



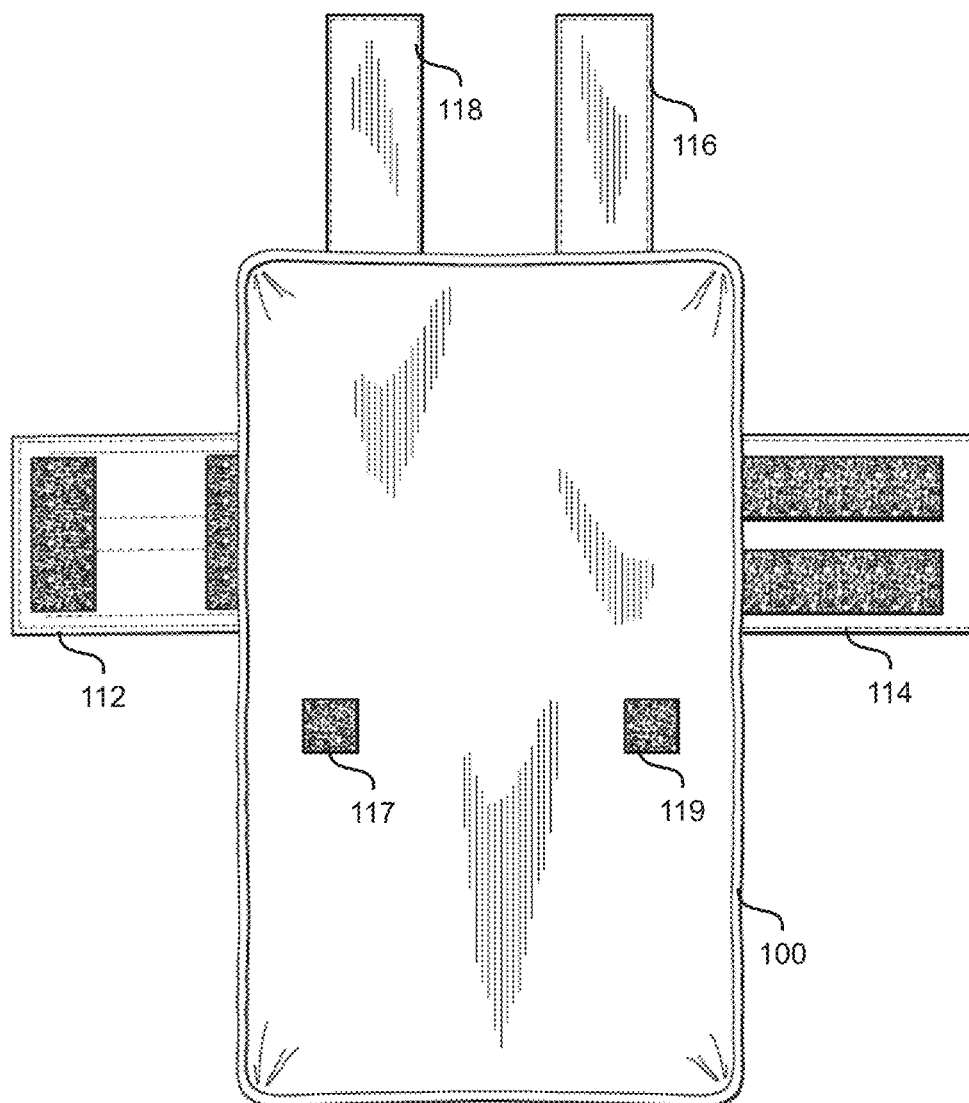
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(19) **United States**(12) **Patent Application Publication**
Escajeda et al.(10) **Pub. No.: US 2017/0127852 A1**(43) **Pub. Date: May 11, 2017**(54) **FOLDABLE MAT****Publication Classification**(71) Applicant: **Change Ease LLC**, Pittsburgh, PA (US)(72) Inventors: **Justin Escajeda**, Pittsburgh, PA (US);
Maureen Dalton, Pittsburgh, PA (US)(51) **Int. Cl.****A47D 15/00** (2006.01)**A47D 5/00** (2006.01)(52) **U.S. Cl.**CPC **A47D 15/003** (2013.01); **A47D 5/006**
(2013.01); **A47D 15/005** (2013.01)(21) Appl. No.: **15/348,422**(22) Filed: **Nov. 10, 2016****Related U.S. Application Data**(60) Provisional application No. 62/253,751, filed on Nov.
11, 2015.

(57)

ABSTRACT

A foldable mat includes a mat including a padded material and a plurality of sections, each section of the plurality of sections having substantially similar dimensions such that the plurality of sections fold together. The foldable mat also includes a rigid material disposed within at least one section of the plurality of sections of the mat and a restraining mechanism arranged to restrain a person on the mat.



