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Hardy

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[54] HYPOTHERMIA BABY BUNTING

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Related U.S. Application Data

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[52] **U.S. Cl.** **128/400**

[51] **Int. Cl.** **A61f 7/00**

[58] **Field of Search** ..... 128/400, 402, 1 B, 134, 379, 128/399; 5/343

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Attorney—Rogers, Ezell, Eilers & Robbins

[57] **ABSTRACT**

An infant's hypothermia bunting having front and rear panels of two-way stretch fabric. Longitudinally extending tubes connected to the front and rear panels for conveying temperature-controlled fluid. Snap fasteners for adjusting the lateral size of the bunting and snap fasteners for adjusting the longitudinal size of the bunting to conform to different infant body sizes. Zippers at the center and sides of the bunting to provide body access for hospital purposes. A plastic liner releasably fastened to the rear panel for distributing the loads of tube projections. A pocket at the bottom of the bunting for containing manifolds collecting inlet ends of the tubes and outlet ends of the tubes for common connections to the inlet and outlet fittings of a hypothermia machine.

9 Claims, 10 Drawing Figures

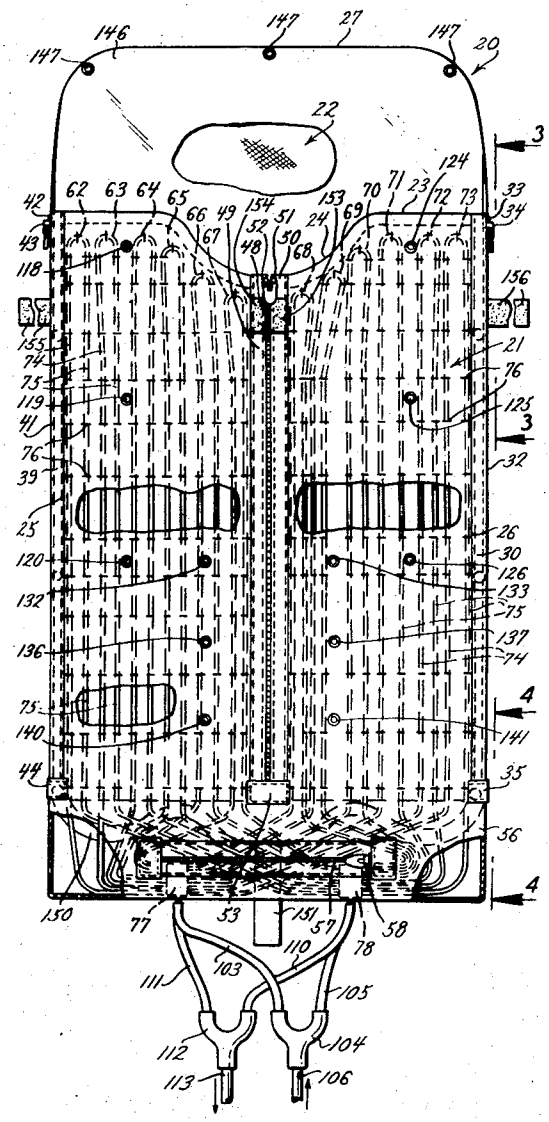


FIG. 1.

