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(54) **PATIENT SUPPORT SURFACE**

(76) Inventors: **Gregory W. Branson**, Batesville, IN (US); **John P. Biondo**, Aurora, IN (US)

Correspondence Address:
Intellectual Property Group
Bose McKinney & Evans LLP
2700 First Indiana Plaza
135 North Pennsylvania Street
Indianapolis, IN 46204 (US)

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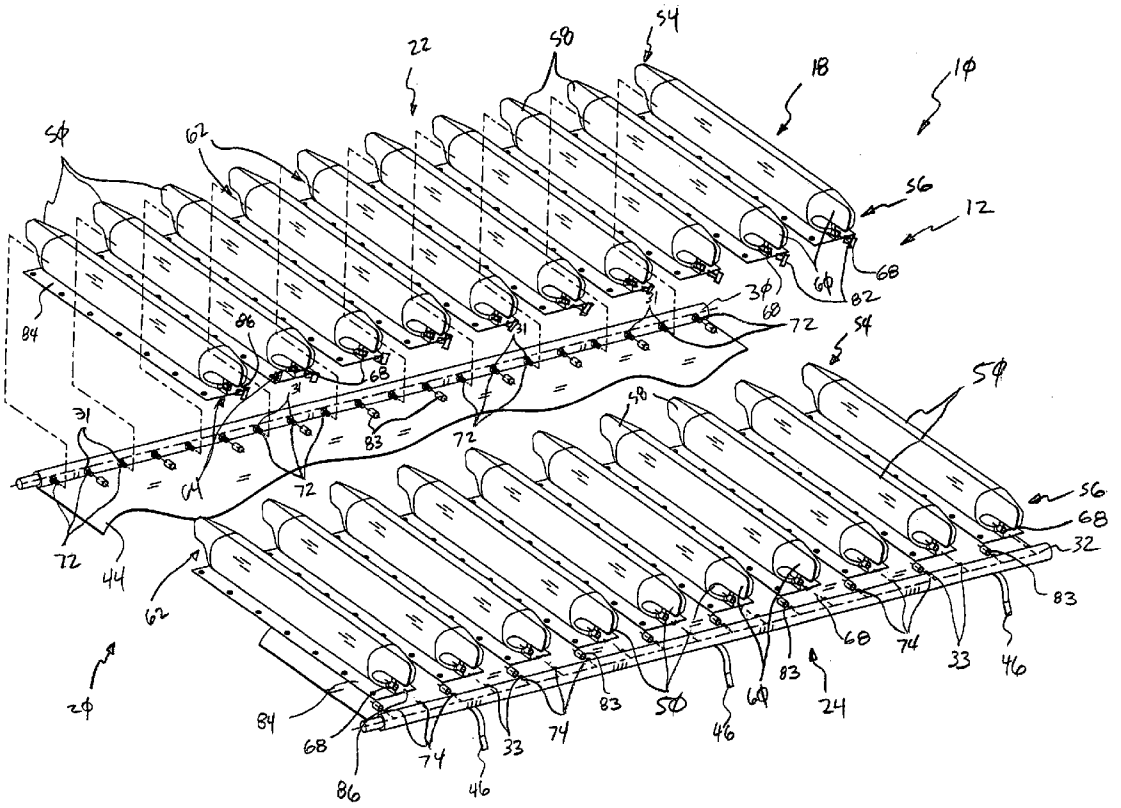
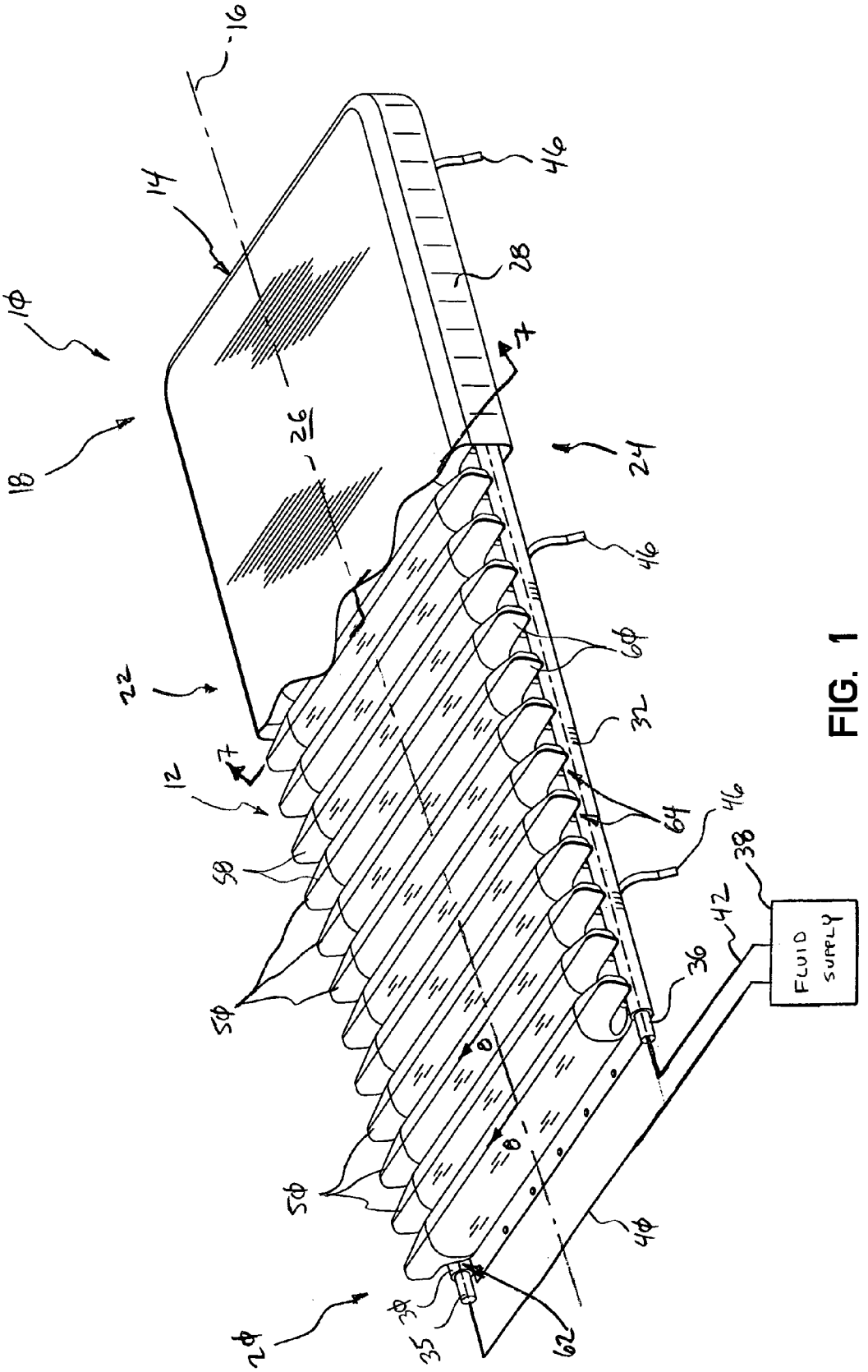
(52) **U.S. Cl.** **5/713**; 5/710

(57) **ABSTRACT**

A fluid filled patient support and related method of distribution, use and disposal thereof.

