061] The topper connector 45a, 45b, 45c, 45d can include an engagement element 46 that is configured to selectively engage with the at least one playard connector 25a, 25b, 25c, 25d, such as inside of the receptacle 26. The engagement element 46 can snap into position to be retained within the receptacle 26, in one example. The engagement element 46 can be formed as protrusion, prong, or other structure extending outwardly from a remainder of the topper connector 45a, 45b, 45c, 45d. The engagement element 46 can be configured to be biased to a first position via a biasing element (such as a spring), which can be provided internally with respect to the structure of the topper connector 45a, 45b, 45c, 45d. In one example, the engagement element 46 can be a spring-loaded connector. The engagement element 46 can be configured to be pushed or driven away from the first position to a second position via engagement with a portion of the playard connector 25a, 25b, 25c, 25d, such as a lip, shoulder, edge or other structure (i.e. edge 26a) defined within the receptacle 26. For example, a user can press or push the topper assembly 40 in a downward direction with respect to the playard 20 such that the engagement element 46 flexes or is temporarily displaced as the engagement element 46 temporarily contacts the playard connector 25a, 25b, 25c, 25d (i.e. the edge 26a). Once the engagement

element 46 clears or is displaced beyond a portion of the playard connector 25a, 25b, 25c, 25d, then the engagement element 46 returns to its initial position and is configured to retain the topper assembly 40 relative to the playard 20. In this attached or connected state, a portion of the topper assembly 40 is configured to be supported in the vertical direction by at least a portion of the playard connector 25a, 25b, 25c, 25d, and more specifically by the bottom support 26b.

[0062] When a user wishes to disconnect the topper assembly 40 from the playard 20, the user presses a portion of the engagement element 46 to flex or temporarily displace the engagement element 46 to the second position such that the engagement element 46 is disengaged from the playard connector 25a, 25b, 25c, 25d. For example, the engagement element 46 can be flexed such that the engagement element 46 is shifted away from a lip, should or other retention element formed on the playard connector 25a, 25b, 25c, 25d. The receptacle 26 of the playard connector 25a, 25b, 25c, 25d can be dimensioned such that upward flexing of the engagement element 46 can occur when a user wishes to disconnect the topper assembly 40 from the playard 20. In one example, a user needs to only engage a single one of the engagement elements 46 in order to release or detach the topper assembly 40 from the playard 20. Once the single engagement element 46 is released from a corresponding receptacle 26, then the entire topper assembly 40 can be maneuvered (i.e., angled, slid, etc.) such that the remaining engagement elements 46 slide out of the other receptacles 26.

[0063] In order to connect the topper assembly 40 to the playard 20, in one example, the engagement element 46 can be configured to be temporarily flexed or driven to the second position by pressing the topper assembly 40 downward relative to the playard 20. Accordingly, a user does not have to manually press the engagement element 46 itself when attaching the topper assembly 40 to the playard 20, and instead the attachment process or step only requires a user to press the topper assembly 40 downward relative to the playard 20 with the topper connectors 45a, 45b, 45c, 45d aligned with the playard connector 25a, 25b, 25c, 25d.

[0064] The engagement element 46 can include an actuation region 47 configured to be engaged by a user. The actuation region 47 can be defined as a button, ridge, lip, or ledge, for example. Engagement with the actuation region 47 can flex or pivot the engagement element 46, thereby allowing the topper assembly 40 to be released from the playard 20.

[0065] As shown in Figures 4-6, the topper assembly 40 can comprise a topper base 52, which generally defines a support surface for a child. The topper base 52 can have a first side 53a defining a changing area, and a second side 53b defining a bassinet area. The topper assembly 40 can be configured to be completely detached relative to the playard 20. The topper assembly 40 can be configured to be connected to the playard 20 in both: (i) a changing mode in which the first side 53a is upwards facing (shown in Figure 4), and (ii) a bassinet mode in which the second side 53b is upward facing (shown in Figure 5). In the bassinet mode shown in Figure 5, the topper base 52 is in a relatively lower vertical position such that sidewalls of the topper assembly 40 are deeper to define a space for reliably and safely holding a child. In the changing mode shown in Figure 4, the topper base 52 is in a relatively higher vertical position that is more suitable for a user to change a child's diaper or garments. In this way, the topper assembly 40 can be considered to be a reversible topper assembly 40 which can be manually installed or connected to the playard 20 in various modes or states. The topper assembly 40 thereby eliminates the need for multiple topper assemblies each having different modes or configurations.