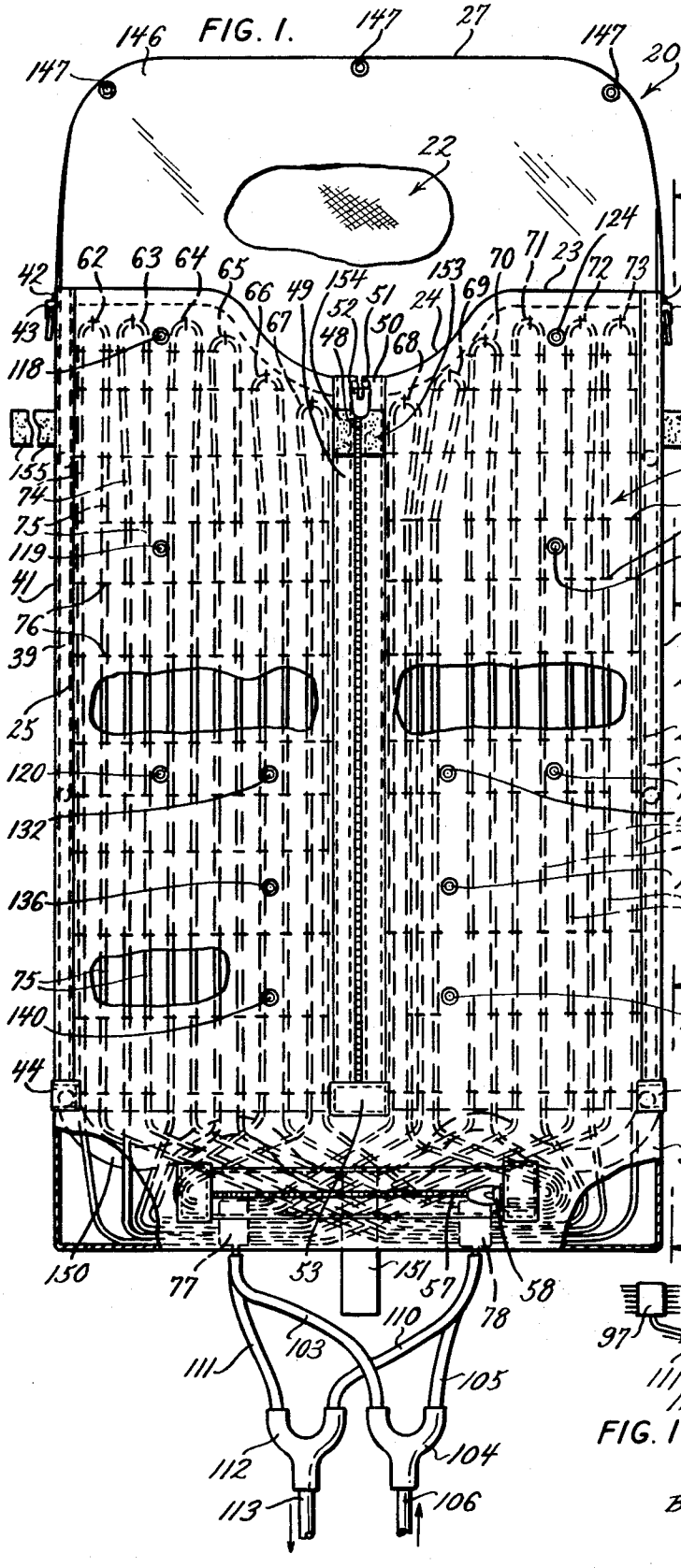


FIG. 3.

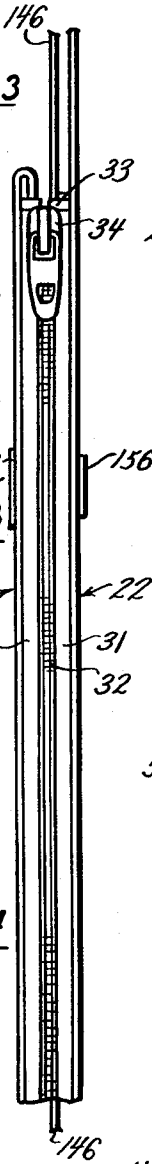


FIG. 4.

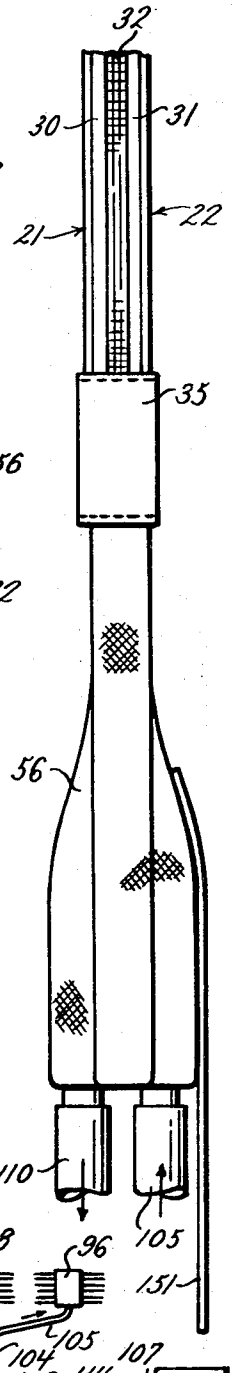
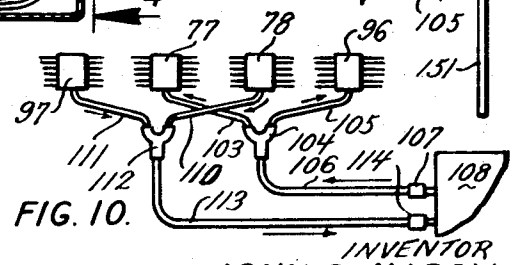


FIG. 10.