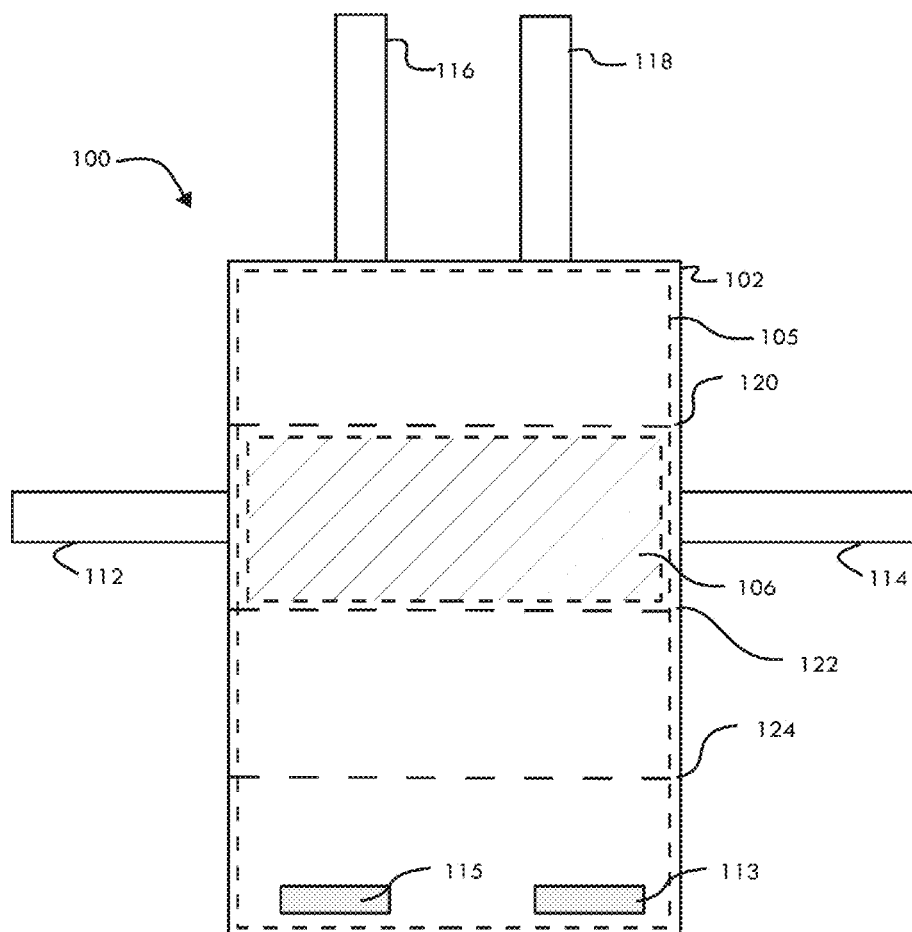


FIG. 1A

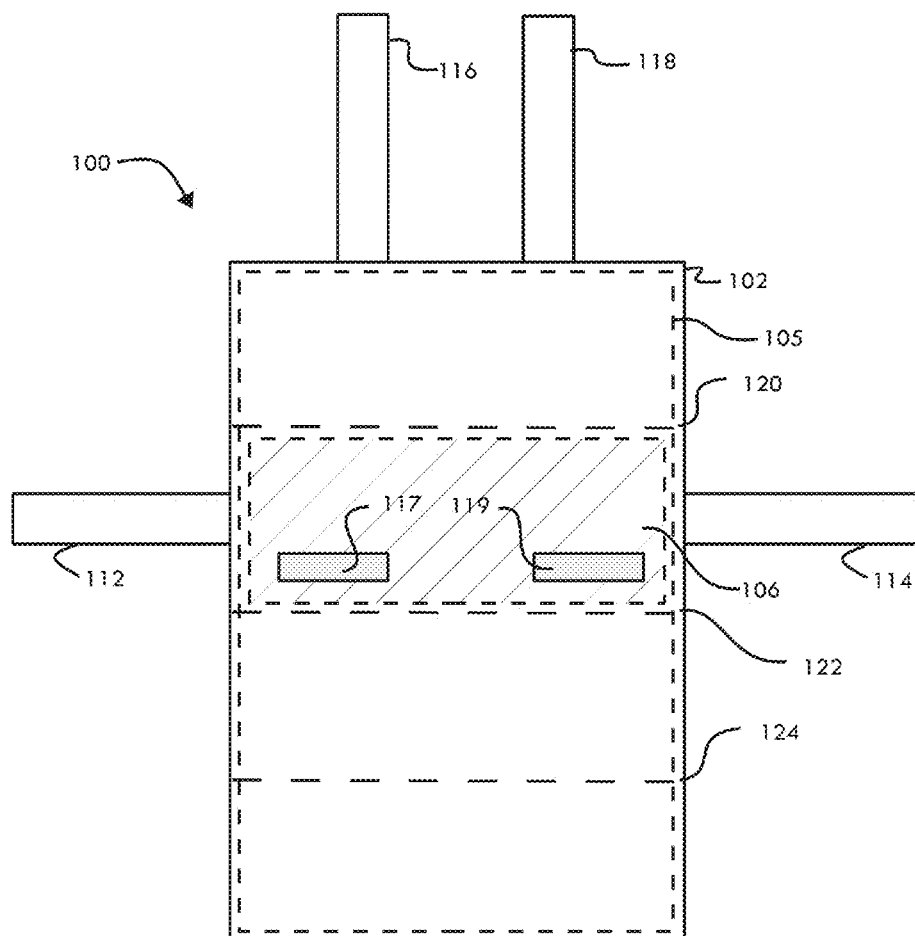


FIG. 1B

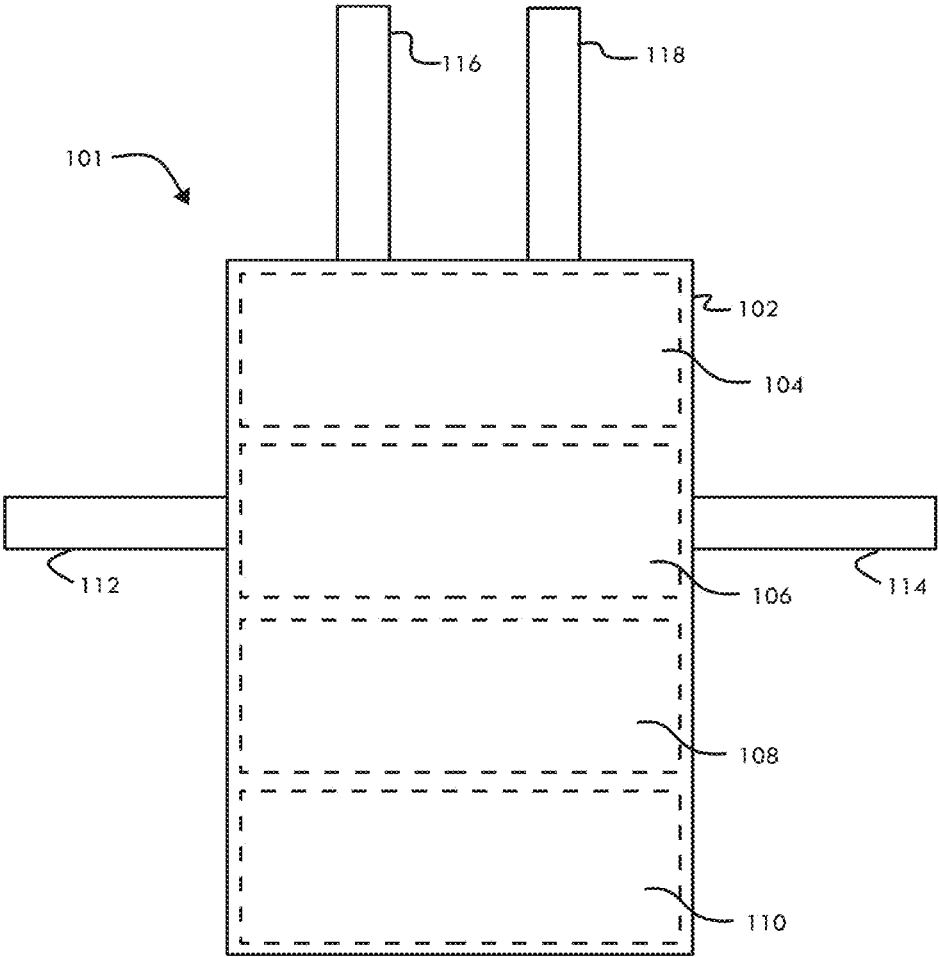