[0066] The topper connectors 45a, 45b, 45c, 45d can be exposed in both the changing mode and the bassinet mode. This provides for easier access for a user to manually disengage the engagement elements 46 relative to the playard connectors 25a, 25b, 25c, 25d. Additionally, the interface between the playard connector 25a, 25b, 25c, 25d and the topper connector 45a, 45b, 45c, 45d remains accessible to a user regardless of the mode of use, and is not covered, for example, by the soft goods assembly 28.

[0067] As shown in Figure 6, the topper assembly 40 can include a topper frame 50 including the topper connectors 45a, 45b, 45c, 45d. The topper frame 50 can comprise at least one rod or frame

member that defines an outer perimeter of the topper assembly 40. The topper frame 50 can include four rods each extending between the topper connectors 45a, 45b, 45c, 45d, in one example.

[0068] The topper assembly 40 can include a topper support 54 attached to the topper frame 50. The topper support 54 can include a semi-rigid frame or plate structure. The topper support 54 can be configured to bend or flex under a predetermined amount of force or pressure, but is otherwise configured to be rigid and either extend upward (i.e. in the changing mode) or downward (i.e. in the bassinet mode) relative to the topper frame 50 depending on the orientation of the topper assembly 40. The topper support 54 can be formed from plastic, in one example. One of ordinary skill in the art would understand that various materials could be used for the topper support 54.

[0069] The topper assembly 40 can further comprise a topper coupling 56, which can be a fabric connector, that is attached to the topper base 52 on one end and the topper support 54 on another end. The topper coupling 56 can be formed from a mesh material, in one example. One of ordinary skill in the art would understand that various materials could be used for the topper coupling 56.

[0070] The topper connectors 45a, 45b, 45c, 45d can be positioned on an outer perimeter of the topper assembly 40 and spaced away from the topper base 52 (i.e. where a child is supported) by at least the topper coupling 56 and the topper support 54. This provides a safety feature in that the child is physically separated from the topper connectors 45a, 45b, 45c, 45d to prevent an inadvertent actuation of the engagement element 46. An additional safety aspect is provided based on the topper assembly 40 resting downward against the playard 20. Removal of the topper assembly 40 from the playard 20 requires an upward force, which is prevented both due to a child being supported within the topper assembly 40, as well as the engagement element 46 requiring manual actuation to release the topper assembly 40 from the playard 20.

[0071] The topper assembly 40 also provides a more intuitive and uniform arrangement for attaching the assembly 40 to the playard 20 as compared to other attachment means. All of the topper connectors 45a, 45b, 45c, 45d are rigidly supported with each other via the topper frame 50, thereby

ensuring that all of the topper connectors 45a, 45b, 45c, 45d generally move in unison. This is desirable for users in order to provide a simplified attachment or connection interface, as compared to other arrangements that may require users to attach individual straps or hooks from the topper to the playard frame. This also provides a safety feature based on all of the topper connectors 45a, 45b, 45c, 45d being rigidly linked and therefore each of the topper connectors 45a, 45b, 45c, 45d will be automatically positioned adjacent to a respective one of the playard connectors 25a, 25b, 25c, 25d during installation, as opposed to having connectors on different straps or other non-rigid supports.

[0072] As disclosed herein, a connection interface between a topper assembly 40 and a playard 20 is provided in which the only connections between the topper assembly 40 and the playard 20 are provided at corner regions of each of the respective components. In one example, there is no additional support or interface, i.e. intermediate supports or connectors, provided at the regions between the corners of the topper assembly 40 and the playard 20.

[0073] As shown in Figures 7 and 8, the playard 20 is foldable and in a folded state, the playard 20 can fit within a perimeter defined by the topper assembly 40. While the topper assembly 40 is shown in an assembled state in Figure 8, one of ordinary skill in the art would understand that the topper assembly 40 can also be folded. This arrangement allows for a user to compactly fold and pack the entire playard assembly 10 for traveling or storage.

[0074] Figure 9 illustrates another example for a playard assembly 210 in which a receptacle (i.e. a female-type connector) is defined on corner regions of the topper assembly 240 and an engagement element (i.e. a male-type connector) is defined on corner regions of the playard 220. The general function and operation of the playard assembly 210 is otherwise be identical to the playard assembly 10, unless specific features are further defined herein.