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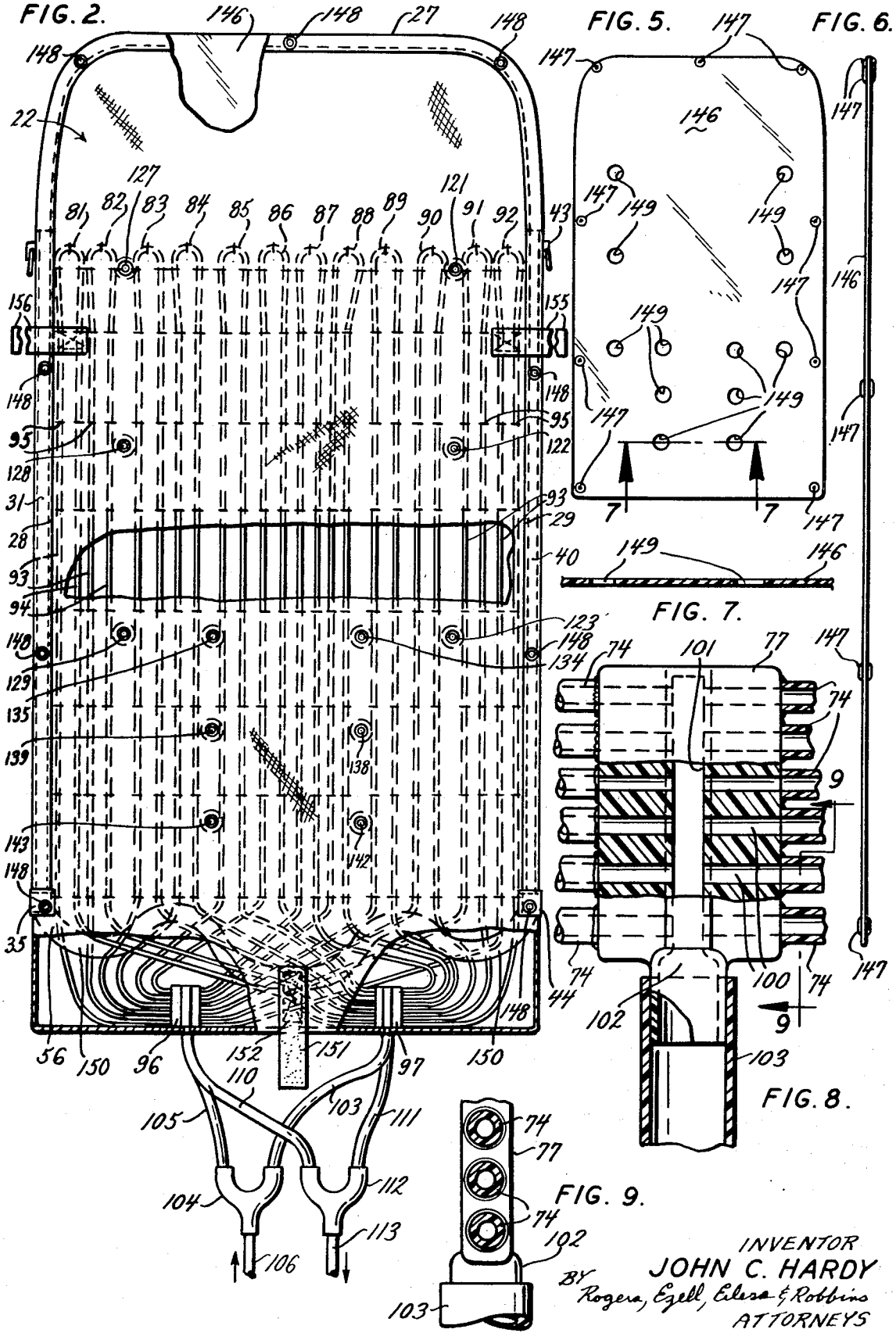

HYPOTHERMIA BABY BUNTING

This application is a continuation-in-part of application Ser. No. 114,607 filed on Feb. 11, 1971.

BRIEF DESCRIPTION OF THE INVENTION:

This infant's hypothermia bunting controls an infant's body temperature for hospital purposes, such as surgical operations. Loss of body heat during preparation for surgery produces adverse physiological effects which can be critical, particularly for premature infants. It is important that the body temperature of the infant be controlled efficiently and uniformly over the entire body of the infant.

Most prior art systems circulate water through plastic tube blankets or pads which are stiff and do not conform to the body, resulting in inefficient heat transfer and local hot and cold spots. These prior art systems that incorporate plastic blankets or pads are heavy and therefore preclude covering the front of the finfant's body leaving large exposed body surface areas and consequent loss of body heat. The prior art systems include fluid transport tubes sandwiched between two impermeable plastic plys, limiting sterilization and laundering. They are very uncomfortable, particularly to those areas of the infant's body that rest on body supporting surfaces. The impermeable construction limits breathing and evaporation of body moisture, adding to discomfort.