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FLUID SUPPLY

FIG. 1

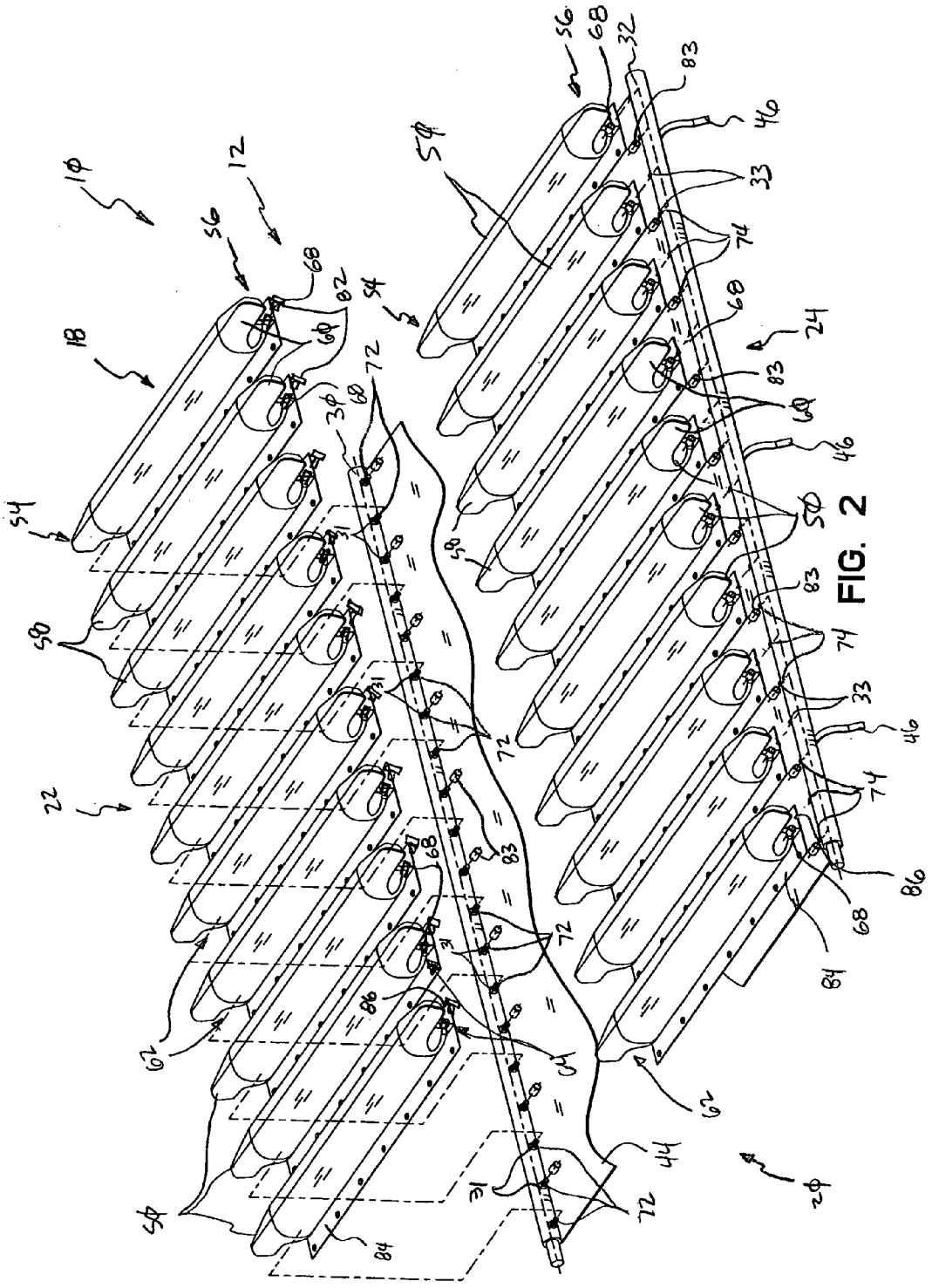

FIG. 2

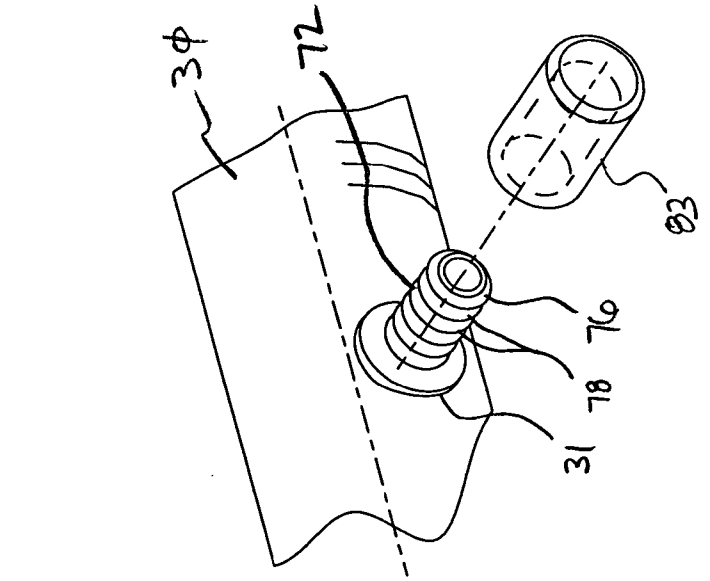

FIG. 4

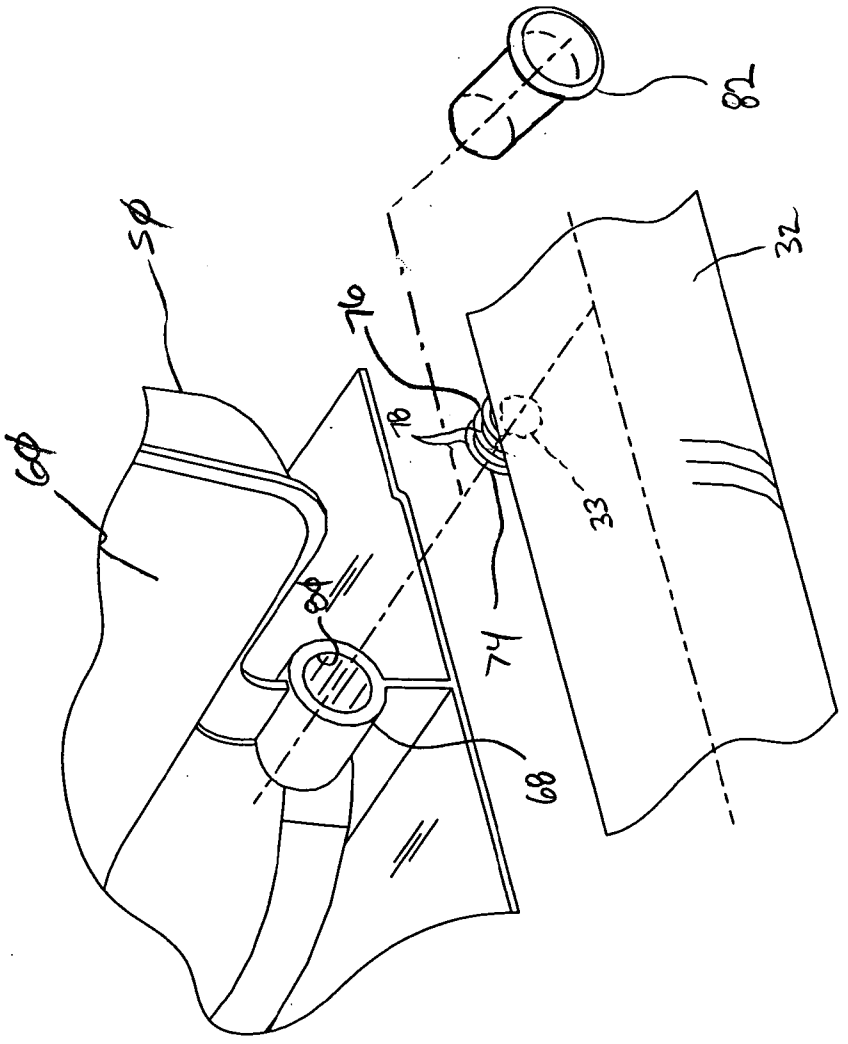

FIG. 3

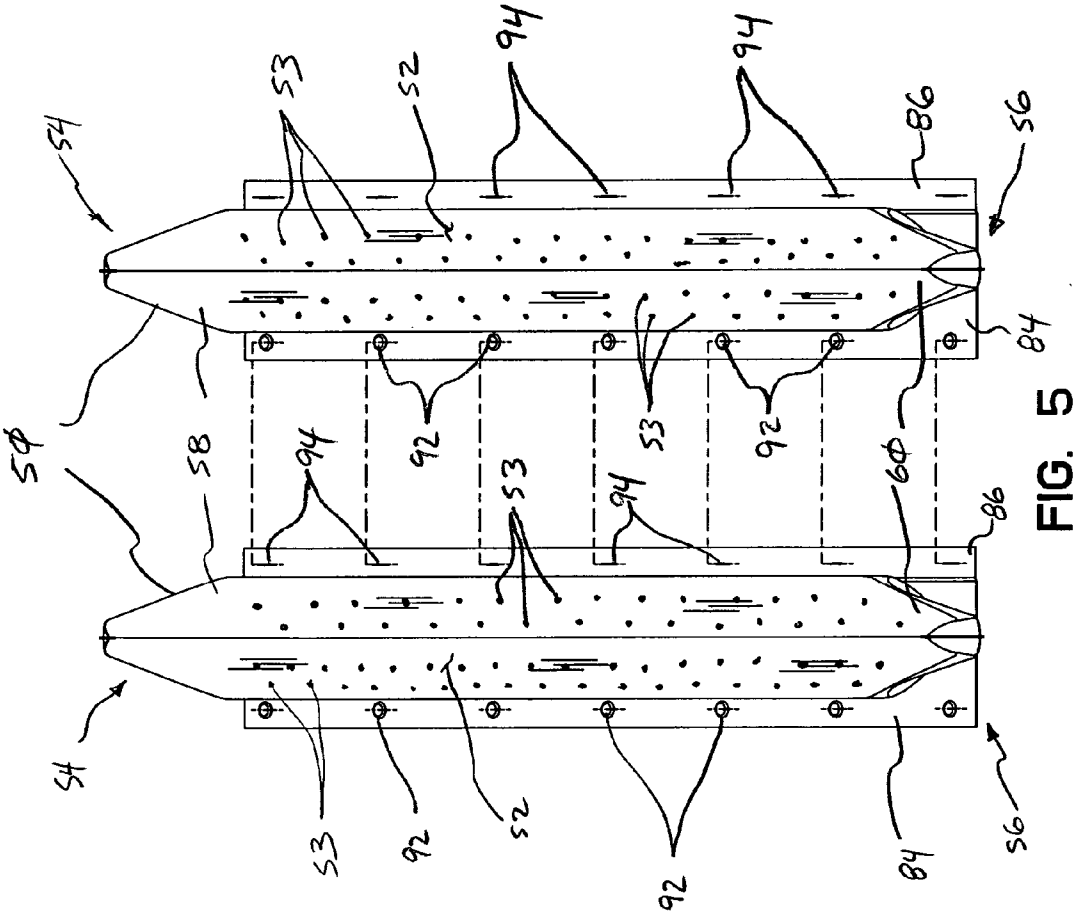
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FIG. 5