[0075] Figure 9 illustrates further aspects of the interface between the topper assembly 240 and the playard 220. As shown in Figure 9, the playard connector 225 can be defined as a housing or

structure above a corner post 224 of the playard 220. The corner post 224 can define pivots (P) for the X-frame assemblies 227.

[0076] In one configuration, the topper assembly 40 can include a tubular structure (i.e. topper frame 50 and support frames 50a, 50b), as shown in Figures 1-6. In another configuration, as shown in Figures 7 and 8, the topper assembly 140 can instead include side supports 50a', 50b', 50c', 50d' that can be formed from polyurethane boards and which can be laminated relative to a topper soft goods 51. One of ordinary skill in the art would understand that the construction of the topper assembly can vary.

[0077] As shown in the Figures, the topper assembly 40 can have a size or profile that is configured to entirely fill an interior perimeter defined by the playard 20. This is desirable such that each corner post 24a, 24b, 24c, 24d of the playard 20 can be utilized to serve as a connection region for the topper assembly 40. One of ordinary skill in the art would understand that the dimensions of the topper assembly 40 could vary.

[0078] As shown in Figure 10, another topper assembly 440 can be provided that also includes a frame structure 442. The topper assembly 440 can also include first frames 442a and second frames 442b arranged along each side of the topper assembly 440. Corner frame connectors 444 can be provided that are configured to attach, connect, or otherwise be linked to the first frames 442a and the second frames 442b. The corner frame connectors 444 can be formed as plate-like structures that are curved and are configured to be arranged in the corner regions of the topper assembly 440. In order to attach the frames to the corner frame connectors 444, the second frames 442b can include bent end portions that are configured to be slid into pockets or receptacles 444a defined on the corner frame connectors 444. This connection can be a press fit, clearance fit, or snap fit connection. In one example, the ends of the second frames 442b can include enlarged head portions 442b' that are configured to be retained by the corner frame connectors 444. The first frames 442a likewise are configured to be retained with the corner frame connectors 444. The connection between the first frames 442a and the corner frame connectors 444 can be provided via engagement with a slot or other retaining structure 444b

defined by the corner frame connectors 444. The topper connectors 445 can be configured to also be attached to the corner frame connectors 444. The topper connectors 445 can include a receptacle 446 configured to receive an engagement element or other portion of the playard to retain the topper assembly 440 with the playard.

[0079] The topper assembly 440 can be otherwise similar to the topper assembly 40 and are configured to be connected or attached to a topper soft goods assembly, which can include a topper base 52 (which is reversible for a bassinet mode or changing area mode), topper coupling 56, etc. The topper assembly 440 is modular and configured to be disassembled, such that a user can remove the frame and compactly store the topper assembly when not in use.

[0080] Referring to Figures 11-12, in one example, a playard assembly 520 having a frame 522 including a plurality of corner posts 524a, 524b, 524c, 524d and a plurality of X-frame assemblies 527 can also be provided. As shown in the upper region of the frame 522, a topper assembly 540 is further provided that includes a first rim 542, which can include two frame halves 542a, 542b, and a second rim 543, which can include two frame halves 543a, 543b. One of ordinary skill in the art would understand that the first and second rims 542, 543 can be formed from a single unitary frame member, two frame halves, or more than two frame elements or components.

[0081] At least one frame connector 544a, 544b can be included that provides a structural connection between the first and second rims 542, 543. In one example, the frame connector 544a, 544b can include two frame connectors that are arranged on opposing sides of the first and second rims 542, 543. In one configuration, the frame connectors 544a, 544b can be arranged on the relatively shorter sides of the first and second rims 542, 543. However, one of ordinary skill in the art would understand that the frame connectors 544a, 544b could be arranged on the relatively longer sides of the first and second rims 542, 543. The topper assembly 540 can also include a topper base 552 that is configured to define a bottom support surface. Soft goods can be provided to attach the topper base 552 with the first or second rims 542, 543.

[0082] At least one toppler connector 545a, 545b, 545c, 545d can be provided for connecting the toppler assembly 540 to the frame 522. The at least one toppler connector 545a, 545b, 545c, 545d can be configured to attach or connect to at least one playard connector 525a, 525b, 525c, 525d. Various connections can be provided between the playard connectors 525a, 525b, 525c, 525d and the toppler connectors 545a, 545b, 545c, 545d.