FIG. 2

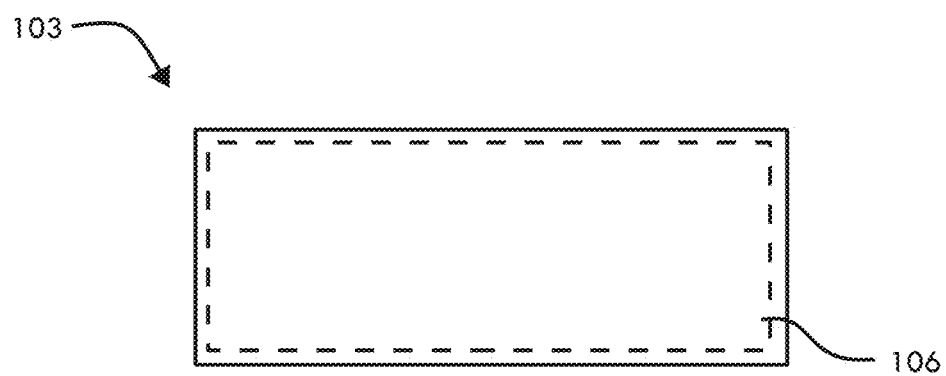


FIG. 3

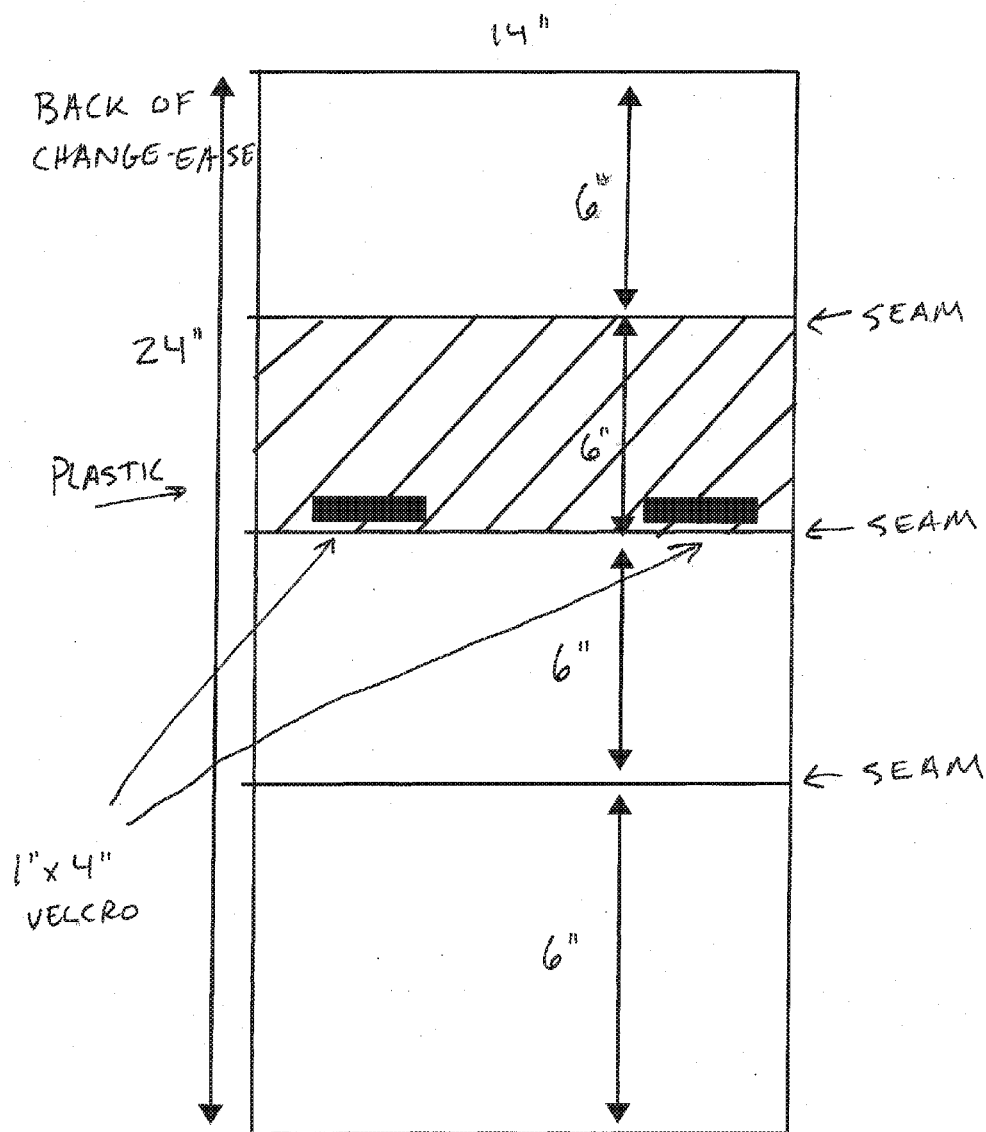
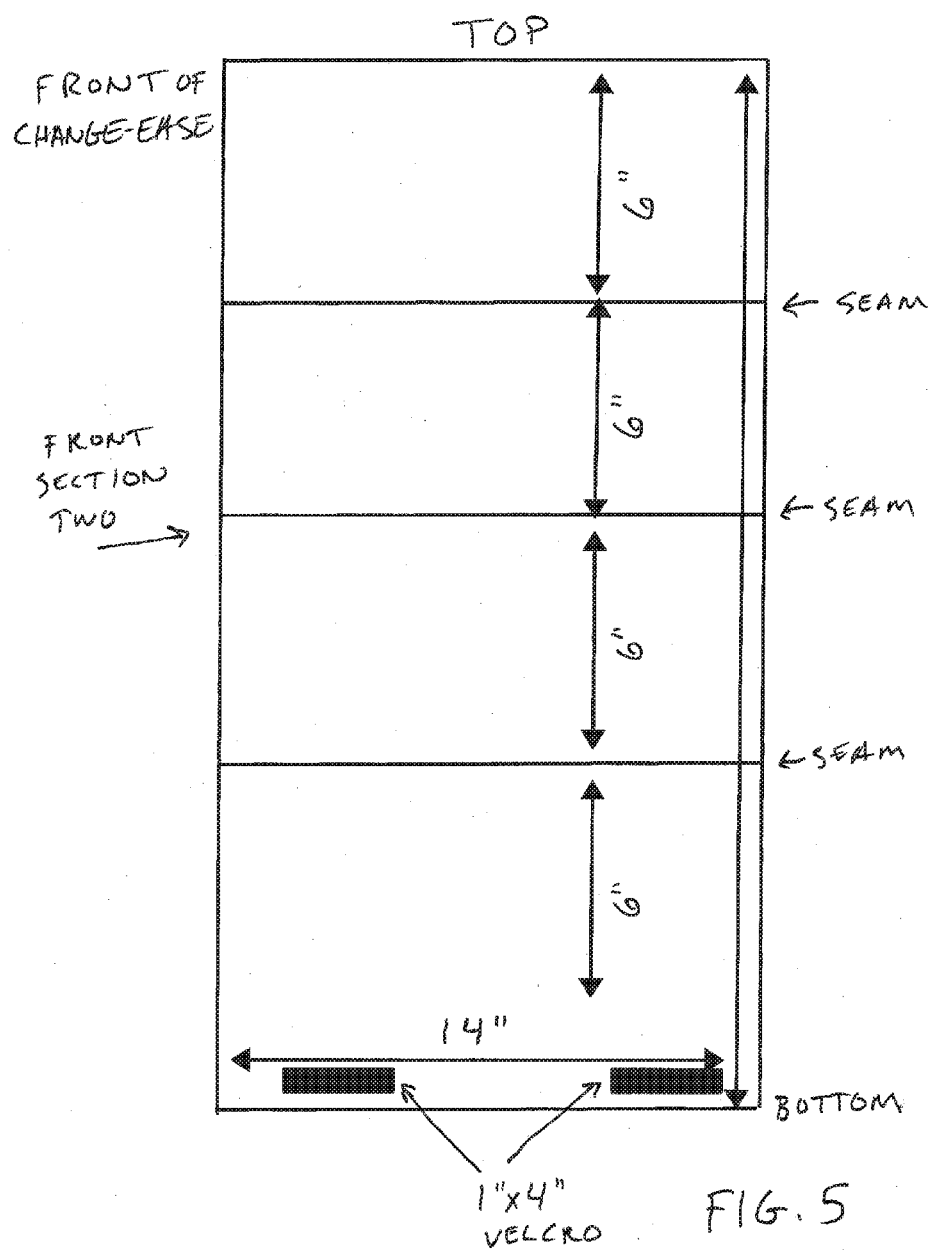