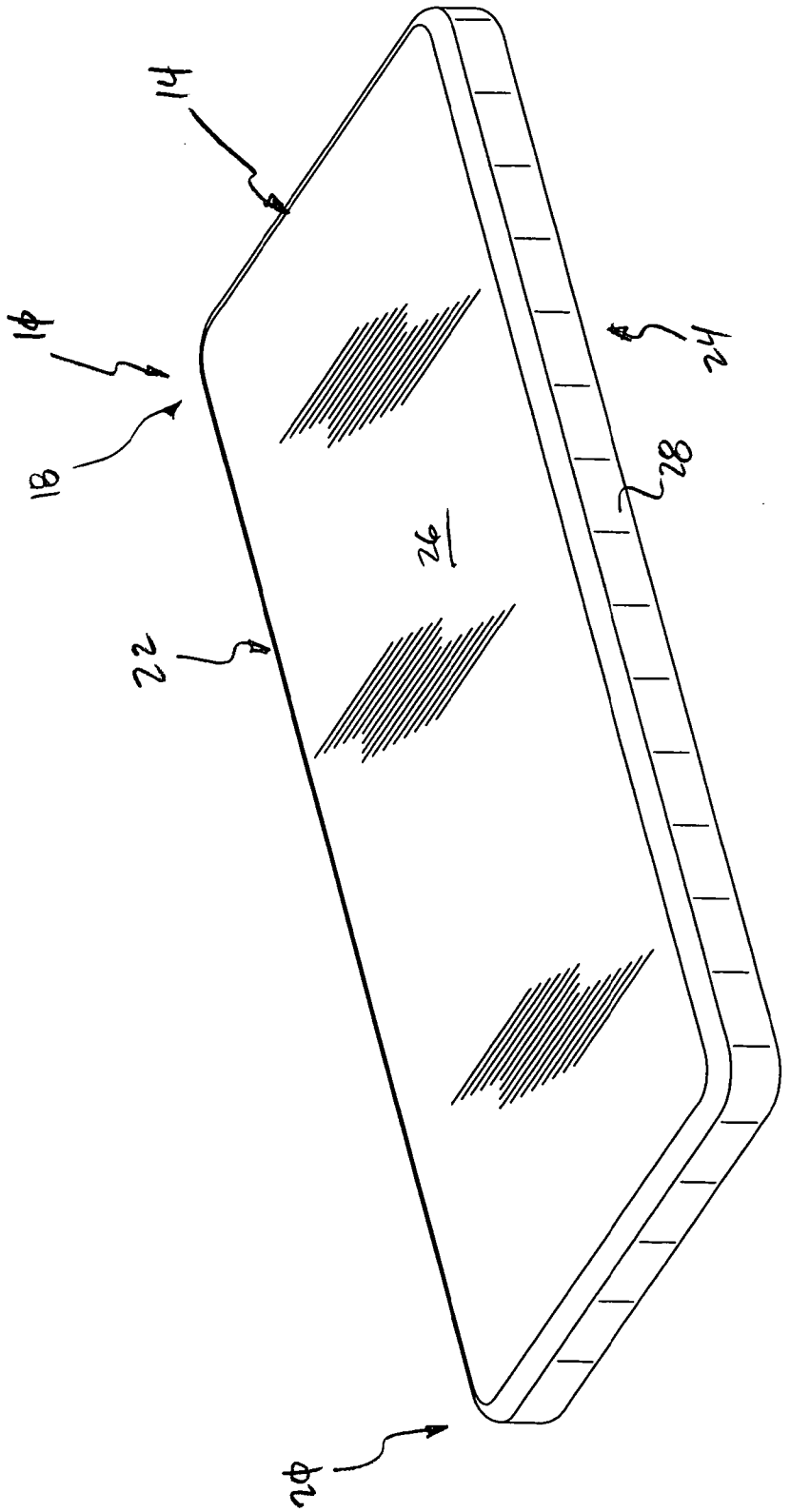

FIG. 6

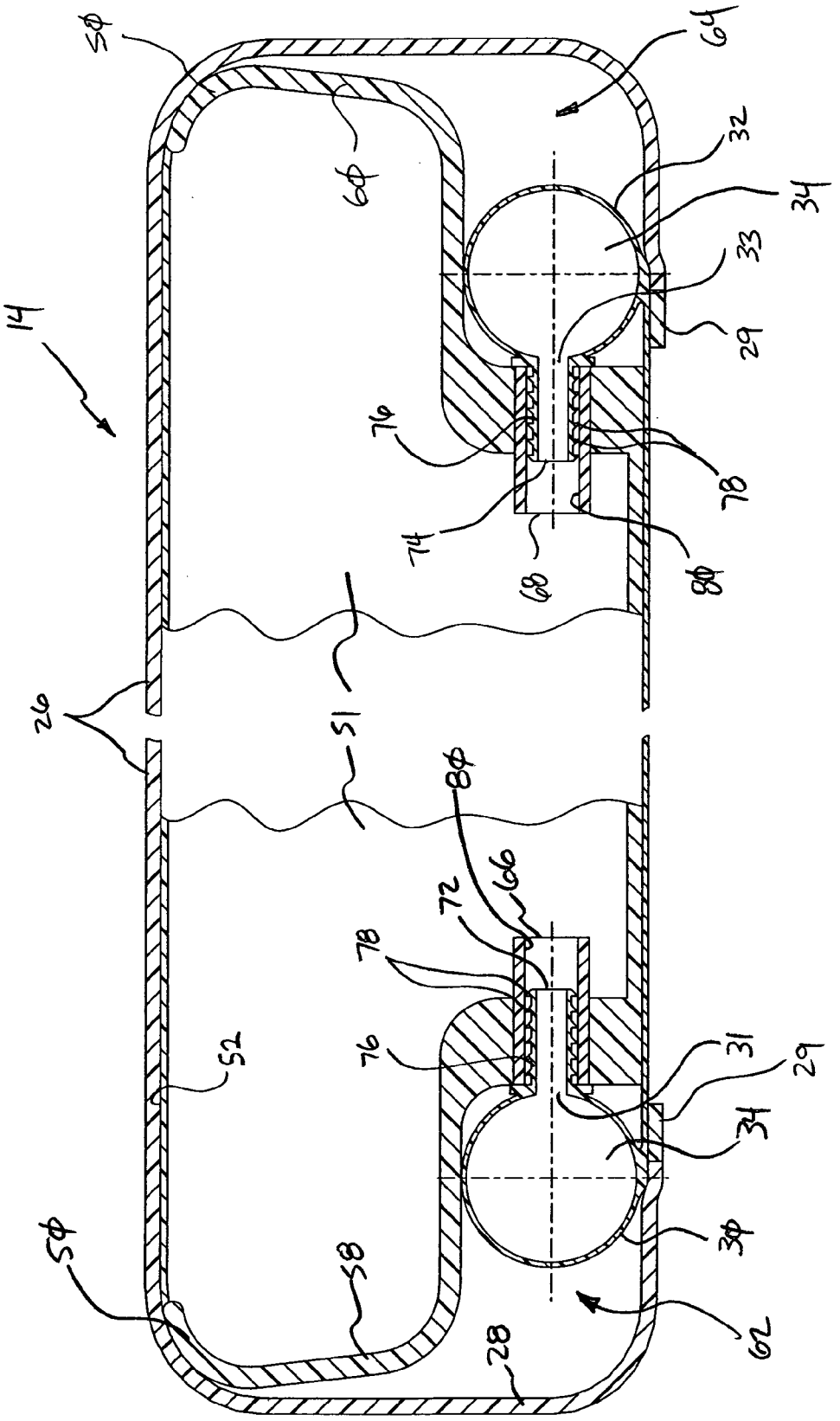
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FIG. 7

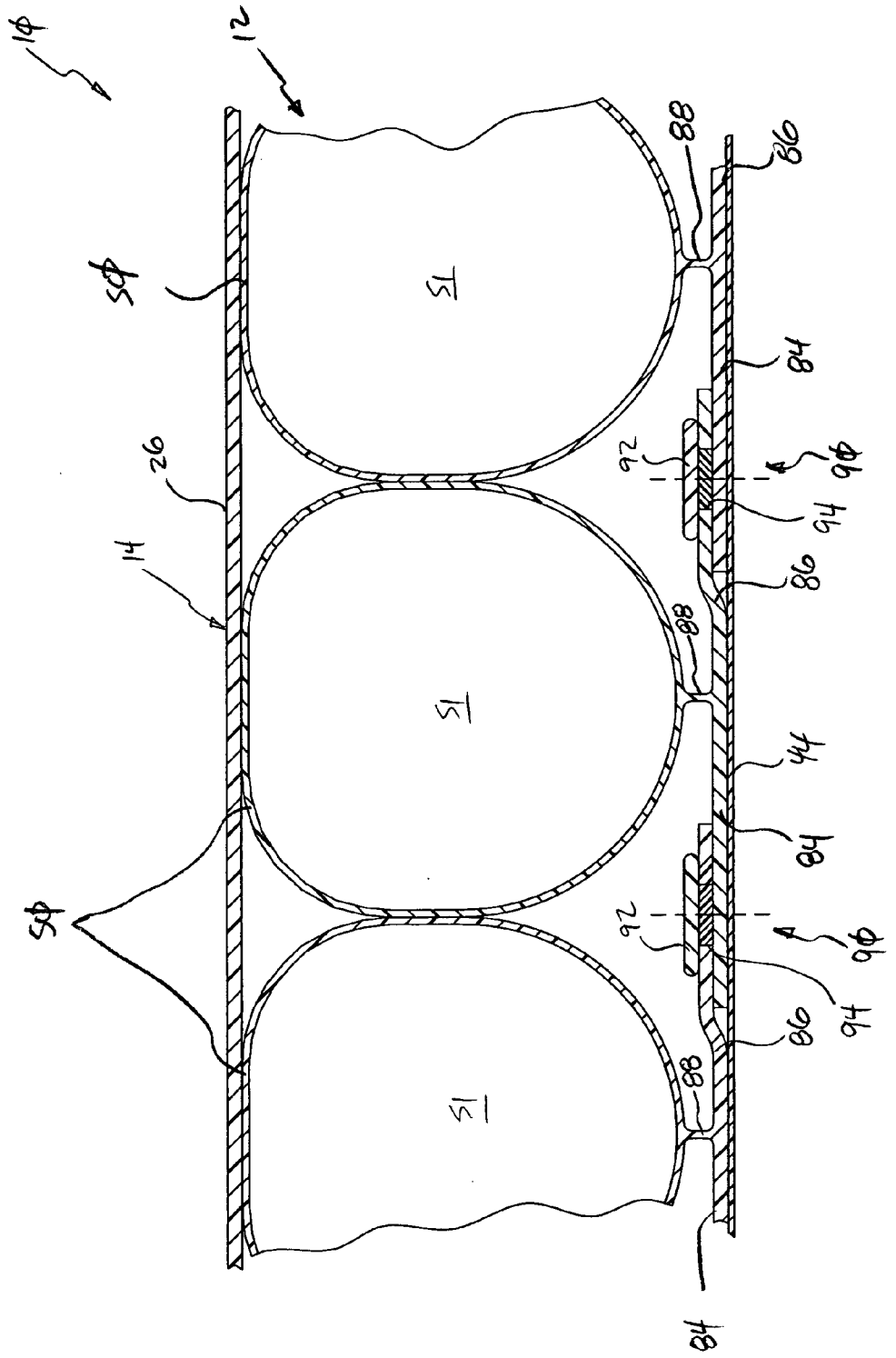
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FIG. 8