[0083] The toppler assembly 540 can include at least one actuator 547, which in one example can include a handle or paddle. The at least one actuator 547 can include two actuators 547 that are each arranged in a respective region of the frame connectors 544a, 544b. One of ordinary skill in the art would understand that the actuator 547 can be arranged in another position. The actuator 547 can be configured to drive or actuate a driven actuator member 548a. The driven actuator member 548a can be attached to an actuator arm 548b that extends between the actuator 547 and the driven actuator member 548a. The driven actuator member 548a can be configured to move into and out of engagement with a retention element 532 formed on the playard connectors 525a, 525b, 525c, 525d. The retention element 532 can include a protrusion, prong, or other structure that is configured to mate or engage with the driven actuator member 548a. The retention element 532 can be a spring-loaded tab or connector, in one example. The driven actuator member 548a can be configured to be selectively displaced, such as in a lateral inward direction, in one example. One of ordinary skill in the art would understand that various configurations can be used such that a manual force imparted on the actuator 547 drives various elements to control engagement or disengagement with a corresponding element on the playard connectors 525a, 525b, 525c, 525d.

[0084] The actuator 547 can be arranged on the lateral rim portions of the first and second rims 542, 543 as opposed to the longitudinal rim portions of the first and second rims 542, 543. The lateral and longitudinal directions are annotated in Figure 11.

[0085] Referring to Figure 13, another example playard assembly is illustrated and identified generally by reference numeral 1520. The playard 1520 is similar in most aspects to the playard 520 and

has a frame 1522 including a plurality of corner posts 1524a, 1524b, 1524c, 1524d supporting a plurality of playard connectors 1525a, 1525b, 1525c, 1525d fixed to an upper end of the corner posts 1524a, 1524b, 1524c, 1524d. A plurality of sliding supports 1526a, 1526b, 1526c, 1526d are supported for sliding movement on the corner posts 1524a, 1524b, 1524c, 1524d, and a plurality of X-frame assemblies 1527 are connected to respective playard connectors 1525a, 1525b, 1525c, 1525d and sliding supports 1526a, 1526b, 1526c, 1526d. Sliding supports 1526a, 1526b, 1526c, 1526d are supported for sliding movement on corner posts 1524a, 1524b, 1524c, 1524d between a position with an expanded state of the playard assembly 1520 and a position spaced apart from the playard connectors 1525a, 1525b, 1525c, 1525d (a collapsed state of the playard assembly 1520). The sliding supports 1526a, 1526b, 1526c, 1526d are connected to lower ends of respective X-frame assemblies 1527 and facilitate expanding and collapsing of the playard assembly 1520.

[0086] In this example, the sliding supports 1526a, 1526b, 1526c, 1526d are releasably securable to the playard connectors 1525a, 1525b, 1525c, 1525d to maintain the playard assembly 1520 in an expanded state. The playard connectors 1525a, 1525b, 1525c, 1525d each include a latch 1652 adapted to releasably engage a catch 1654 of a sliding support 1650 (e.g., cooperating coupling members). The catch 1654 can be a slot, recess, lip or other structure of the sliding support 1650, for example. In an example, each latch 1652 is pivotably mounted to a playard connector 1525a, 1525b, 1525c, 1525d for pivoting movement between an engaged position for releasably securing a sliding support 1526a, 1526b, 1526c, 1526d in the position shown in Figure 24 and a disengaged position for allowing the sliding support 1526a, 1526b, 1526c, 1526d to be displaced downwardly from the position shown in Figure 24. An actuator portion 1656 of the latch 1652 can be depressed by a user to move the latch 1652 to the disengaged position. A biasing element (not shown) generally urges the latch 1652 towards the engaged position.

[0087] As shown in the upper region of the frame 1522, a topper assembly 1540 is further provided that includes a first rim 1542, which can include two frame halves 1542a, 1542b, and a second

rim 1543, which can include two frame halves 1534a, 1543b. One of ordinary skill in the art would understand that the first and second rims 1542, 1543 can be formed from a single unitary frame member, two frame halves, or more than two frame elements or components.

[0088] Referring to FIGS. 14-28, an example mattress assembly is shown and identified generally by reference numeral 2000. The mattress assembly 2000 disclosed herein is applicable to a mattress for any of various structures such as a playard, topper, bassinet, crib, sleeper, stroller, or the like.