FIG. 4



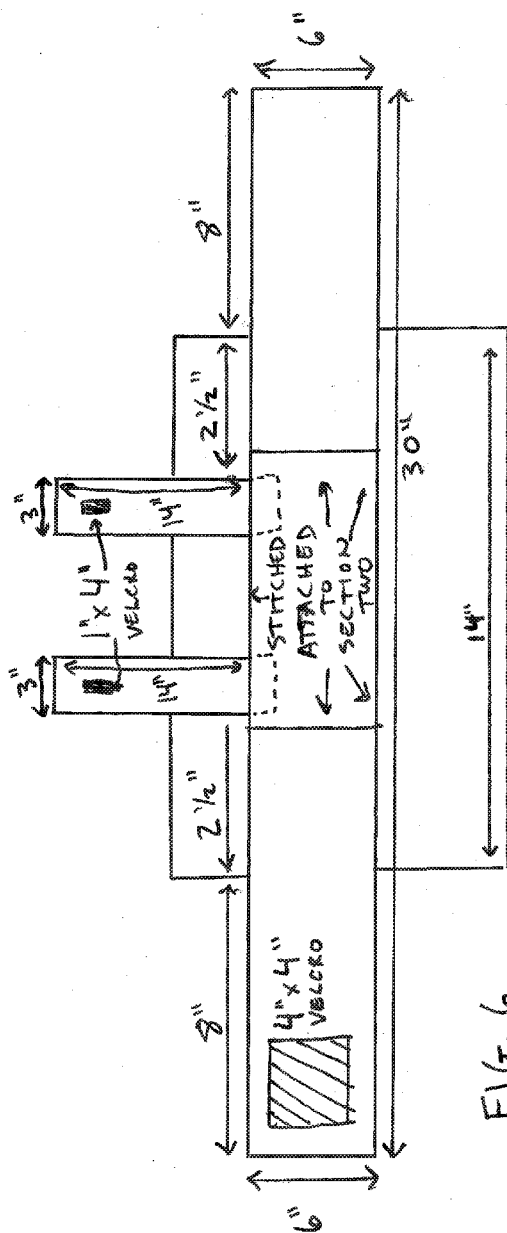


FIG. 6

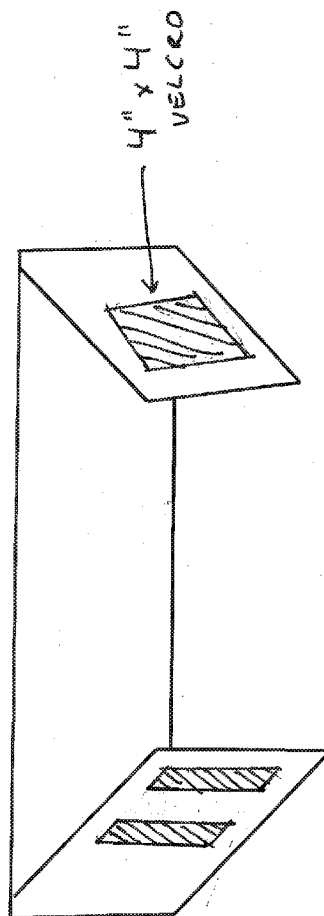


FIG. 7

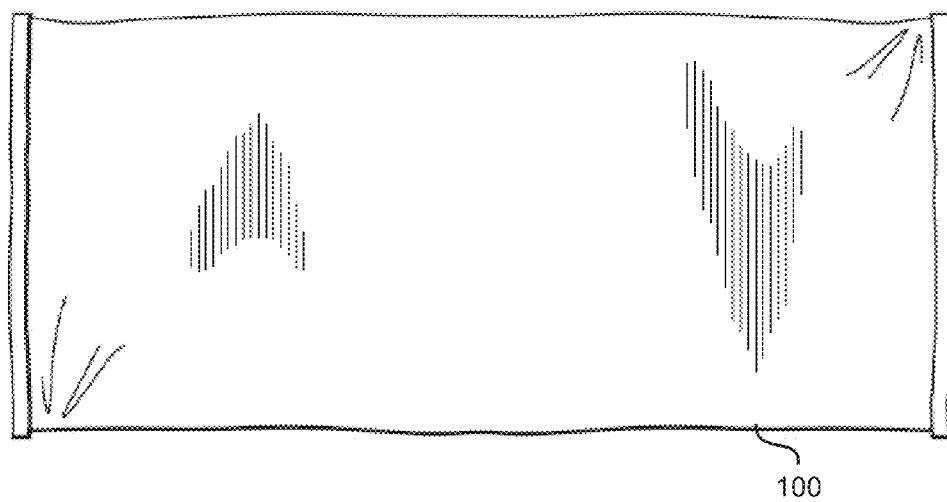


FIG. 8A

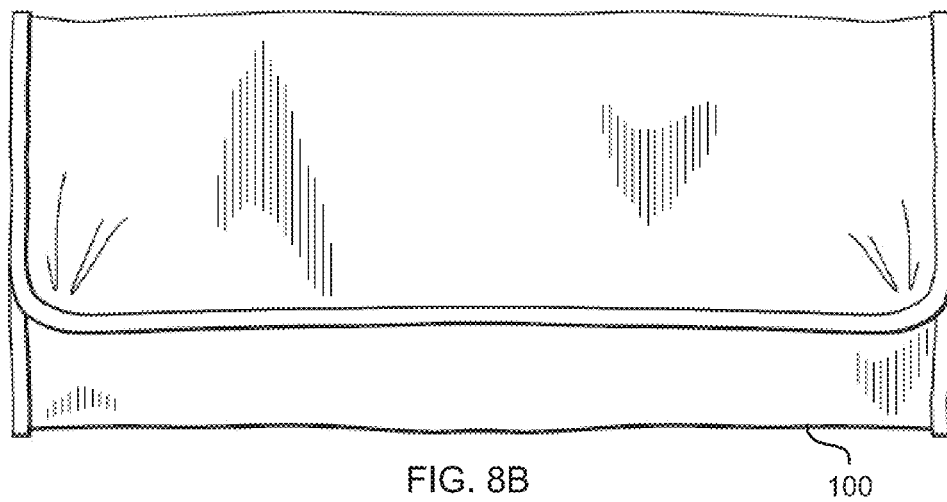


FIG. 8B

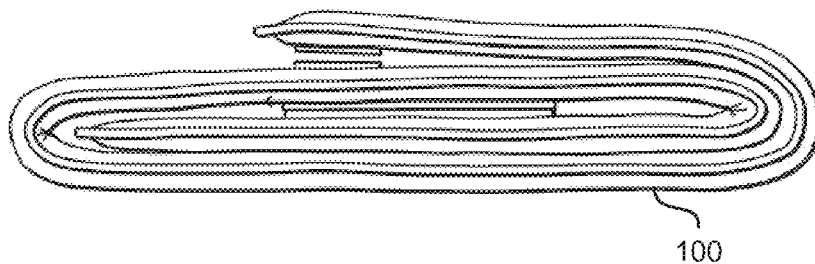