This infant's hypothermia garment comprises front and rear panels of stretch fabric. The panels are rectangular in shape and are joined at their sides and bottom edges. The upper edges are separable to provide an opening for receiving an infant's body into the envelope between the front and rear panels.

The bunting encloses the body of the infant from the neck down. Several fluid conveying tubes are attached to the inner surfaces of the panels by stitching or by an attachment method set forth in a co-pending application of the present inventor filed in close proximity to the filing date of the present application and identified as Rogers, Ezell, Eilers and Robbins Docket 16,484 entitled Method of Joining Tubes to Fabrics. The tubes extend longitudinally along the panels to permit and not interfere with lateral or circumferential expansion of the bunting to conform to the contour of the infant's body. Each tube consists of a supply pass and a return pass. The supply passes lead from inlet manifolds, and the return passes return to outlet manifolds. The manifolds are located in a pocket at the bottom of the bunting and are connected by tubes to a hyperthermia machine that circulates temperature-controlled fluid through the tubes. The supply passes and return passes are alternated to effect substantially uniform temperature distribution over the entire inner surfaces of the bunting.

Two longitudinal lines of snap fasteners are spaced inwardly of the side edges of the front and rear panels for adjustment of the width of the inner envelope of the bunting. Three lateral lines of snap fasteners are spaced upwardly from the lower edges of the front and rear panels to adjust the depth of the inner envelope. These snap fasteners thus vary the effective volume of the bunting so that it can be made to conform to different sizes and shapes of infant's bodies, with the stretch fabric material of the bunting providing further conformity to the contour of the infant's body.

A plastic liner has snap fasteners around its edges for releasable fastening to the inner surface of the rear panel to distribute the load and pressure created by the fluid conveying tubes. The panel is removable for sterilization of the panel and for sterilization and laundering of the bunting.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a front elevation view of the infant's hypothermia bunting with parts broken away;

FIG. **2** is a rear elevation view of the infant's hypothermia bunting with parts broken away;

FIG. **3** is an enlarged fragmentary right side elevation view taken along the line **3—3** of FIG. **1**;

FIG. **4** is an enlarged fragmentary right side elevation view taken along the line **4—4** of FIG. **1**;

FIG. **5** is a front elevation view of the plastic liner on a reduced scale;

FIG. **6** is a right side elevation view of the plastic liner of FIG **5** on the scale of FIGS. **1** and **2**;

FIG. **7** is an enlarged fragmentary view in section taken along the line **7—7** of FIG. **5**;

FIG. **8** is a front elevation view of an enlarged scale of a manifold with parts shown in section;

FIG **9** is a fragmentary view in section taken along the line **9—9** of FIG. **8**;

FIG. **10** is a schematic view of the connections of the manifold to a hyperthermia machine.

DETAILED DESCRIPTION oF THE INVENTION

This bunting **20** has a front panel **21** that is about 18 inches wide and 24 inches long and a rear panel **22** that is the same width as the front panel and is about 30 inches long. The foregoing lengths are exclusive of a bag at the lower end of the bunting to be described hereinafter. The front panel **21** has an upper edge **23** with a downwardly curved center **24** positioned where the neck of an infant within the bunting would be located, and has side edges **25** and **26**. The rear panel **22** has an upper edge **27** that is about 6 inches above the upper edge **23** of the front panel and has side edges **28** and **29**. The side edges **26** and **28** of the front and rear panels respectively are sewed to the front and rear cloth bindings **30** and **31** of a zipper **32**. The zipper **32** has a separator start element **33** at its upper end and a slider **34** that can fully open the zipper **32** with the upper ends separated down to a cloth stop element **35** at the lower end of the zipper that is sewn to the front and rear panels **21** and **22**.

The other side edges **25** and **29** of the front and rear panels respectively are similarly sewn to the front and the rear cloth bindings **39** and **40** of a zipper **41**. The zipper **41** has a separator start element **42** at its upper end and a slider **43** that can open the zipper **41** with the separator element **42** separated and the zipper **41** separated all the way down to a cloth stop element **44** that is sewn to the front and rear panels **21** and **22** at the lower end of the zipper **41**.

A zipper **48** extends longitudinally along the center of the front panel **21**. The side cloth bindings **49** and **50** of the zipper **48** are sewn to the front panel **21**. The zipper **48** has a separator start element **51** at its upper end. A slider **52** can open the zipper **48** with the separator element **51** separated and the zipper **48** separated all the way down to a cloth stop element **53** sewn to the front panel **21** at the lower end of the zipper **48**.