[0089] In embodiments, the mattress assembly 2000 may include a board 2004 (also referred to as a frame) that is rigid or semi-rigid. In certain embodiments, the mattress board 2004 may be a unitary board (e.g., integrally formed of the same material by the same process). The board 2004 may be shaped to promote airflow through the device, for example being corrugated or undulating including a plurality of ribs 2008. Additionally, vent holes 2012 may be provided throughout the board 2004.

[0090] Each rib 2008 has a top surface with a front side FS, a rear side RS, and a top side TS between the front side FS and the rear side RS. In various embodiments, one or more vent holes 2012 can be located on the front sides FS, rear sides RS, and/or top sides TS of the ribs 2008, as described in further detail below. In some embodiments, a first half of the board 2004 can have vent holes exclusively on the front sides FS and/or top sides TS of the ribs 2008 and a second half of the board can have vent holes exclusively on the rear sides RS and/or top sides TS of the ribs 2012. Such configuration can help channel heat and/or moisture away from a central portion of the board 2004.

[0091] As shown in FIG. 28, the board 2004 may be provided as part of the mattress assembly 2000 which is a multi-layer mattress assembly. The layers of the mattress assembly 2000 can include, for example, the board 2004. On a lower side of the board 2004, a foam layer 2016 can be sandwiched between an upper polymer layer 2020 and a lower vinyl layer 2024. On an upper side of the board 2004, several additional layers are supported including, from top to bottom, a top layer 2028 (e.g., fabric such as cotton), and sandwich foam layer 2030, a mattress foam layer 2032, a sandwich foam layer 2034 and

a mesh layer 2038. One or more of the illustrated layers may be omitted or duplicated. The illustrated order of layers may be modified. Additional conventional layers may be included. As shown, upper layers are formed of materials that allow or promote ventilation (e.g., vertical airflow) therethrough, e.g., away from an occupant on top of the mattress assembly. The mattress board 2004 allows for further ventilation in lateral (e.g., horizontal) directions via channels 2040 between the ribs 2008, and in a vertical direction and/or horizontal direction via holes 2012 thereby further improving performance. Embodiments of the mattress assembly 2000 disclosed herein may provide improved breathability and temperature regulation compared to conventional mattress assemblies.

[0092] Figures 29-35 illustrate another exemplary board 3004 that can be provided as part of the mattress assembly 2000. In this embodiment, the board 3004 comprises three sections (a), (b) and (c) that are pivotably connected to each other with hinges 3006. The hinges 3006 allow the board 3004 to be folded into a more compact configuration for storage. In one example, the board 3008 can be folded into a u-shape to wrap around a collapsed playard, such as shown in Figure 31. The hinges 3006 can be integrally formed as portions of adjacent sections (a), (b) and/or (c).

[0093] The board 3004 may be shaped to promote airflow through the device, for example being corrugated or undulating including a plurality of ribs 3008. Additionally, vent holes 3012 may be provided throughout the board 3004. With particular reference to Figures 33 and 34, the vent holes 3012 can be orientated away from a center of the mattress. For example, and as shown in Figure 34, the holes 3012 in section (a) face towards the right side of Figure 34 while the holes 3012 in panel (c) face towards the left side of Figure 34.

[0094] A removable mattress pad cover 3016 can be provided for use with the board 3004. A bottom side of the removable mattress pad cover 3016 can be a mesh fabric or the like, while a top side may be vinyl material or the like. Straps, hook-and-loop fasteners and or other connectors 3024 can be provided on the removable mattress pad cover 3016 to help secure the cover 3016 to the board 3004 and/or playard.

[0095] In example embodiments, the mattress board may be designed for conventional injection molding, e.g., no gas-assist channel.

[0096] While a particular connection arrangement has been described for a topper assembly and a playard, one of ordinary skill in the art would understand that the connection interface and any of its features could be used to attach other components, such as a canopy, to a playard. Additionally, one of ordinary skill in the art would understand that other connections between the topper assembly and the playard are possible besides a clearance fit type connection. Various other connections, such as snap connectors, latches, hooks, fasteners, etc., could be used instead of the types of connectors illustrated in the Figures.

[0097] The above-described example embodiments may be implemented in various configurations and operated with various methods which are listed below:

1. A base board for a topper assembly connectable to a playard, the base board comprising:

a board body, the board body defining a plurality of ribs extending along a length of the board body, the board body further defining at least one hole on at least one of the plurality of ribs.