FIG. 9

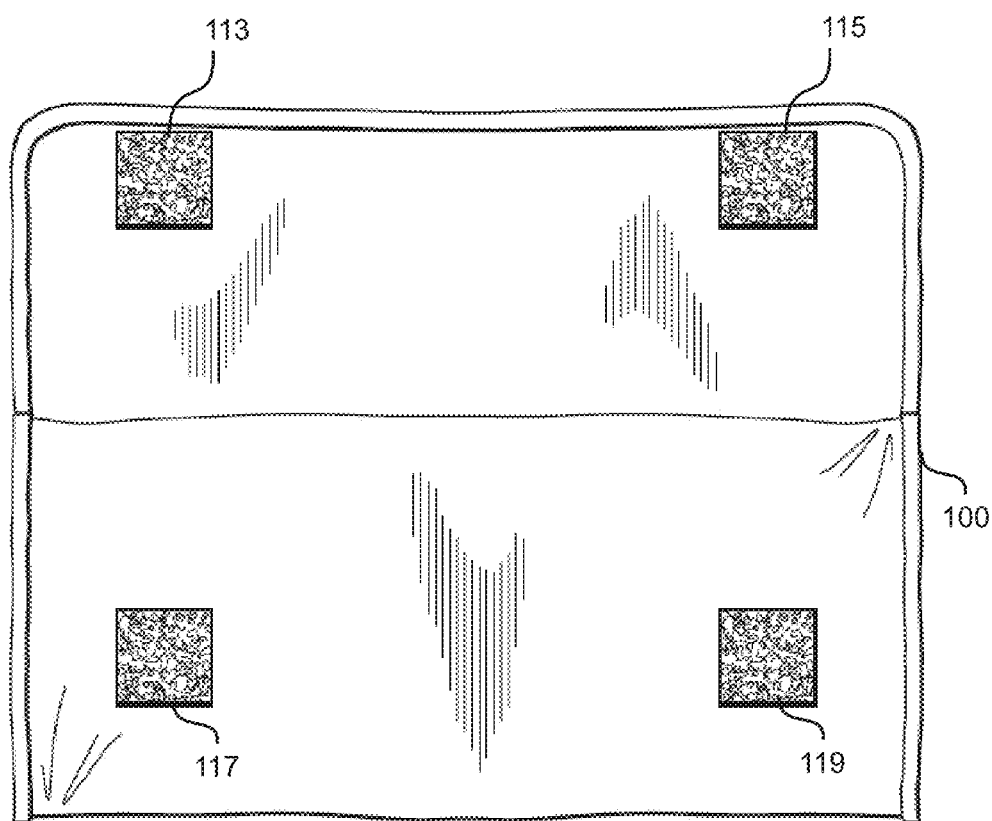


FIG. 10

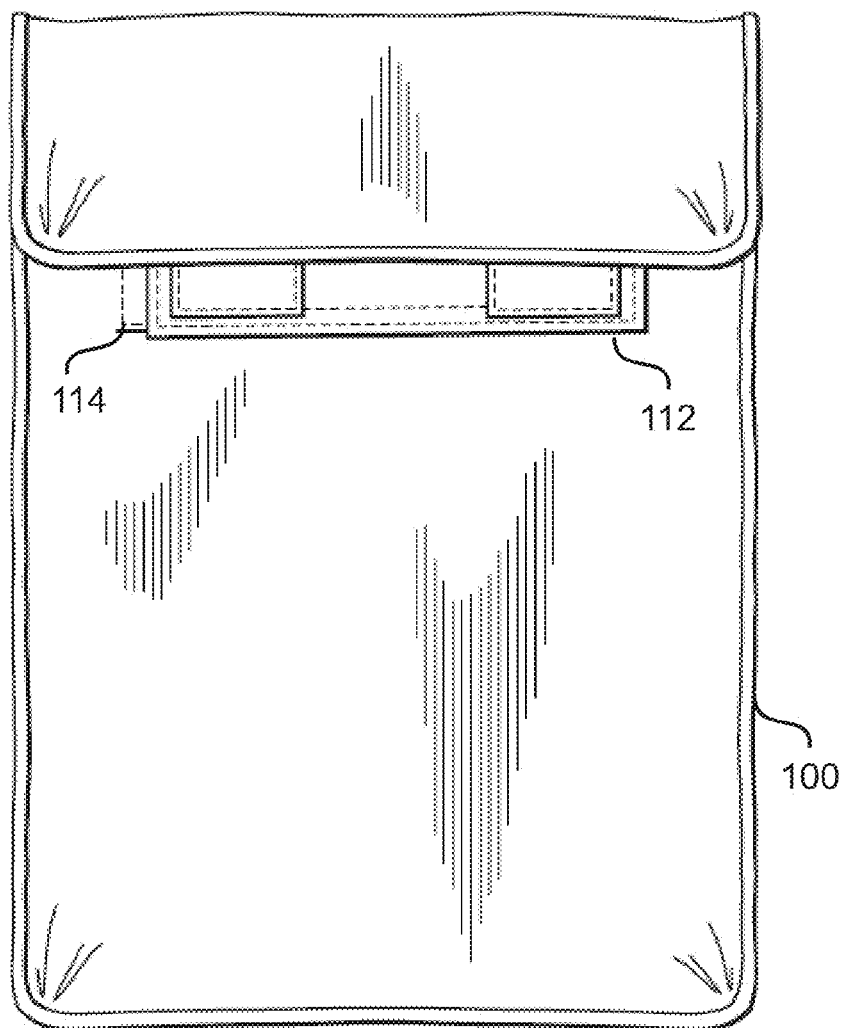


FIG. 11

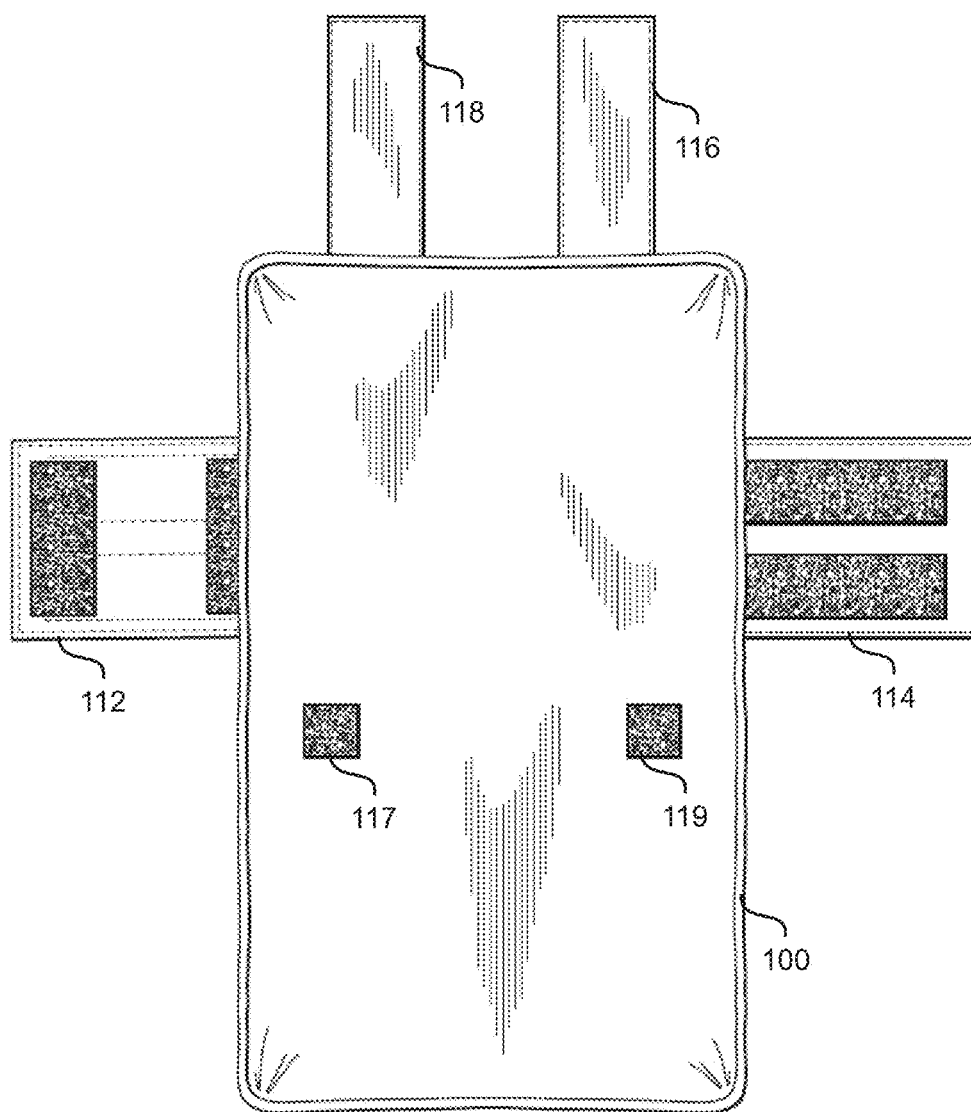


FIG. 12

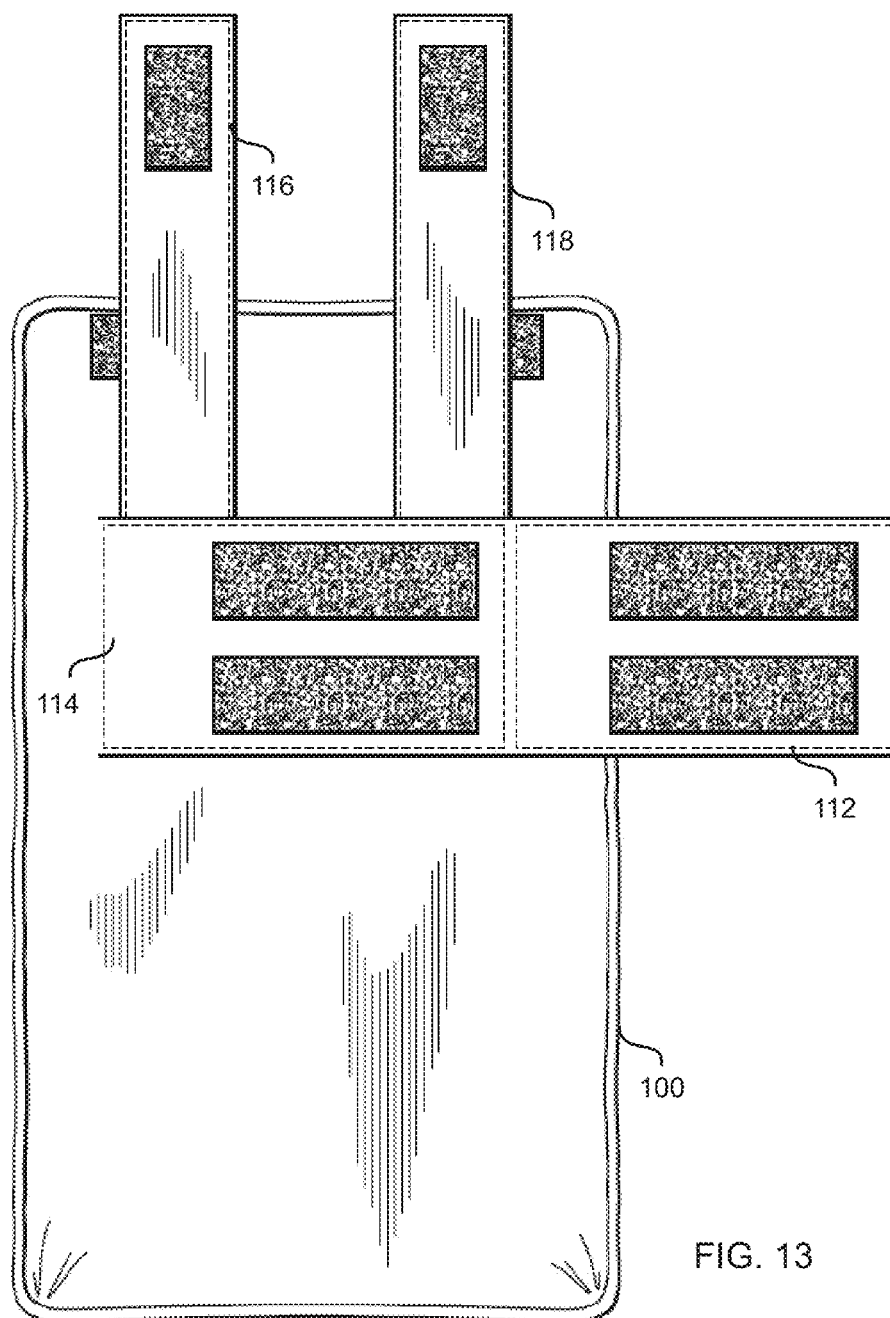
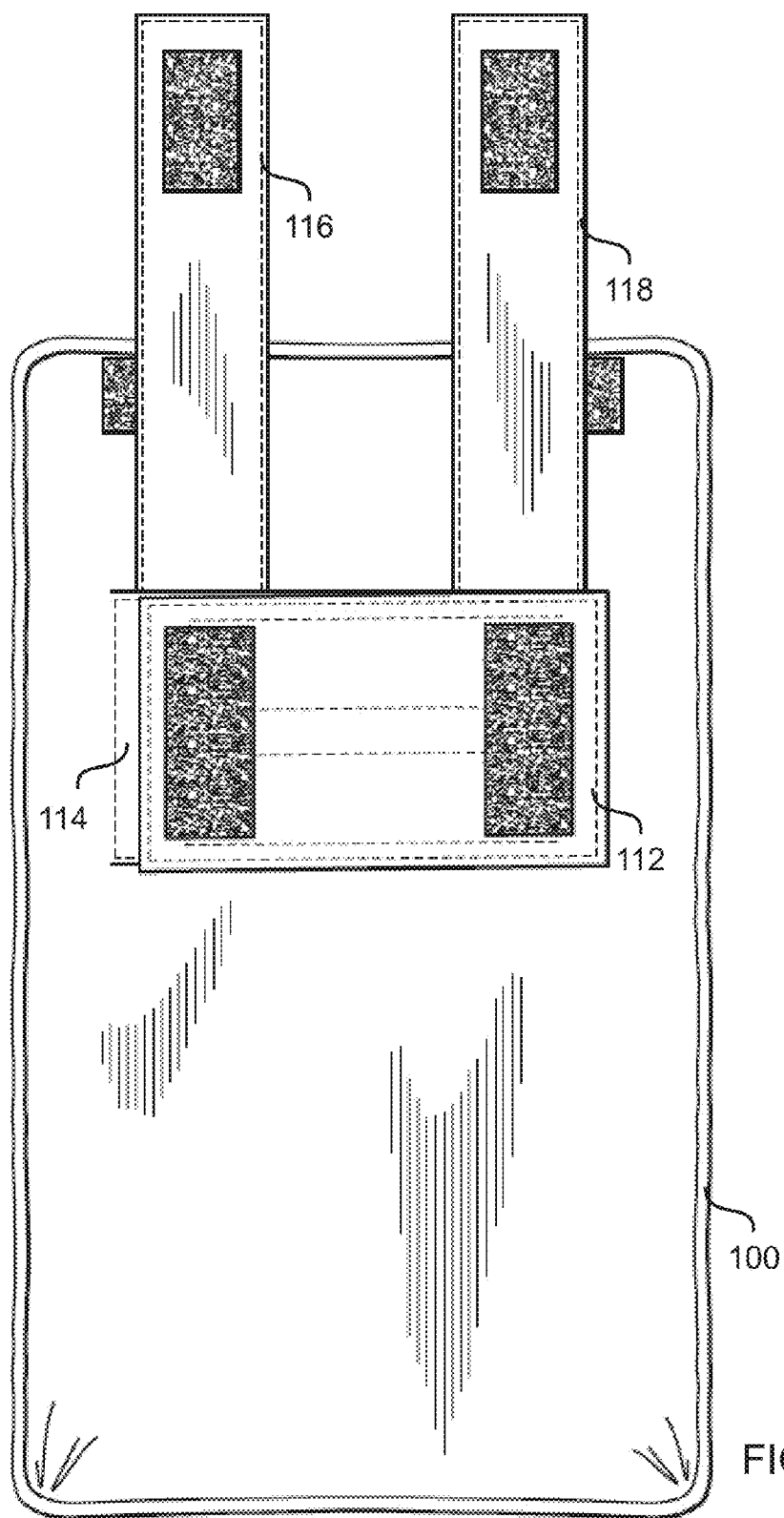