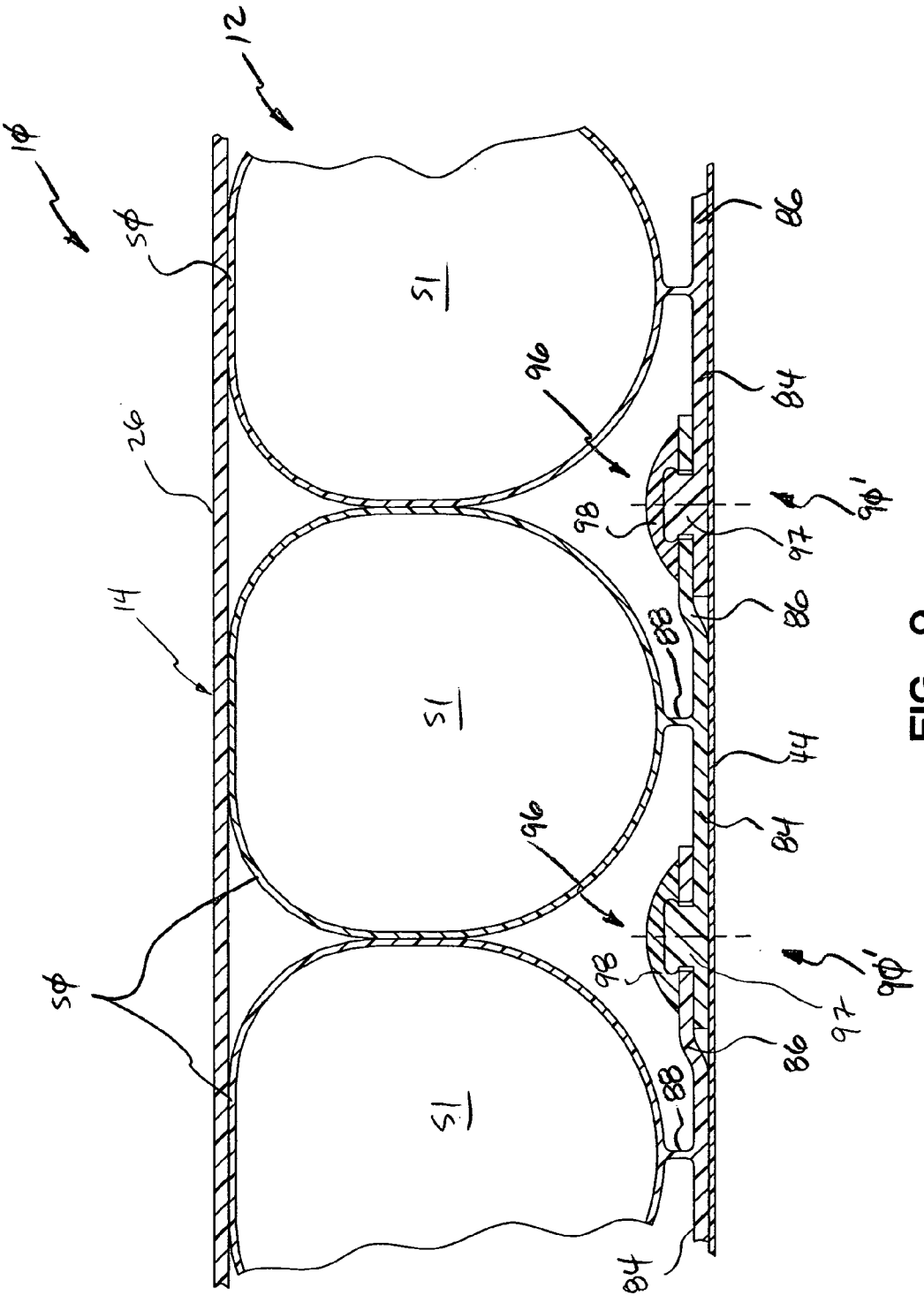
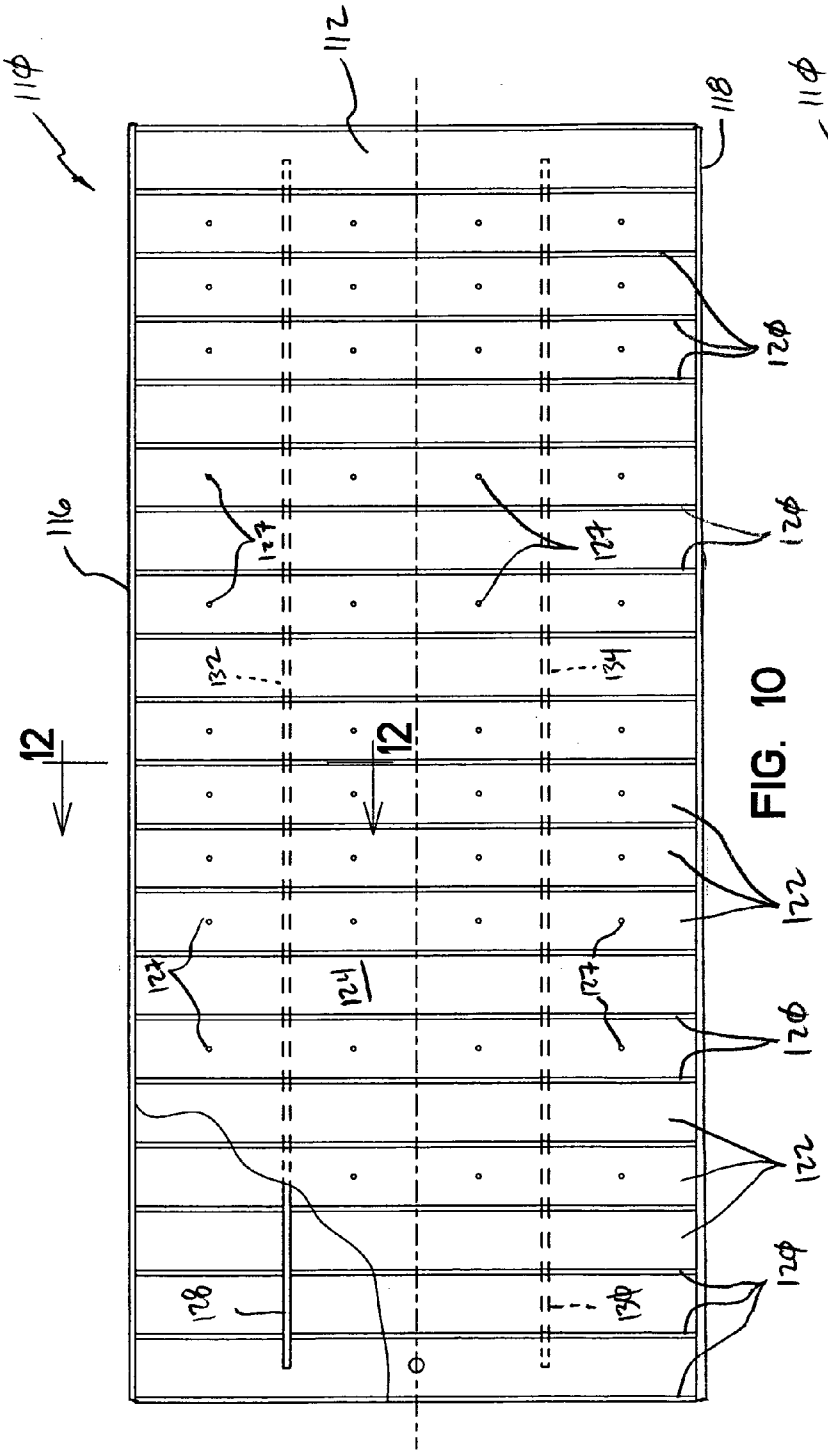


FIG. 9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130
Φ

FIG. 10

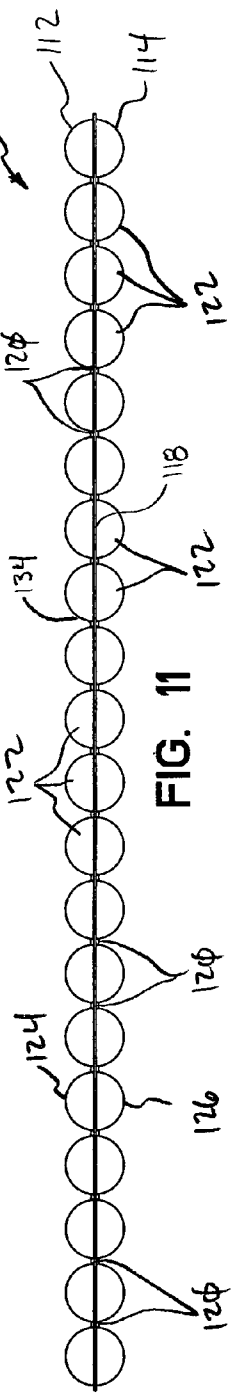
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FIG. 11

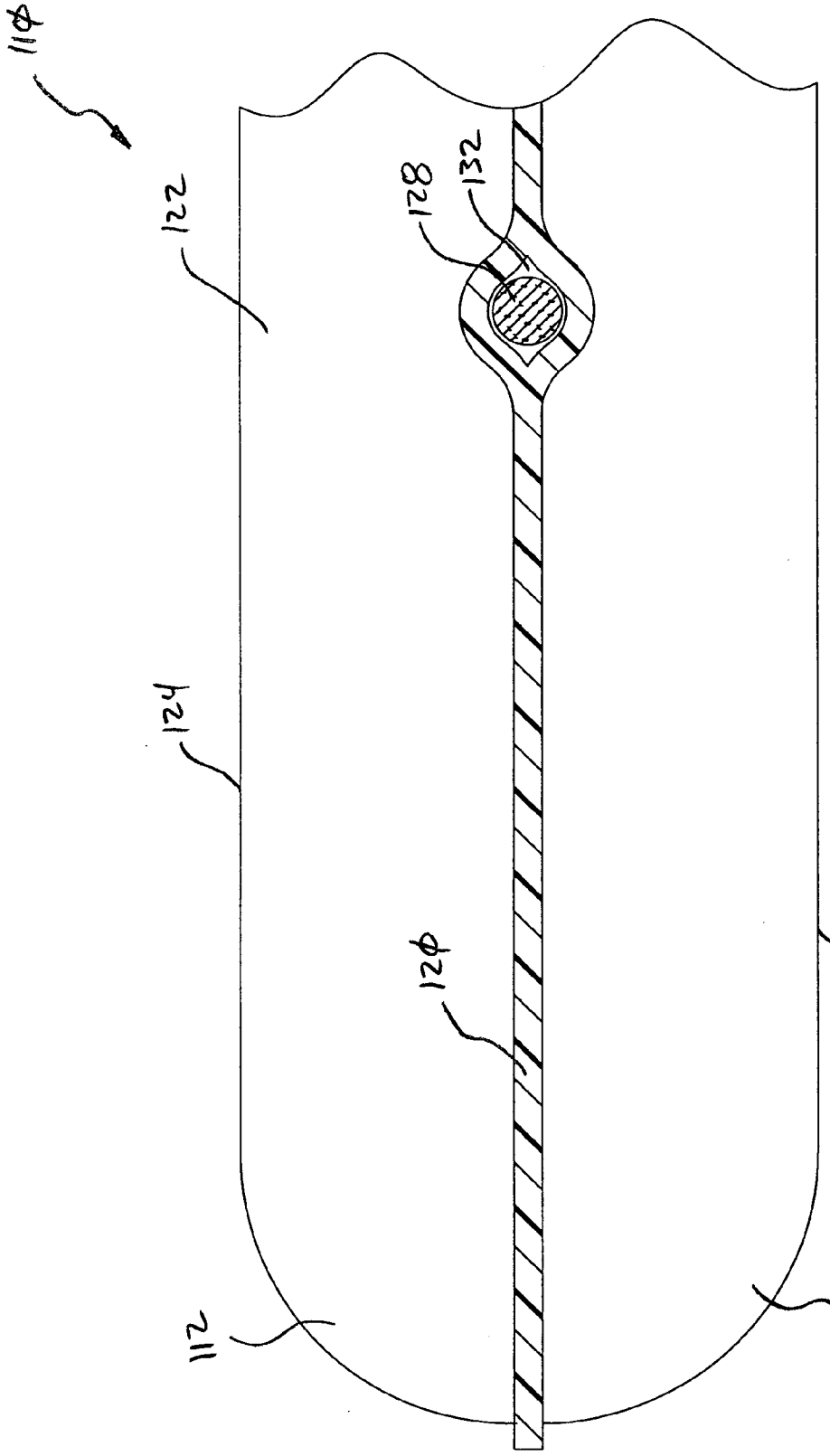
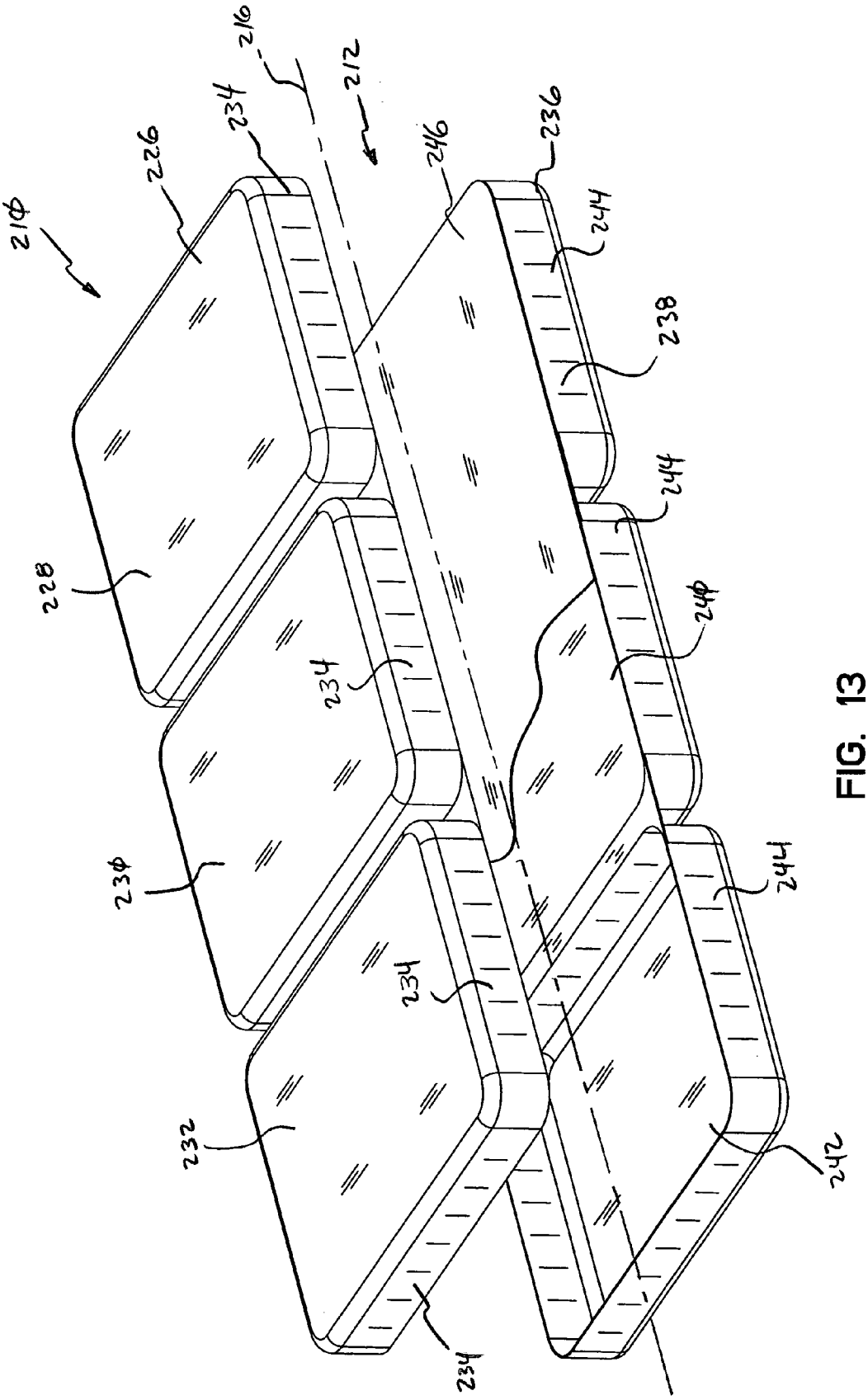