2. The base board according to configuration 1, wherein each rib has a top surface with a front side, a rear side, and a top side between the front side and the rear side, wherein one hole of the at least one holes is located on the front side of one rib of the plurality of ribs.

3. The base board according to configuration 2, wherein another of the at least one holes is located on the rear side of the one rib of the plurality of ribs.

4. The base board according to configuration 1, wherein each rib has a top surface with a front side, a rear side, and a top side between the front side and the rear side, wherein a first hole of the

at least one holes is located on the front side of a first rib of the plurality of ribs, and wherein a second hole of the at least one holes is located on the rear side of a second rib of the plurality of ribs.

5. The base board according to configuration 1, wherein the first and second ribs are on respective first and second halves of the base board.

6. The base board according to configuration 1, wherein further comprising at least two sections pivotably connected to each other.

7. The base board according to configuration 6, further comprising at least one hinge connecting the at least two sections.

8. The base board according to configuration 7, wherein the at least one hinge is at least partially integrally formed with at least one of the at least two sections.

9. The base board according to configuration 6, wherein the at least two sections include a first section, a second section and a third section.

10. The base board according to configuration 9, wherein the second section is connected to each of the first section and the third section.

11. The base board according to configuration 10, wherein the second section has a width that is less than a width of the first and third sections.

12. The base board according to configuration 11, wherein each of the sections includes at least one rib, each rib has a top surface with a front side, a rear side, and a top side between the front side and the rear side.

13. The base board according to configuration 12, wherein the at least one rib of the first section includes at least one hole on the front side of the rib, and wherein the at least one rib of the third section includes at least one hole on the rear side of the rib.

14. A mattress assembly for a topper assembly connectable to a playard, the mattress assembly comprising:

a top layer,

a bottom layer, and

a base board positioned between the top layer and the bottom layer, the base board including a board body, the board body defining a plurality of ribs extending along a length of the board body, the board body further defining at least one hole on at least one of the plurality of ribs.

15. The mattress assembly according to configuration 14, wherein the top layer comprises a first foam, and wherein the bottom layer comprises a second foam.

16. The mattress assembly according to configuration 15, wherein each rib has a top surface with a front side, a rear side, and a top side between the front side and the rear side, wherein one hole of the at least one holes is located on the front side of one rib of the plurality of ribs.

17. The mattress assembly according to configuration 16, wherein another of the at least one holes is located on the rear side of the one rib of the plurality of ribs.

18. The mattress assembly according to configuration 15, wherein each rib has a top surface with a front side, a rear side, and a top side between the front side and the rear side, wherein a first hole of the at least one holes is located on the front side of a first rib of the plurality of ribs, and wherein a second hole of the at least one holes is located on the rear side of a second rib of the plurality of ribs.

19. The mattress assembly according to configuration 18, wherein the first and second ribs are on respective first and second halves of the base board.

20. The mattress assembly according to configuration 15, wherein the base board further comprises at least two sections pivotably connected to each other.

21. The mattress assembly according to configuration 20, further comprising at least one hinge connecting the at least two sections.

22. The mattress assembly according to configuration 20, wherein the at least one hinge is at least partially integrally formed with at least one of the at least two sections.

23. The mattress assembly according to configuration 20, wherein the at least two sections include a first section, a second section and a third section.

24. The mattress assembly according to configuration 23, wherein the second section is connected to each of the first section and the third section.

25. The mattress assembly according to configuration 24, wherein the second section has a width that is less than a width of the first and third sections.

26. The mattress assembly according to configuration 25, wherein each of the sections includes at least one rib, each rib has a top surface with a front side, a rear side, and a top side between the front side and the rear side.

27. The mattress assembly according to configuration 26, wherein the at least one rib of the first section includes at least one hole on the front side of the rib, and wherein the at least one rib of the third section includes at least one hole on the rear side of the rib.

[0098] Having thus described the present embodiments in detail, it is to be appreciated and will be apparent to those skilled in the art that many physical changes, only a few of which are exemplified in the detailed description of the disclosure, could be made without altering the inventive concepts and principles embodied therein.

[0099] It is also to be appreciated that numerous embodiments incorporating only part of the preferred embodiment are possible which do not alter, with respect to those parts, the inventive concepts and principles embodied therein.