FIG. 13



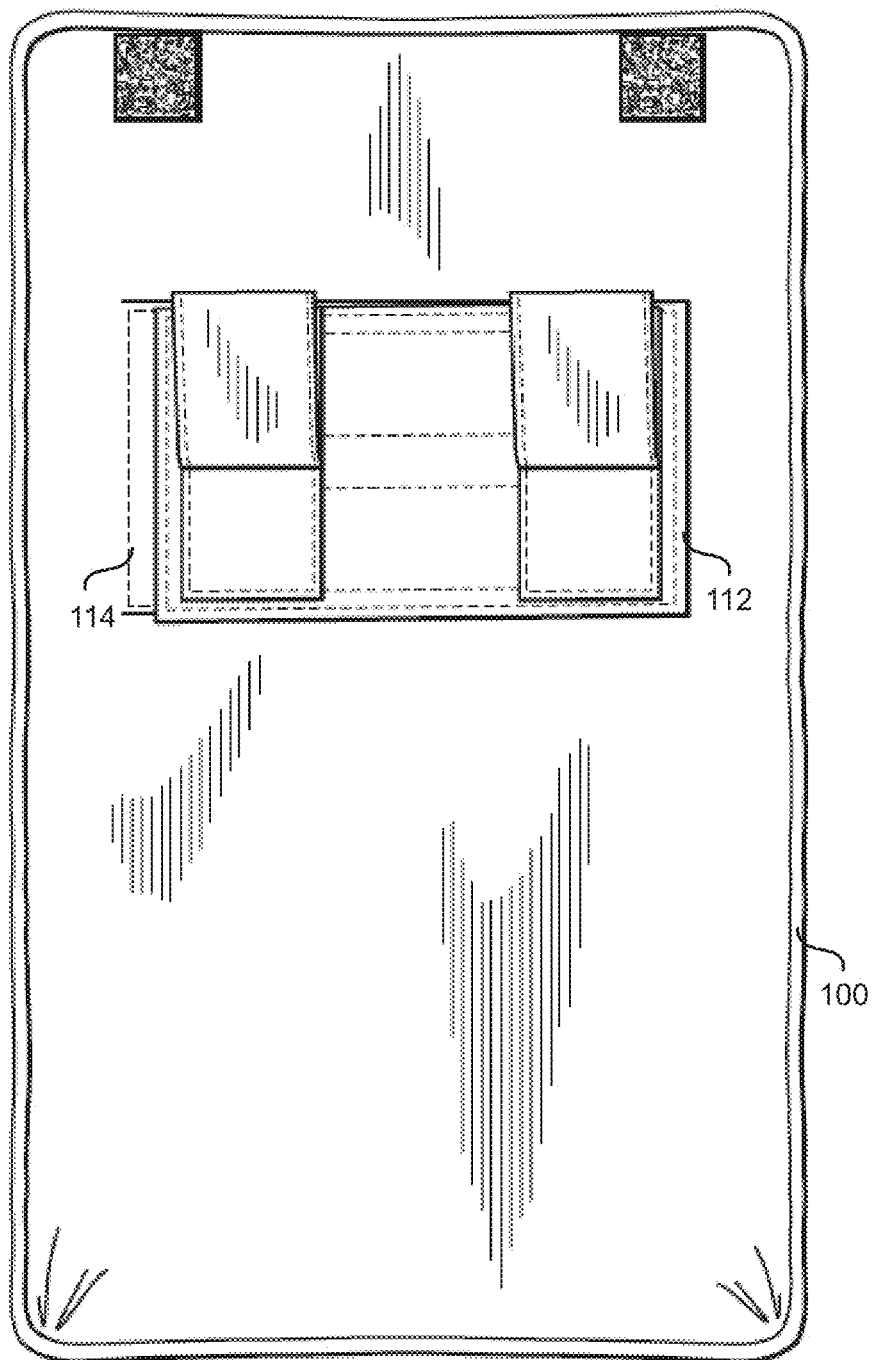


FIG. 15



FIG. 16

FOLDABLE MAT

CROSS REFERENCE TO RELATED APPLICATION

[0001] This application claims the benefit of U.S. Provisional Application No. 62/253,751, filed Nov. 11, 2015, the entire disclosure of which is hereby incorporated by reference in its entirety.

BACKGROUND OF THE INVENTION

[0002] 1. Field of the Invention

[0003] This invention relates generally to foldable mats and, in one particular embodiment, to a foldable diaper changing pad.

[0004] 2. Background

[0005] Traditionally, diaper changing pads are large, bulky, and difficult to transport. Moreover, traditional changing pads make it difficult to change a moving baby and, especially when space is limited, pose a risk of injury to a child that rolls or otherwise moves. Moreover, existing medical restraint systems are not readily portable and are therefore inconvenient for use in the field.

[0006] Therefore, it would be advantageous to provide a foldable changing pad with restraints that reduces or eliminates at least some of the problems associated with known mats.

SUMMARY OF THE INVENTION

[0007] According to a non-limiting embodiment of the present invention, provided is a foldable mat, comprising: a mat comprising a padded material and a plurality of sections, each section of the plurality of sections having substantially similar dimensions such that the plurality of sections fold together; a rigid material disposed within at least one section of the plurality of sections of the mat; and a restraining mechanism arranged to restrain a person on the mat.

[0008] In non-limiting embodiments, the rigid material comprises plastic having a shape corresponding to a shape of the at least one section it is disposed within. Moreover, the plurality of sections may comprise at least three sections, such that at least one middle section is attached to two other sections, and wherein the rigid material is disposed within the at least one middle section. In some examples, the plurality of sections comprises four sections, including two middle sections, and the rigid material is disposed within one middle section of the two middle sections.

[0009] In non-limiting embodiments, the restraining mechanism comprises a plurality of straps arranged such that, when the person is secured on the pad with the plurality of straps, the person's shoulders are on top of the rigid material. Further, the plurality of straps may comprise at least two straps, and wherein the at least two straps extend substantially perpendicularly from the at least one section comprising the rigid material. In some non-limiting embodiments, the restraining mechanism comprises a plurality of straps including at least one strap arranged to be secured over the person's chest and at least one strap arranged to be secured over the person's shoulders. Further, the restraining mechanism may comprise a plurality of straps including at least one fastening mechanism. The fastening mechanism may comprise, for example, Velcro®.