FIG. 12


210
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246
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228
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FIG. 13

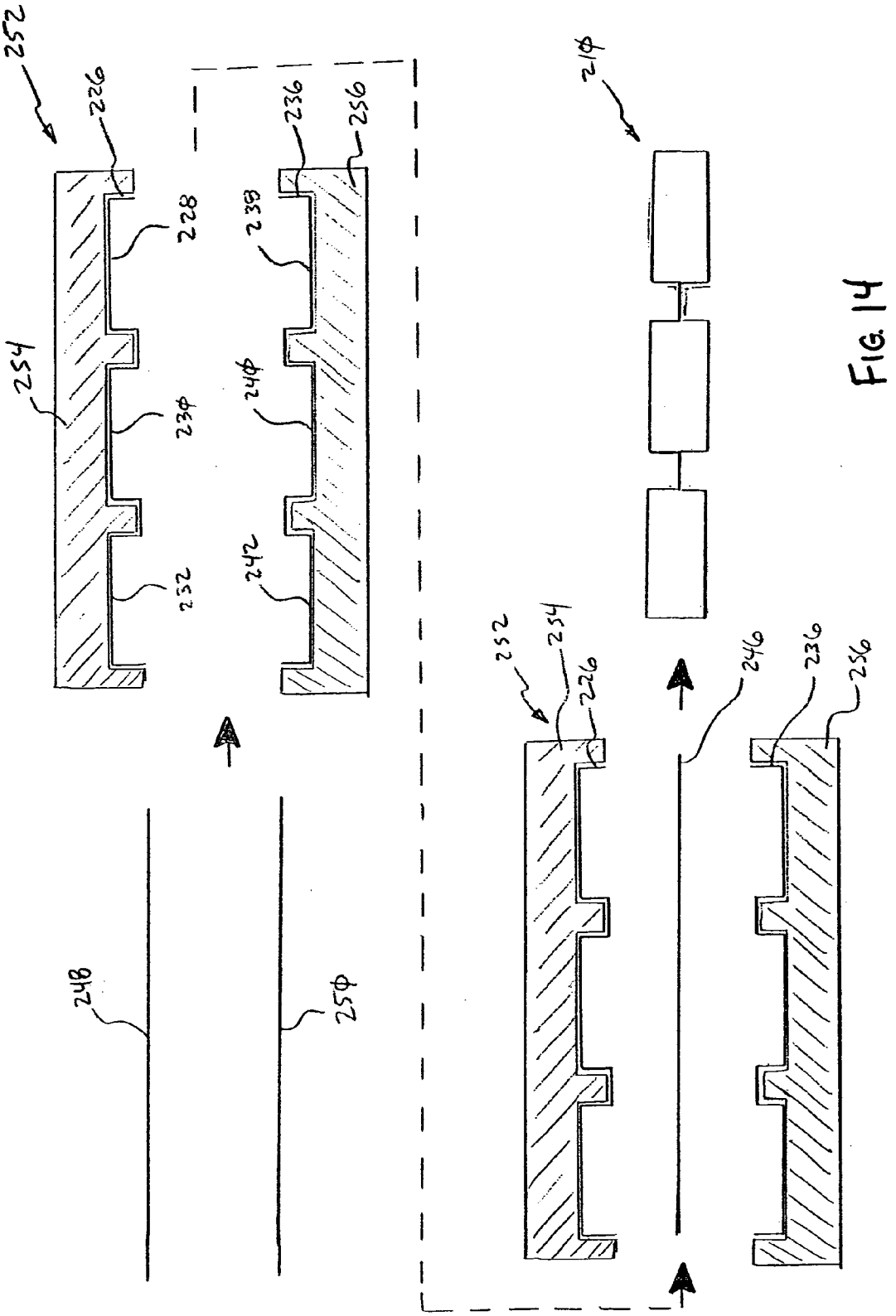

FIG. 14

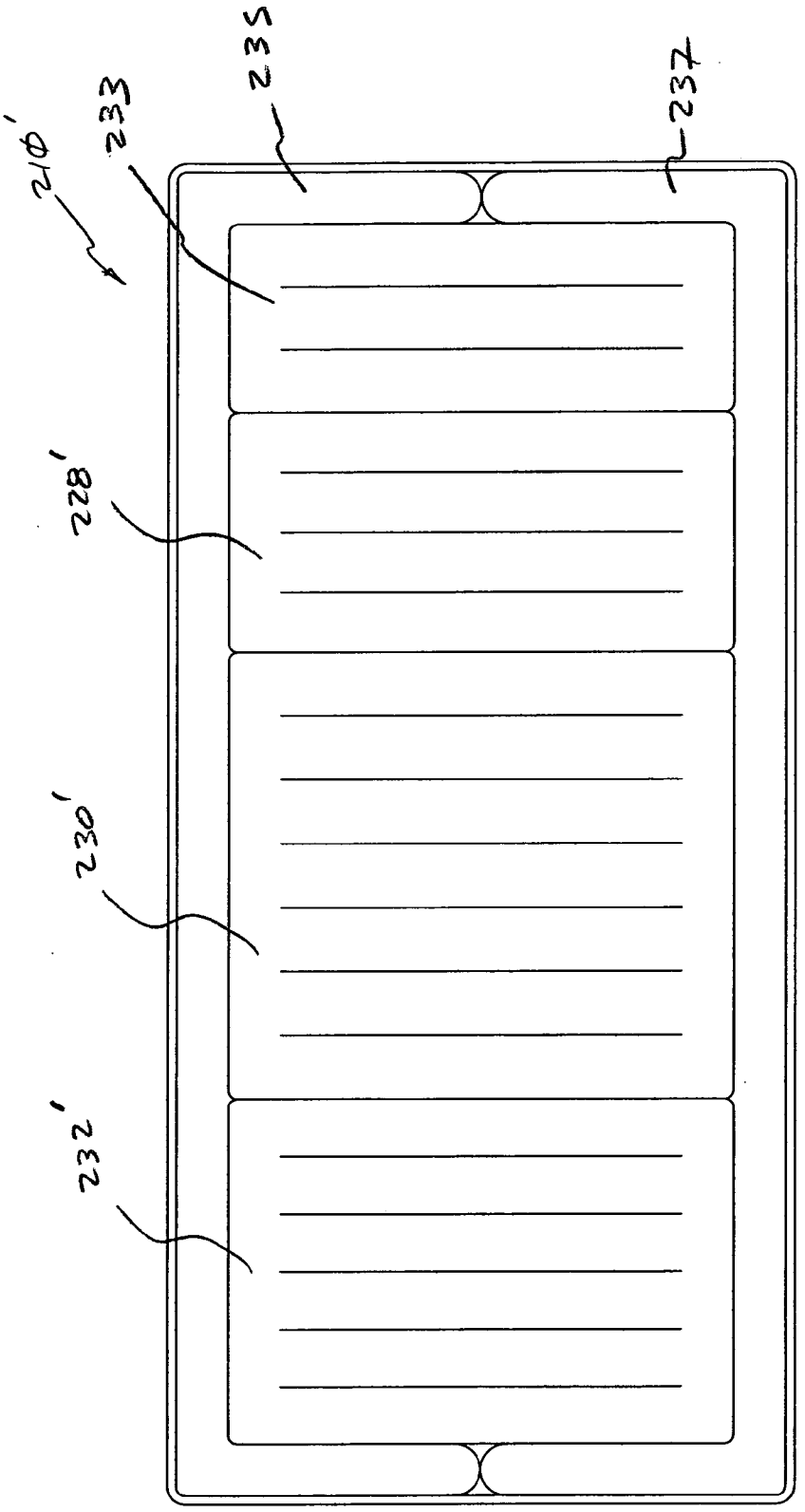

FIG. 15

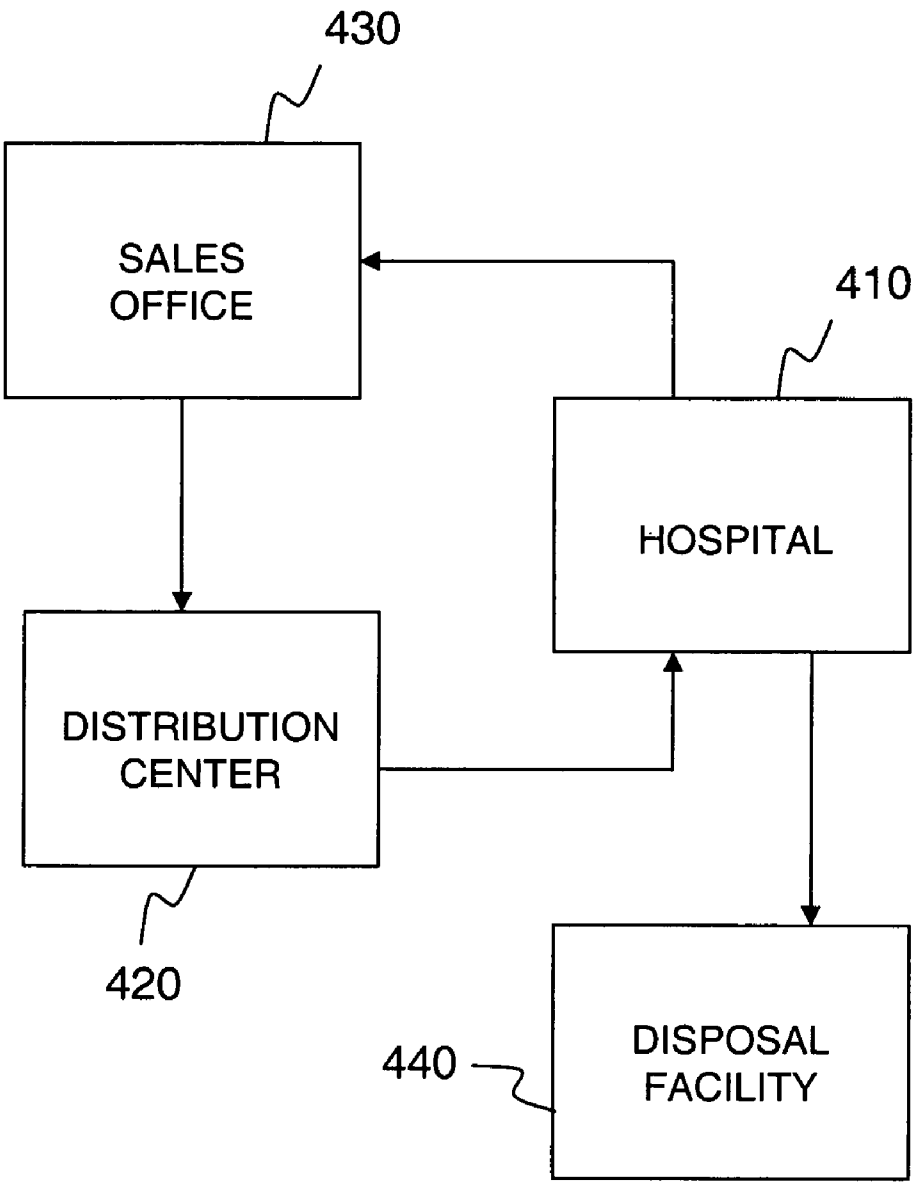
430
SALES OFFICE
410
HOSPITAL
DISTRIBUTION CENTER
420
440
DISPOSAL FACILITY

FIG. 16

PATIENT SUPPORT SURFACE

CROSS-REFERENCE TO RELATED APPLICATION

[0001] This application claims the benefit of U.S. Provisional Patent Application Serial No. 60/435,177, filed Dec. 19, 2002, the disclosure of which is expressly incorporated by reference herein.

BACKGROUND AND SUMMARY OF THE INVENTION

[0002] The present invention relates generally to patient supports and, more particularly, to fluid-filled patient supports for supporting the body of a person. The present invention further relates to a method of providing disposable patient supports.

[0003] Beds, including mattresses, mattress overlays, mattress toppers, and mattress replacement systems having a plurality of air bladders or sacs to provide an adjustable patient support surface are well known in the art. One type of inflatable patient support surface is a "low air loss" mattress which is in communication with a blower and includes a plurality of microvents configured to slowly release air. Examples of conventional inflatable patient supports are disclosed in U.S. Pat. No. 4,949,413 to Goodwin and U.S. Pat. No. 5,647,079 to Hakamiun et al., which are assigned to the assignee of the present invention and the disclosures of which are expressly incorporated by reference herein.

[0004] Traditionally, inflatable patient supports are reusable. More particularly, such patient supports typically include a wipable outer surface that is cleaned after each patient use so that it is sanitized for its use by the next patient. Often such patient supports are rented by hospitals wherein after each patient use, the supplier must physically remove the patient support and have it cleaned and sanitized for future use.

[0005] Additional features and advantages of the present invention will become apparent to those skilled in the art upon consideration of the following detailed description of the presently perceived best mode of carrying out the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

[0006] The detailed description of the drawings particularly refers to the accompanying figures in which:

[0007] **FIG. 1** is a perspective view, with a partial cutaway of the coverlet, of an illustrative mattress of the present invention and schematically showing the connection to a fluid supply;

[0008] **FIG. 2** is a partially exploded perspective view of the mattress of **FIG. 1**, with the coverlet removed for clarity;

[0009] **FIG. 3** is a detailed perspective view of the fluid coupling of a manifold of the mattress, the fluid port of a bladder of the mattress, and a cooperating plug receivable within the fluid port;

[0010] **FIG. 4** is a detailed perspective view of a fluid coupling of a manifold of the mattress and cooperating cap configured to receive the fluid coupling;

[0011] **FIG. 5** is a top perspective view of first and second bladders of the mattress of **FIG. 1**, showing the second bladder uncoupled from the first bladder;

[0012] **FIG. 6** is a perspective view of the mattress of **FIG. 1**, illustrating a coverlet extending across the top surface and side surfaces of the mattress;

[0013] **FIG. 7** is a cross-sectional view taken along line **7-7** of **FIG. 1**;

[0014] **FIG. 8** is a cross-sectional view taken along line **8-8** of **FIG. 1** showing an illustrative coupling for the bladders;

[0015] **FIG. 9** is a cross-sectional view similar to that of **FIG. 8** showing an alternative embodiment coupling for the bladders;

[0016] **FIG. 10** is a top plan view of a further illustrative embodiment mattress of the present invention;

[0017] **FIG. 11** is a side elevational view of the mattress of **FIG. 10**;

[0018] **FIG. 12** is a cross-sectional view taken along line **12-12** of **FIG. 10**, showing a channel form positioned with a lateral seal;

[0019] **FIG. 13** is a partially exploded perspective view, with a partial cutaway, illustrating a further illustrative embodiment mattress of the present invention;

[0020] **FIG. 14** is a schematic view showing an illustrative process of forming the mattress of **FIG. 13**;

[0021] **FIG. 15** is a top plan view of a further illustrative embodiment of the mattress of the present invention; and

[0022] **FIG. 16** is a block diagram illustrating a method of mattress distribution and disposal in accordance with the present invention.

DETAILED DESCRIPTION OF THE DRAWINGS

[0023] With reference to the drawings, **FIGS. 1 and 2** illustrate a mattress assembly **10** according to an illustrative embodiment of the present invention. While in the following discussion reference will be made to a mattress assembly **10**, it should be appreciated that the present invention may be used not only as a mattress assembly, but also as a mattress overlay, a mattress topper, or other cushioned product for use in connection with a patient support, such as a chair cushion, a side rail pad or a bed extender. Further, the mattress assembly **10** may be supported by the frame or deck of any conventional bed. For example, the mattress assembly **10** could be supported by the frame of the bed disclosed in U.S. Pat. No. 6,208,250, which is assigned to the assignee of the present invention and the disclosure of which is expressly incorporated by reference herein.