[00100] The present embodiment and optional configurations are therefore to be considered in all respects as exemplary and/or illustrative and not restrictive, the scope of the disclosure being indicated by the appended claims rather than by the foregoing description, and all alternate embodiments and changes to this embodiment which come within the meaning and range of equivalency of said claims are therefore to be embraced therein.

CLAIMS

1. A base board for a topper assembly connectable to a playard, the base board comprising:
a board body, the board body defining a plurality of ribs extending along a length of the board body, the board body further defining at least one hole on at least one of the plurality of ribs.
2. The base board according to claim 1, wherein each rib has a top surface with a front side, a rear side, and a top side between the front side and the rear side, wherein one hole of the at least one holes is located on the front side of one rib of the plurality of ribs.
3. The base board according to claim 2, wherein another of the at least one holes is located on the rear side of the one rib of the plurality of ribs.
4. The base board according to claim 1, wherein each rib has a top surface with a front side, a rear side, and a top side between the front side and the rear side, wherein a first hole of the at least one holes is located on the front side of a first rib of the plurality of ribs, and wherein a second hole of the at least one holes is located on the rear side of a second rib of the plurality of ribs.
5. The base board according to claim 1, wherein the first and second ribs are on respective first and second halves of the base board.
6. The base board according to claim 1, wherein further comprising at least two sections pivotably connected to each other.
7. The base board according to claim 6, further comprising at least one hinge connecting the at least two sections.

8. The base board according to claim 7, wherein the at least one hinge is at least partially integrally formed with at least one of the at least two sections.
9. The base board according to claim 6, wherein the at least two sections include a first section, a second section and a third section.
10. The base board according to claim 9, wherein the second section is connected to each of the first section and the third section.
11. The base board according to claim 10, wherein the second section has a width that is less than a width of the first and third sections.
12. The base board according to claim 11, wherein each of the sections includes at least one rib, each rib has a top surface with a front side, a rear side, and a top side between the front side and the rear side.
13. The base board according to claim 12, wherein the at least one rib of the first section includes at least one hole on the front side of the rib, and wherein the at least one rib of the third section includes at least one hole on the rear side of the rib.
14. A mattress assembly for a topper assembly connectable to a playard, the mattress assembly comprising:
- a top layer,
 - a bottom layer, and

a base board positioned between the top layer and the bottom layer, the base board including a board body, the board body defining a plurality of ribs extending along a length of the board body, the board body further defining at least one hole on at least one of the plurality of ribs.

15. The mattress assembly according to claim 14, wherein the top layer comprises a first foam, and wherein the bottom layer comprises a second foam.

16. The mattress assembly according to claim 15, wherein each rib has a top surface with a front side, a rear side, and a top side between the front side and the rear side, wherein one hole of the at least one holes is located on the front side of one rib of the plurality of ribs.

17. The mattress assembly according to claim 16, wherein another of the at least one holes is located on the rear side of the one rib of the plurality of ribs.

18. The mattress assembly according to claim 15, wherein each rib has a top surface with a front side, a rear side, and a top side between the front side and the rear side, wherein a first hole of the at least one holes is located on the front side of a first rib of the plurality of ribs, and wherein a second hole of the at least one holes is located on the rear side of a second rib of the plurality of ribs.

19. The mattress assembly according to claim 18, wherein the first and second ribs are on respective first and second halves of the base board.

20. The mattress assembly according to claim 15, wherein the base board further comprises at least two sections pivotably connected to each other.

21. The mattress assembly according to claim 20, further comprising at least one hinge connecting the at least two sections.

22. The mattress assembly according to claim 20, wherein the at least one hinge is at least partially integrally formed with at least one of the at least two sections.

23. The mattress assembly according to claim 20, wherein the at least two sections include a first section, a second section and a third section.

24. The mattress assembly according to claim 23, wherein the second section is connected to each of the first section and the third section.

25. The mattress assembly according to claim 24, wherein the second section has a width that is less than a width of the first and third sections.

26. The mattress assembly according to claim 25, wherein each of the sections includes at least one rib, each rib has a top surface with a front side, a rear side, and a top side between the front side and the rear side.

27. The mattress assembly according to claim 26, wherein the at least one rib of the first section includes at least one hole on the front side of the rib, and wherein the at least one rib of the third section includes at least one hole on the rear side of the rib.