[0010] In non-limiting embodiments, the foldable mat comprises a plush toy attached to at least one strap of the

plurality of straps. Further, in some embodiments, one side of the changing pad may comprise a non-slip surface.

[0011] According to another non-limiting embodiment of the present invention, provided is a foldable mat, comprising: a mat comprising a width, a front side, a back side, and a plurality of sections, each section of the plurality of sections having a width corresponding to the width of the mat; a padded material disposed between the front side and the back side of the mat; a rigid material disposed within at least one section of the plurality of sections; and a restraining mechanism arranged to restrain a person on the mat.

[0012] In non-limiting embodiments, the restraining mechanism comprises a plurality of straps arranged such that, when the person is secured on the pad with the plurality of straps, the person's shoulders are on top of the rigid material. Further, the plurality of straps may comprise at least two straps, and the at least two straps may extend substantially perpendicularly from the at least one section comprising the rigid material. In some non-limiting embodiments, the restraining mechanism comprises a plurality of straps including at least one strap arranged to be secured over the person's chest and at least one strap arranged to be secured over the person's shoulders.

[0013] In non-limiting embodiments, the padded material may comprise a plurality of portions of padded material, and each portion of padded material may be disposed within a section of the plurality of sections. Further, the restraining mechanism comprises a plurality of straps including at least one strap arranged to be secured over the person's chest and at least one strap arranged to be secured over the person's shoulders. Moreover, in some non-limiting embodiments, the back side of the mat may comprise a non-slip material.

[0014] These and other features and characteristics of the present invention, as well as the methods of operation and functions of the related elements of structures and the combination of parts and economies of manufacture, will become more apparent upon consideration of the following description and the appended claims with reference to the accompanying drawings, all of which form a part of this specification, wherein like reference numerals designate corresponding parts in the various figures. It is to be expressly understood, however, that the drawings are for the purpose of illustration and description only and are not intended as a definition of the limits of the invention. As used in the specification and the claims, the singular form of "a", "an", and "the" include plural referents unless the context clearly dictates otherwise.

BRIEF DESCRIPTION OF THE DRAWINGS

[0015] Additional advantages and details of the invention are explained in greater detail below with reference to the exemplary embodiments that are illustrated in the accompanying schematic figures, in which:

[0016] FIG. 1A is a front view of a foldable mat according to the principles of the present invention;

[0017] FIG. 1B is a back view of the foldable mat shown in FIG. 1A according to the principles of the present invention;

[0018] FIG. 2 is a front view of another foldable mat according to the principles of the present invention;

[0019] FIG. 3 is a front view of the foldable mat shown in FIGS. 1A, 1B, and 2 in a folded position according to the principles of the present invention;

[0020] FIG. 4 is a back view of a foldable mat according to the principles of the present invention;

[0021] FIG. 5 is a front view of a foldable mat according to the principles of the present invention;

[0022] FIG. 6 is a front view of a restraining mechanism for a foldable pad according to the principles of the present invention;

[0023] FIG. 7 is a further front view of the restraining mechanism shown in FIG. 6 for a foldable pad according to the principles of the present invention;

[0024] FIGS. 8A and 8B show a foldable mat in a folded position according to the principles of the present invention;

[0025] FIG. 9 shows a foldable mat in a folded position according to the principles of the present invention;

[0026] FIG. 10 shows a foldable mat in a partially folded position according to the principles of the present invention;

[0027] FIG. 11 shows a front side of a foldable mat in a partially folded position according to the principles of the present invention;

[0028] FIG. 12 shows a back side of a foldable mat according to the principles of the present invention;

[0029] FIGS. 13-15 show a front side of a foldable mat according to the principles of the present invention; and

[0030] FIG. 16 shows a foldable mat with a child restrained within the straps according to the principles of the present invention.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0031] As used herein, spatial or directional terms, such as “up,” “down,” “above,” “below,” “top,” “bottom,” and the like, relate to the invention as it is shown in the drawing figures. However, it is to be understood that the invention can assume various alternative orientations and, accordingly, such terms are not to be considered as limiting. Further, all numbers expressing dimensions, physical characteristics, processing parameters, quantities of ingredients, reaction conditions, and the like, used in the specification and claims are to be understood as being modified in all instances by the term “about”. Accordingly, unless indicated to the contrary, the numerical values set forth in the following specification and claims are approximations that can vary depending upon the desired properties sought to be obtained by the present invention. At the very least, and not as an attempt to limit the application of the doctrine of equivalents to the scope of the claims, each numerical value should at least be construed in light of the number of reported significant digits and by applying ordinary rounding techniques.

[0032] The present invention is directed to a foldable mat for restraining an individual during a procedure. The preferred embodiment discussed herein relates to a diaper changing pad for babies, although one skilled in the art will appreciate that the foldable mat has numerous other applications and uses. For example, the foldable mat may be used for both children and adults to restrain them and/or perform medical procedures. As used herein, the term “mat” may refer to any type of protective material, pad, and/or the like.

[0033] In a preferred and non-limiting embodiment, the foldable mat comprises a plurality of sections of similar size that are arranged to fold together for easy transportation. For example, the foldable mat may include four (4) sections including two (2) end sections and two (2) middle sections. It will be appreciated that any number of sections may be

used depending on the size of the mat when unfolded and the desired size of the folded mat. In one example, the foldable mat may be two pieces of material sewn together with a pad or padded material disposed in between. The padded material may be sewn in or, in other examples, one or more pieces of material may be sewn together between each section to allow for the sections to hinge and fold together.

[0034] Referring now to FIG. 1A, a front view of a foldable mat 100 is shown according to a preferred and non-limiting embodiment. The external surface of the foldable mat 100 is made of an outer material 102 having a surface that can be easily cleaned, such as nylon or other like waterproof or water-resistant material. A padded material 105 is disposed within the outer material 102, and seams 120, 122, 124 divide the mat 100 into sections to allow for the mat 100 to be folded. The padded material may include, but is not limited to, polyester batting or foam and may be of various thicknesses including, but not limited to, approximately a quarter inch. Other thicknesses may be used. Moreover, it will be appreciated that, in some non-limiting embodiments, the outer material 102 may also be the padded material such that a single piece of material is used.

[0035] Still referring to FIG. 1A, a rigid material 106 is sewn into or otherwise disposed within the outer material 102, and may be as shown in FIG. 1A or of various other dimensions. Moreover, the rigid material 106 may be disposed in a middle section of the mat 100, as shown in FIG. 1A. The rigid material 106 may include any suitable inflexible material including, but not limited to, plastic, wood, and/or other like materials. In the non-limiting embodiment shown in FIG. 1A, the rigid material 106 has a shape corresponding to a shape of the section it is disposed in, with narrower dimensions to. However, other variations are possible. The rigid material 106 may be in place of or in addition to the padded material. Further, in some examples, the other sections of the mat may be flexible and non-rigid. In some non-limiting embodiments, however, a rigid material 106 may be disposed in multiple sections or all sections of the mat 100. In one possible example, the rigid material may keep an individual flat on his or her back when used to support the individual's shoulders.

[0036] With continued reference to FIG. 1A, a restraint system is shown according to a preferred and non-limiting embodiment. The restraint system includes a plurality of straps 112, 114, 116, 118 for securing an individual, such as a child, onto the mat 100. For example, two straps 112, 114 may be arranged to secure a child from the sides, over his or her chest, and two straps 116, 118 may be arranged to secure a child over the shoulders. The straps 112, 114, 116, 118 may be secured with Velcro®, buttons, snaps, buckles, and/or other like fastening mechanisms. The straps 112, 114, 116, 118 are arranged to keep the child's shoulders against the rigid material 106, which makes it easier to keep the child secure and in place. For example, the straps 112, 114 may extend from the sides of the section comprising the rigid material 106. It will be appreciated, however, that various arrangements are possible.

[0037] In FIG. 1A, fastening mechanisms 113, 115 are shown on the front side of the foldable mat 100. In the depicted example, fastening mechanisms 113, 115 are pieces of Velcro®, although it will be appreciated that various other fastening mechanisms may be used such as, for example, snaps, buttons, straps, buckles, and/or the like. Referring to FIG. 1B, a back side of the foldable mat 100 depicted in FIG.