[0024] The mattress assembly **10** includes a fluid cushion or support assembly **12** configured to be located within a top coverlet **14**. The fluid cushion assembly **12** defines a longitudinal axis **16** extending between a head end **18** and an opposing foot end **20** of the mattress assembly **10**. Further, the fluid cushion assembly **12** defines longitudinally extending opposing side edges **22** and **24**. The top coverlet **14** includes a top surface **26** for supporting a patient, and a sidewall **28** which extends downwardly around the peripheral edge of the fluid cushion assembly **12** as defined by the

head and foot ends **18** and **20**, and the opposing side edges **20** and **24**. An elastic band **29** (**FIG. 7**) may be coupled to the sidewall **28** of the coverlet **14** in order to assist in securing the coverlet **14** to the fluid cushion assembly **12**.

[**0025**] The support assembly **12** includes first and second longitudinal air distribution channels or manifolds **30** and **32**. The first and second manifolds **30** and **32** are laterally spaced proximate the opposing side edges **20** and **24**, respectively, and extend longitudinally between the head end **18** and the foot end **20** of the mattress assembly **10**. The first and second manifolds **30** and **32** include a plurality of first and second fluid ports **31** and **33**, respectively. The first and second fluid ports **31** and **33** are longitudinally spaced and in fluid communication with a fluid chamber **34** defined by each manifold **30** and **32** (**FIGS. 2 and 7**). As detailed below, each manifold **30** and **32** illustratively comprises a tubular member formed from a polymer sheet material, such as polyolefin. Illustratively, at the head end **18**, each manifold **30** and **32** is sealed, while at the foot end **20** each manifold **30** and **32** includes a fluid coupling **35** and **36**. Each fluid coupling **35** and **36** is configured to be placed in fluid communication with a conventional fluid supply **38** through tubular members or hoses **40** and **42**.

[**0026**] A connecting sheet **44** illustratively couples the first manifold **30** to the second manifold **32** and extends below the support assembly **12**. A plurality of straps **46** are coupled to the manifolds **30** and **32** and are configured to secure the mattress assembly **10** to a support surface, such as a bed frame (not shown).

[**0027**] The support assembly **12** further includes a plurality of longitudinally spaced and transversely extending air tunnels or fluid bladders **50** extending between the first manifold **30** and the second manifold **32**. Each bladder **50** defines a fluid chamber **51** configured to be placed in fluid communication with one or both of the manifolds **30** and **32** (**FIG. 7**). More particularly, each bladder **50** illustratively comprises a sheet which is generally folded in half to form a tubular member, wherein the open side edges and bottom edges are sealed through conventional means, such as radio-frequency (RF) welding, to form the fluid chamber **51**. As illustrated in **FIG. 5**, the top surface **52** of each bladder **50** illustratively includes a plurality of microholes or microvents **53** that permit air to slowly leak out of the fluid chamber **51** at a predetermined rate, thereby defining a "low air loss" bladder **50**. In one illustrative embodiment, each microvent has a diameter of approximately 0.030 inches when the bladder **50** is inflated to a pressure up to approximately 18 inches of water. As detailed below, each bladder **50** is illustratively formed from a polymer sheet material, such as polyolefin.

[**0028**] With reference to **FIGS. 5 and 7**, opposing ends **54** and **56** of the bladders **50** include retaining portions or extensions **58** and **60**, respectively, which define air pockets and extend laterally outwardly and vertically above the respective first and second manifolds **30** and **32**. In other words, the retaining portions **58** and **60** define first and second receiving notches **62** and **64** which receive the first and second manifolds **30** and **32**, respectively, thereby preventing lateral movement of the bladders **50** relative to the manifolds **30** and **32**.

[**0029**] Each bladder **50** further includes first and second fluid ports **66** and **68** positioned within the receiving notches **62** and **64**, respectively. The fluid ports **66** and **68** are in fluid communication with the fluid chamber **51** defined by the bladder **50**. Each fluid port **66** and **68** is configured to be selectively and releasably coupled to one of a plurality of fluid couplings **72** and **74**, respectively, supported by the first and second manifolds **30** and **32**. As shown in **FIG. 2**, the fluid couplings **72** and **74** are longitudinally spaced along the manifolds **30** and **32**, respectively, and extend laterally inwardly toward the bladders **50**. Illustratively, the fluid couplings **72** and **74** are formed from a material weldable to the manifolds **30** and **32**, such as polyolefin.

[**0030**] As illustrated in **FIGS. 3, 4** and **7**, each fluid coupling **72** and **74** includes a tubular member **76** having a first end fixed to the fluid port **31**, **33** of a respective one of the first and second manifolds **30** and **32**. A second end of each fluid coupling **72** and **74** is releasably coupled to one of the fluid ports **66** and **68** of a bladder **50**. Each tubular member **76** includes a plurality of retaining elements **78**, illustratively barbs, integrally formed with and extending circumferentially outwardly from the tubular member **76**. The retaining elements **78** engage an inner surface **80** of the respective fluid port **66**, **68**, thereby preventing inadvertent uncoupling therefrom.

[**0031**] Given the modular design of the mattress assembly **10**, each bladder **50** may be selectively coupled for fluid communication with one or both of the first and second manifolds **30**, **32**, thereby defining a plurality of independently controllable fluid zones. For example, the fluid supply **38** may provide a high pressure fluid to one of the first and second manifolds **30** and **32** and provide a low pressure fluid to the other of the first and second manifolds **30** and **32**. As illustrated in **FIGS. 2 and 3**, conventional plugs **82** may be sealingly received within the unused fluid ports **66** and **68**, to prevent the exhausting of fluid from the fluid chamber **51** of the respective bladder **50** to atmosphere. Likewise, conventional caps **83** may sealingly receive the unused fluid couplings **72** and **74** to prevent the exhausting of fluid from the respective fluid chambers **34** of the manifolds **30** and **32** to atmosphere. It should be appreciated that the fluid ports **66** and **68** and the fluid couplings **72** and **74** which are not required may be permanently sealed or removed in their entirety from the bladders **50** and manifolds **30** and **32**, respectively.

[**0032**] More particularly, the fluid supply **38** may include a conventional control system (not shown) having appropriate pressure sensors and fluid valves which are configured to regulate the pressure within each of the manifolds **30** and **32**. As such, the pressure of the fluid in each of the air zones defined by the bladders **50** may be independently sensed and controlled in order to maintain desired pressures therein. An example of an inflatable patient support surface system is provided in U.S. Pat. No. 5,647,079, which is assigned to the assignee of the present invention and the disclosure of which is expressly incorporated by reference herein.

[**0033**] Referring now to **FIGS. 2, 5, 8**, and **9**, each bladder **50** illustratively includes a first connecting sheet **84** extending longitudinally in a first direction, and a second connecting sheet **86** extending longitudinally in a second direction opposite the first direction of the first connecting sheet **84**. The connecting sheets **84** and **86** are coupled to a lower portion of each bladder **50** through a hinge **88**. The hinge **88** permits for pivotal movement of the bladder **50** relative to adjacent bladders **50**.

[0034] Each connecting sheet **84** and **86** includes a coupler **90** configured to restrain movement thereof relative to the connecting sheet **84** and **86** of an adjacent bladder **50**. More particularly, a first attachment member of the coupler **90** is coupled to each first connecting sheet **84** and is configured to operably cooperate with a second attachment member of the coupler **90** which is coupled to the second connecting sheet **86** of an adjacent bladder **50**.

[0035] As illustrated in **FIG. 8**, the coupler **90** may include a first attachment member comprising a plurality of buttons **92** supported by the first connecting sheet **84** and a second attachment member comprising a plurality of button holes **94** supported by the second connecting sheet **86**. The buttons **92** are removably received within the button holes **94** to releasably secure the first connecting sheet **84** to the second connecting sheet **86**. Alternatively, as illustrated in **FIG. 9**, the coupler **90'** may include a plurality of snaps **96**, including a first attachment member **97** coupled to the first connecting sheet **84** and a second attachment member **98** coupled to the second connecting sheet **86** and securingly engagable with the first attachment member **97**. It should be appreciated that other conventional couplers, such as hook and loop fasteners, may be readily substituted for the buttons **92** and snaps **96** identified above. Further, should a permanent connection between adjacent bladders **50** be desired, the first and second connecting sheets **84** and **86** may be secured together using permanent fixation means, such as RF welding or adhesives. Alternatively, the mattress assembly **10** may be made up of preformed top and bottom parts as disclosed in U.S. Pat. No. 4,896,389, which is assigned to the assignee of the present invention and incorporated by reference herein.

[0036] As described above, the components on the mattress **10**, including manifolds **30** and **32**, bladders **50**, fluid ports **66** and **68**, and fluid couplings **72** and **74**, are illustratively formed from a polymeric material and, more particularly, a polyolefin. However, other similar materials which facilitate easy disposal may be substituted therefor. The appropriate material is selected based upon several criteria, including: (i) ease of bonding through conventional means, such as RF welding, (ii) capability of disposal by conventional means without adverse impact, such as incineration without releasing toxic gases, (iii) bio-compatibility, (iv) availability and (v) cost. All of the aforementioned criteria permit the disposal of the mattress **10** after a single patient use. Materials which meet the above criteria include polymers including, but are not limited to: ethylene-vinyl acetate, polyester, polyolefin blends, polyolefin laminates, functionalized polyolefins, and polyethylene terephthalate glycol.

[0037] Turning now to FIGS. **10-12**, a further illustrative embodiment mattress assembly **110** is illustrated. The mattress assembly **110** includes an upper sheet **112** coupled to a lower sheet **114**. More particularly, the upper sheet **112** and the lower sheet **114** are secured together through first and second longitudinally extending side seals **116** and **118** and a plurality of laterally extending seals **120**. The lateral seals **120** define a plurality of laterally extending bladders **122**. As illustrated in **FIG. 11**, the lateral seals **120** are formed proximate the vertical center plane of the mattress assembly **110** intermediate a top surface **124** defined by the upper sheet **112** and a bottom surface **126** defined by the lower sheet **114**. As with the embodiments of FIGS. **1-9**, the top surface **124** illustratively includes a plurality of microvents **127** that permit air to slowly leak out of the bladders **122** at a predetermined rate. In one illustrative embodiment, each microvent **127** has a diameter of approximately 0.030 inches when the bladders **122** are inflated to a pressure up to approximately 18 inches of water.

[0038] First and second longitudinally extending channel forms **128** and **130** are received intermediate the upper and lower sheets **112** and **114**. The channel forms **128** and **130** illustratively comprise hollow core ropes which define air passageways **132** and **134**, respectively, within the lateral seals **120** thereby facilitating fluid communication between adjacent bladders **122**. During assembly, the channel forms **128** and **130** are positioned between the upper and lower sheets **112** and **114** before the lateral seals **120** are formed.

[0039] Illustratively, the upper and lower sheets **112** and **114** are formed from a polymer sheet material, such as a polyolefin. As detailed above, any material which is easily bonded, disposable, bio-compatible, readily available, and relatively inexpensive, may be substituted therefor.

[0040] Turning now to **FIGS. 13 and 14**, a further illustrative embodiment mattress assembly **210** and related method are illustrated. The mattress assembly **210** includes a support assembly **212** defining a longitudinal axis **216** extending between a head end **218** and a foot end **220**. First and second longitudinally extending sides **220** and **224** extended between the head end **218** and the foot end **220**.

[0041] The support assembly **212** includes an upper member **226**, illustratively a polyolefin sheet, including a plurality of vacuum formed, upwardly extending cavities **228**, **230** and **232**. Each cavity **228**, **230**, and **232** includes a peripheral wall **234**, which fluidly isolates it from adjacent cavities **228**, **230**, and **232**. It should be appreciated that openings may be formed within the wall **234** to provide for fluid communication between the adjacent cavities **228**, **230**, and **232**.

[0042] The support assembly **212** further includes a lower member **236**, also illustratively a polyolefin sheet, including a plurality of vacuum formed, downwardly extending cavities **238**, **240** and **242**. Again, each cavity **238**, **240**, and **242** includes a peripheral wall **244**, which fluidly isolates it from adjacent cavities **238**, **240**, and **242**. While in the embodiment illustrated in **FIGS. 13 and 14**, the lower member **236** includes a plurality of cavities **238**, **240** and **242**, it should be appreciated that the lower member **236** may alternatively comprise a substantially planar sheet.

[0043] In the illustrative embodiment, an intermediate layer **246** is coupled between the upper member **226** and the lower member **236**, thereby separating the upper cavities **228**, **230**, and **232** from fluid communication with the lower cavities **238**, **240**, and **242**. As such, the cavities **228**, **230**, **232** and **238**, **240**, **242** define a plurality of upper fluid zones and a plurality of lower fluid zones, respectively. Illustratively, the intermediate layer **246** comprises a substantially planar sheet of polyolefin.

[0044] In the manner detailed above, a fluid supply **38** may be fluidly coupled to the mattress assembly **210** and illustratively includes a conventional control system (not shown) configured to regulate the pressure within each of the cavities **228**, **230**, **232** and **238**, **240**, **242** defining a plurality of upper fluid zones and a plurality of lower fluid zones. As

such, the pressure of the fluid in each of the fluid zones may be independently sensed and controlled in order to maintain desired pressures therein.

[0045] While the upper member **226**, the lower member **236**, and the intermediate layer **246** are illustratively formed from polyolefin, any material which is easily bonded, disposable, bio-compatible, readily available, and relatively inexpensive, may be substituted therefor.

[0046] As illustrated in **FIG. 14**, the mattress assembly **210** of **FIG. 13** is formed initially by providing upper and lower sheets **248** and **250** of polyolefin. Each sheet **248** and **250** is placed in a vacuum mold **252** where the plurality of upwardly extending cavities **228**, **230**, and **232** are formed to define the upper member **226**, and the plurality of downwardly extending cavities **238**, **240**, and **242** are formed to define the lower member **236**. More particularly, the mold **252** includes cooperating upper and lower mold members **254** and **256**. The upper mold member **254** draws a vacuum on the upper sheet **248** to form the upwardly extending cavities **228**, **230**, and **232**, while the lower mold member **256** draws a vacuum on the lower sheet **250** to form the downwardly extending cavities **238**, **240**, **242**.

[0047] Next, the intermediate layer **246** is positioned between the upper member **226** and the lower member **236**. The upper member **226**, the intermediate layer **246** and the lower member **236** are then secured together in a sealing relationship, illustratively through conventional means, such as RF welding. The mattress assembly **210** may be completed by the application of any desired additional components such as fluid couplings and a coverlet.

[0048] **FIG. 15** illustrates an alternative embodiment mattress assembly **210'** which may be formed through a vacuum molding process in a manner similar to that of the mattress assembly **210** of **FIGS. 13 and 14**. Again, the mattress assembly **210'** includes a plurality of upwardly extending cavities **228'**, **230'**, **232'**, **233**, **235**, and **237** and a plurality of downwardly extending cavities (not shown) which are substantially identical to the upwardly extending cavities. The upwardly extending cavities **228'**, **230'**, **232'**, **233**, **235**, and **237** and the downwardly extending cavities include peripheral or edge bladders **235** and **237** which may be utilized as manifolds to supply air to the remaining upper cavities **228'**, **230'**, **232'**, and **233** and to the lower cavities.

[0049] **FIG. 16** is a block diagram illustrating a method of mattress distribution and disposal in accordance with an illustrative embodiment of the present invention. The illustrated method eliminates the need for service technicians from the mattress supplier to install, and then subsequently remove and clean, a conventional mattress from a hospital or care facility **410**. Moreover, the prior art method typically requires that a service technician remove the mattress from the hospital after use by a single patient. The patient support is then returned to a service center and subsequently sent to a cleaning or laundry facility for sterilization. The method of the present invention simplifies this process due to the disposability of the mattress.

[0050] Referring further to **FIG. 16**, the mattress **10** or patient support is initially stored at a distribution center **420**. Likewise, a fluid supply **38** is stored at the hospital **410** and may be owned or rented by the hospital **410**. The fluid supply **38** illustratively remains at the hospital for a longer period of time than the single use mattress **10** and is configures for use with multiple patients supported on multiple mattresses **10**. When requiring a mattress **10**, the hospital **410** contacts a sales office **430**. Such communication with the sales office **430** may be through conventional means, such as telephone, electronic mail or conventional mail. Upon receiving an order for a mattress **10**, the sales office **430** processes the order and sends a request to the distribution center **420**. In turn, the distribution center **420** sends the mattress **10** to the hospital **410**, again through conventional channels such as conventional mail. Illustratively, the mattress **10** is shipped in a sterile condition and is contained within sealed packaging to maintain its sterile condition.