1A is shown according to a preferred and non-limiting embodiment. The back side of the mat **100** may include the same outer material **102** or, in other examples, a different type of material. For example, non-slip material such as rubber may be used on the back side of the mat **100**. Fastening mechanisms **117**, **119** are shown that are used in conjunction with the fastening mechanisms **113**, **115** on the front side of the mat **100** to secure the foldable mat **100** in a folded position. It will be appreciated that fastening mechanisms **113**, **115**, **117**, **119** may be located in any suitable location and, in some examples, the straps **112**, **114**, **116**, **118** may also be used to secure the foldable mat **100** in a folded position.

[0038] Referring now to FIG. 2, a foldable mat **101** is shown according to another preferred and non-limiting embodiment. Here, the foldable mat **101** includes sections **104**, **106**, **108**, **110**. The sections **104**, **106**, **108**, **110** may include pads or padding material, such as but not limited to polyester batting or foam. Middle section **106** may include a rigid material, as described above, in addition to or instead of the pad or padding material. The sections **104**, **106**, **108**, **110** may be sewn or adhered within the outer material **102** or, in other examples, may be floating between two pieces of outer material **102** within sewn-together sections of the foldable mat **101**. The outer material **102** is shown as one continuous piece of material that runs the length of the foldable mat **101**, although it will be appreciated that the outer material **102** may be in separate sections that are sewn or otherwise adhered together.

[0039] Referring now to FIG. 3, a folded mat **103** is shown according to a preferred and non-limiting embodiment. As can be seen, the folded mat **103** is approximately one-quarter the length of the unfolded mat shown in FIGS. 1A, 1B, and 2. However, it will be appreciated that the mat **103** may be folded any number of times based on the design of the mat **103** and the number of sections used. Here, the dimensions of the folded mat **103** are similar in proportion to the dimensions of the rigid material **106** disposed within the mat **103**.

[0040] It will be appreciated that the outer material of the foldable mat described herein may be any number of colors and/or patterns. In some examples, and as described above, the outer material may be different on a front (i.e., changing side) and back of the foldable mat. For example, the back of the foldable mat may include rubber or other non-slip material to increase friction between the foldable mat and a surface being used, thereby preventing the foldable mat from sliding.

[0041] In some examples, a toy may be incorporated into the foldable mat to keep a child entertained while being changed. For example, a plush toy may be incorporated and/or attached to the straps of the folding mat so that it can be accessed by the child while restrained.

[0042] In non-limiting embodiments, the foldable mat may comprise one or more compartments, such as but not limited to a pocket, and may be open and/or closable. A compartment may be used to store the straps, changing wipes, bags, and/or the like.

[0043] In some non-limiting embodiments, the foldable mat may comprise one or more handles and/or straps for transporting the mat. The foldable mat may also comprise a securing strap for holding the foldable mat in a folded position. Other variations are possible.

[0044] FIGS. 4 and 5 show a foldable mat with preferred and non-limiting dimensions. It will be appreciated that numerous shapes and dimensions may be used. For example, the foldable mat shown in FIGS. 4 and 5 are 24 inches long and 14 inches wide, in four (4) sections 6 inches long. Various sizes and proportions are contemplated.

[0045] FIGS. 6 and 7 show a restraining mechanism according to a preferred and non-limiting embodiment. Although fastening mechanisms are shown as Velcro® in FIGS. 6 and 7, it will be appreciated that various other mechanisms may be used. Moreover, it can be seen that side straps can be fastened together across an individual's chest, and the shoulder straps can then be fastened onto the side straps. However, it will be appreciated that various arrangements may be used to secure an individual to the foldable mat. In a preferred and non-limiting embodiment, the side straps are shown as extending 8 inches from the foldable mat and made of a material 6 inches wide. The shoulder straps are shown in FIG. 6 to extend 14 inches from the side straps, and made of a material 3 inches wide. Those skilled in the art will appreciate that, in embodiments in which a restraining mechanism includes a plurality of straps, various sizes and types of straps may be used.

[0046] FIGS. 8-16 show photographs of a folding mat **100** according to a preferred and non-limiting embodiment. FIGS. 8A, 8B, and 9 show a mat **100** in a folded position. FIG. 10 shows a mat **100** in a partially folded position with fastening mechanisms **113**, **115**, **117**, **119** for securing the mat **100** in a folded position. FIG. 11 shows a front side of a mat **100** in a partially folded position with straps **112**, **114** folded inward. FIG. 12 shows a back side of a mat **100** in an unfolded position with straps **112**, **114** extending outward. FIG. 13 shows a front side of a mat **100** in an unfolded position with one strap **114** folded inward and another strap **112** extending outward. FIG. 14 shows a front side of a mat **100** in an unfolded position with straps **112**, **114** folded inward. FIG. 15 shows a front side of a mat **100** in an unfolded position with all straps **112**, **114**, **116**, **118** folded inward. The straps are folded inward for storage and/or transportation, and are folded outward to prepare the mat **100** for use. FIG. 16 shows a mat with a child restrained within the straps.

[0047] It will be readily appreciated by those skilled in the art that modifications may be made to the invention without departing from the concepts disclosed in the foregoing description. For example, various components of the mechanical and electronic relief devices described above can be used together in the same valve. Accordingly, the particular embodiments described in detail herein are illustrative only and are not limiting to the scope of the invention, which is to be given the full breadth of the appended claims and any and all equivalents thereof.

What is claimed is:

1. A foldable mat, comprising:

- a mat comprising a padded material and a plurality of sections, each section of the plurality of sections having substantially similar dimensions such that the plurality of sections fold together;
- a rigid material disposed within at least one section of the plurality of sections of the mat; and
- a restraining mechanism arranged to restrain a person on the mat.

2. The foldable mat of claim 1, wherein the rigid material comprises plastic having a shape corresponding to a shape of the at least one section it is disposed within.

3. The foldable mat of claim 1, wherein the plurality of sections comprises at least three sections, such that at least one middle section is attached to two other sections, wherein the rigid material is disposed within the at least one middle section, and wherein the two other sections are flexible.

4. The foldable mat of claim 3, wherein the plurality of sections comprises four sections, including two middle sections, and wherein the rigid material is disposed within one middle section of the two middle sections.

5. The foldable mat of claim 1, wherein the restraining mechanism comprises a plurality of straps arranged such that, when the person is secured on the pad with the plurality of straps, the person's shoulders are on top of the rigid material.

6. The foldable mat of claim 5, wherein the plurality of straps comprises at least two straps, and wherein the at least two straps extend substantially perpendicularly from the at least one section comprising the rigid material.

7. The foldable mat of claim 1, wherein the restraining mechanism comprises a plurality of straps including at least one strap arranged to be secured over the person's chest and at least one strap arranged to be secured over the person's shoulders.

8. The foldable mat of claim 1, wherein the restraining mechanism comprises a plurality of straps including at least one fastening mechanism.

9. The foldable mat of claim 6, wherein the at least one fastening mechanism comprises Velcro®.

10. The foldable mat of claim 1, further comprising a plush toy attached to at least one strap of the plurality of straps.

11. The foldable mat of claim 1, wherein one side of the changing pad comprises a non-slip surface.

12. A foldable mat, comprising:

a mat comprising a width, a front side, a back side, and a plurality of sections, each section of the plurality of sections having a width corresponding to the width of the mat;

a padded material disposed between the front side and the back side of the mat;

a rigid material disposed within at least one section of the plurality of sections; and

a restraining mechanism arranged to restrain a person on the mat.

13. The foldable mat of claim 12, wherein the rigid material comprises plastic having a shape corresponding to a shape of the at least one section it is disposed within.

14. The foldable mat of claim 12, wherein the plurality of sections comprises at least three sections, such that at least one middle section is attached to two other sections, and wherein the rigid material is disposed within the at least one middle section.

15. The foldable mat of claim 14, wherein the plurality of sections comprises four sections, including two middle sections, and wherein the rigid material is disposed within one middle section of the two middle sections.

16. The foldable mat of claim 12, wherein the restraining mechanism comprises a plurality of straps arranged such that, when the person is secured on the pad with the plurality of straps, the person's shoulders are on top of the rigid material.

17. The foldable mat of claim 16, wherein the plurality of straps comprises at least two straps, and wherein the at least two straps extend substantially perpendicularly from the at least one section comprising the rigid material.

18. The foldable mat of claim 12, wherein the padded material comprises a plurality of portions of padded material, and wherein each portion of padded material is disposed within a section of the plurality of sections.

19. The foldable mat of claim 12, wherein the restraining mechanism comprises a plurality of straps including at least one strap arranged to be secured over the person's chest and at least one strap arranged to be secured over the person's shoulders.

20. The foldable mat of claim 12, wherein the back side of the mat comprises a non-slip material.

* * * * *