[0051] Upon receiving the mattress **10**, the hospital **410** unpacks the mattress **10** from the packaging and places the mattress **10** on a support surface, such as the frame of a hospital bed. Next, the hospital bed **410** couples the mattress to the fluid supply **38**. Fluid is then supplied to the mattress **10** from the fluid supply **38** thereby inflating the plurality of bladders **50**. During operation, a patient is supported on the upper surface **26** of the mattress **10**. As detailed above, the fluid supply **38** illustratively controls selected zones of the bladders **50** independently such that different fluid zones are provided with different pressures. Once treatment of the patient has been completed, and the mattress **10** is no longer required, the mattress **10** is deflated and the fluid supply **38** uncoupled therefrom. The mattress **10** is then replaced with a substantially identical second mattress for providing support to a different patient. Next, the hospital properly packages and ships the mattress **10** to a certified disposal facility **440**. The disposal facility **440** then disposes of the mattress in a proper manner. Illustratively, the mattress **10** is incinerated at the disposal facility **440**.

[0052] Although the invention has been described in detail with reference to certain preferred embodiments, variations and modifications exist within the spirit and scope of the invention as described and defined in the following claims.

What is claimed is:

1. A patient support apparatus comprising:

a longitudinally extending first manifold;

a longitudinally extending second manifold positioned in laterally spaced relation to the first manifold;

a plurality of laterally extending bladders, each bladder positioned parallel to the other bladders and including opposing first and second ends;

a plurality of longitudinally spaced first fluid couplings coupled to the first manifold and configured to provide fluid communication between the first manifold and at least one of the plurality of bladders;

a plurality of longitudinally spaced second fluid couplings coupled to the second manifold and configured to provide fluid communication between the second manifold and at least one of the plurality of bladders; and

wherein the plurality of bladders are configured to be removably received intermediate the first and second longitudinally spaced manifolds, the first fluid couplings being configured to selectively and releasably couple the first manifold to the first end of at least one of the plurality of bladders, and the second fluid cou-

plings being configured to selectively and releasably couple the second manifold to the second end of at least one of the plurality of bladders.

2. The patient support apparatus of claim 1, wherein each of the first and second fluid couplings comprises a tubular member extending inwardly from the first and second manifolds, respectively.

3. The patient support apparatus of claim 2, further comprising a plurality of retaining members coupled to the tubular member and configured to retain the tubular member within the bladder.

4. The patient support apparatus of claim 2, wherein the first and second manifolds each includes a plurality of longitudinally spaced fluid ports, the first end of each bladder includes a fluid port, the second end of each bladder includes a fluid port, a first end of each coupling is fixed to one of the fluid ports of the first and second manifolds, and a second end of each coupling is removably coupled to one of the fluid ports of the bladders.

5. The patient support apparatus of claim 1, further comprising a bottom wall coupled to the first and second manifolds and extending below the plurality of bladders.

6. The patient support apparatus of claim 1, further comprising a top coverlet including a top surface and a side wall extending downwardly from the top surface, the side wall being configured to extend over outer side edges of the first and second manifolds and under a bottom surface of the first and second manifolds.

7. The patient support apparatus of claim 6, wherein the top coverlet includes an elastic cord coupled to the side wall to hold the side wall of the top coverlet under the first and second manifolds.

8. The patient support apparatus of claim 1, further comprising at least one connecting sheet coupled to each of the bladders and a coupler configured to restrain movement of the connecting sheet.

9. The patient support apparatus of claim 8, wherein the coupler comprises one of a plurality of buttons and a plurality of snaps coupled to the connecting sheet.

10. The patient support apparatus of claim 1, further comprising a fluid supply in fluid communication with the first and second manifolds, the fluid supply configured to provide a fluid having a first pressure to the first manifold and a fluid having a second pressure to the second manifold.

11. The patient support apparatus of claim 1, further comprising at least one check valve coupled between the first manifold and at least one of the bladders to permit fluid flow from the manifold into the bladder.

12. A bladder for use in a patient support apparatus, the bladder comprising:

an outer wall defining a longitudinal center axis and a fluid chamber;

a first connecting flange coupled to the outer wall and extending laterally in a first direction;

a second connecting flange coupled to the outer wall and extending laterally in a second direction opposite the first direction;

a hinge coupled to the outer wall and configured to permit the bladder to pivot about the longitudinal extending axis;

a first attachment member coupled to the first connecting flange;

a second attachment member coupled to the second connecting flange, the first attachment member configured to cooperate with the second attachment member of an adjacent bladder and thereby secure the first connecting flange to the second connecting flange of the adjacent bladder; and

a fluid port formed within the outer wall and in fluid communication with the fluid chamber.

13. The bladder of claim 12, further comprising receiving notches formed in opposing ends of the outer wall, and first and second manifolds received by the receiving notches.

14. The bladder of claim 12, wherein the attachment device comprises one of a plurality of buttons and a plurality of snaps.

15. The bladder of claim 12, further comprising at least one check valve in fluid communication with the fluid chamber and configured to prevent fluid flow in a direction from the fluid chamber through the fluid port.

16. A patient support system comprising:

a fluid supply;

a first manifold in fluid communication with the fluid supply and configured to receive from the fluid supply a fluid having a first pressure;

a second manifold in fluid communication with the fluid supply and configured to receive from the fluid supply a fluid having a second pressure;

a plurality of laterally extending first bladders positioned intermediate the first and second manifolds, each first bladder in fluid communication with the first manifold; and

a plurality of laterally extending second bladders positioned intermediate the first and second manifolds, each second bladder in fluid communication with the second manifold.

17. The patient support system of claim 16, wherein each of the first and second manifolds include a plurality of fluid couplings, and each of the plurality of bladders include at least one fluid port which is configured to selectively couple to one of the fluid couplings.

18. The patient support system of claim 16, further comprising a bottom wall coupled to the first and second manifolds and extending below the plurality of bladders.

19. The patient support system of claim 16, further comprising at least one connecting sheet coupled to each of the bladders and an attachment device configured to restrain movement of the connecting sheet.

20. The patient support system of claim 19, wherein the attachment device comprises one of a plurality of buttons and a plurality of snaps.

21. A disposable air mattress configured for single patient use, the air mattress comprising:

a first longitudinal air distribution channel;

a second longitudinal air distribution channel positioned in laterally spaced relation to the first manifold;

a plurality of laterally extending air tunnels, the air tunnels positioned adjacent to and parallel with each other;

each of the air tunnels including opposing first and second ends, the first end of at least some of the air tunnels

configured to be in communication with the first longitudinal air distribution channel and the second end of at least some of the air tunnels configured to be in communication with the second longitudinal air distribution channel; and

the first longitudinal air distribution channel, the second longitudinal air distribution channel, and the air tunnels being formed of polymeric sheet material configured to be incinerated without releasing toxic gases.

22. The air mattress of claim 21, wherein each of the air tunnels is integrally formed with an air pocket at each end, each air pocket extending over and covering the adjacent distribution channel, thereby increasing the width of the mattress.

23. The air mattress of claim 21, further comprising an air source coupled to the first longitudinal air distribution channel and the second longitudinal air distribution channel.

24. The air mattress of claim 21, wherein the polymeric sheet material comprises a polyolefin film.

25. The air mattress of claim 21, further comprising:

a plurality of longitudinally spaced first fluid couplings configured to provide fluid communication between the first longitudinal air distribution channel and at least one of the plurality of air tunnels;

a plurality of longitudinally spaced second fluid couplings configured to provide fluid communication between the second longitudinal air distribution channel and at least one of the plurality of air tunnels; and

wherein the plurality of air tunnels are configured to be removably received intermediate the first and second longitudinally spaced longitudinal air distribution channel, the first fluid couplings are configured to selectively and releasably couple the first longitudinal air distribution channel to the first end of at least one of the plurality of air tunnels, and second fluid couplings are configured to selectively and releasably couple the second longitudinal air distribution channel to the second end of at least one of the plurality of air tunnels.

26. The air mattress of claim 21, further comprising at least one connecting sheet coupled to each of the air tunnels and a coupler configured to restrain movement of the connecting sheet.

27. The air mattress of claim 26, wherein the coupler comprises one of a plurality of buttons and a plurality of snaps coupled to the connecting sheet.

28. A patient support system comprising:

a first sheet;

a second sheet;

a pair of longitudinally extending edge seals connecting the first sheet and the second sheet;

a plurality of laterally extending seals connecting the first sheet and the second sheet, and forming a plurality of laterally extending bladders; and

at least one longitudinally extending channel form passing through a plurality of the laterally extending seals to provide fluid communication between adjacent bladders.

29. The patient support system of claim 28, wherein the first sheet and the second sheet are formed from polyolefin.

30. The patient support system of claim 28, wherein the channel form comprises a hollow core rope.

31. A patient support comprising:

a head end;

a foot end opposite the head end;

an upper member including a plurality of vacuum formed, upwardly projecting cavities;

a lower member;

a plurality of longitudinally extending seals and a plurality of laterally extending seals coupling the upper member to the lower member; and

wherein a plurality of fluid zones are formed intermediate the head end and the foot end of the patient support.

32. The patient support of claim 31, wherein the lower member includes a plurality of vacuum formed, downwardly projecting cavities.

33. The patient support of claim 32, further comprising an intermediate layer coupled between the upper member and the lower member to form a plurality of upper fluid zones and a plurality of lower fluid zones.

34. A method of distributing a patient support comprising the steps of:

storing at a distribution facility a patient support including a plurality of bladders configured to receive fluid;

storing at a care facility a fluid supply;

receiving at the distribution facility a request for the patient support;

sending the patient support to the care facility;

coupling the patient support to the fluid supply at the care facility;

supplying fluid to the patient support from the fluid supply;

inflating the plurality of bladders of the patient support;

supporting a patient on the patient support;

deflating the plurality of bladders of the patient support;

uncoupling the patient support from the fluid supply; and

sending the patient support to a disposal facility.

35. The method of claim 34, wherein, the bladders include a plurality of microvents to release fluid to atmosphere.

36. The method of claim 35, further comprising the step of releasing air through the plurality of microvents.

37. The method of claim 34, further comprising the step of incinerating the patient support at the disposal facility.

38. The method of claim 34, further comprising the step of independently controlling the inflation of selected ones of the bladders.

39. A method of positioning and replacing a mattress on a frame of a bed, the method comprising the steps of:

providing a bed including a frame;

supporting a first mattress on the frame, the mattress including a plurality of fluid zones;

coupling a fluid supply to the first mattress;

inflating the fluid zones of the first mattress;

supporting a first patient on the first mattress;

independently controlling selected ones of the fluid zones;

removing the first patient from the first mattress;

deflating the fluid zones of the first mattress;

uncoupling the fluid supply from the first mattress;

replacing the first mattress with a second mattress, the second mattress including a plurality of fluid zones;

coupling the fluid supply to the second mattress;

inflating the fluid zones of the second mattress;

supporting a second patient on the second mattress; and

disposing of the first mattress.

40. The method of claim 39, wherein, the bladders include a plurality of microvents to release fluid to atmosphere.

41. The method of claim 40, further comprising the step of releasing air through the plurality of microvents.

42. The method of claim 39, wherein the step of disposing of the first mattress comprises the step of incinerating the first mattress at a disposal facility.

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