The front and rear panels **21** and **22** continue below the cloth zipper stop elements **35**, **44** and **53** and are sewn together at their side and bottom edges to form a bag **56**. A lateral zipper **57** having a slider **58** provides access to the interior of the bag **56**.

There are 12 tubes **62**, **63**, **64**, **65**, **66**, **67**, **68**, **69**, **70**, **71**, **72** and **73** extending longitudinally of and fastened to the inner surface of the front panel **21**, six of the tubes **62** through **67** being fastened to the front panel between the zippers **41** and **48** and the other six tubes **68** through **73** being fastened to the front panel between the zippers **48** and **32**. Each tube **62** through **73** has a supply pass **74** and a return pass **75**. The tubes **62** through **73** may be attached to the panel **21** by stitches **76** spaced at about 3-inch intervals or they may be attached by the method set forth in a co-pending application of the present inventor filed at about the same time as the present application and identified by Rogers, Ezell, Eilers and Robbins Docket 16484, entitled Method of Joining Tubes to Fabrics. The tubes **62** through **73** are arranged such that supply passes **74** alternate with return passes **75** and are substantially evenly spaced to distribute temperature-controlled fluid uniformly over the entire surface area of the bunting.

The lower ends of the supply passes **74** of the tubes **62** through **73** extend downwardly into the bag **56** and are connected to a supply or inlet manifold **77**. The lower ends of the return passes **75** of the tubes **62** through **73** extend downwardly into the bag **56** and are connected to a return or outlet manifold **78**.

Twelve tubes **81**, **82**, **83**, **84**, **85**, **86**, **87**, **88**, **89**, **90**, **91**, and **92** are fastened to the inner surface of the rear panel **22**. Each tube **81** through **92** has a supply pass **93** and a return pass **94**. The tubes **81** through **92** are substantially evenly spaced across the width of the panel **22** with supply and return passes **93** and **94** alternating with one another and substantially evenly spaced. The tubes are connected to the panel **22** by spaced stitches **95** or by the method of the aforesaid co-pending application. All the ends of the supply passes **93** extend downwardly into the bag **56** and are connected to a supply or inlet manifold **96**. The lower ends of the return passes **94** extend downwardly into the bag **56** and are connected to a return or outlet manifold **97**. The tubes **62** – **73** and **81** – **92** are small and flexible being about one-eighth inch to five-thirty seconds inch in outside diameter.

FIG. **8** illustrates a typical manifold **77**, the other manifolds **78**, **96**, and **97** being identical thereto. The tubes **74** are connected to the manifold **77**, each communicating with a passage **100**. Each passage **100** communicates with a central passage **101** provided by a central tube **102** to which a tube **103** is connected. These manifolds may be made by the process set forth in the present applicant's co-pending application filed at about the same time as the present application and being identified as Rogers, Ezell, Eilers & Robbins Docket 16485 entitled Method Of Joining Tubes To A Manifold.

In the case of the supply manifold **77**, the tube **103** leads from a Y fitting **104**. The other supply manifold **96** similarly has a tube **105** leading from the Y fitting **104**. A tube **106** leads to the Y fitting **104** from an outlet connector **107** of a hyperthermia machine **108** of a conventional kind that circulates temperature-controlled fluid, such as water. The tube outlet manifolds **78** and **97** have tubes **110** and **111** respectively leading to a Y junction **112**. A tube **113** from the Y juncture **112** leads to an inlet connector **114** to the hyperthermia machine **108**.

This infant's hypothermia bunting has sizing adjustments that permit it to accommodate infants up to the age of about six months. Three snap fasteners **118**, **119** and **120** are arranged in a longitudinal row and are joined to the front panel **21**. The snap fasteners **118**, **119**, and **120** are spaced inwardly about three inches from the left side edge of the front panel **21**. Three snap fasteners **121**, **122**, and **123** that are complementary to the snap fasteners **118**, **119**, and **120** are joined to the rear panel **22**. The snap fasteners **121**, **122**, and **123** are in a longitudinal row and are located directly opposite the snap fasteners **118**, **119**, and **120**.

A similar row of three snap fasteners **124**, **125**, and **126** is spaced about three inches longitudinally inwardly from the right front edge of the bunting. The snap fasteners **124**, **125**, and **126** are joined to the front panel and are located directly opposite three snap fasteners **127**, **128** and **129** that are joined to the rear panel **22**.

Two snap fasteners **132** and **133** are laterally aligned with the snap fasteners **120** and **126** and are joined to the front panel **21**. The line of snap fasteners **120**, **132** **133** and **126** is spaced above the lower edge of the bunting **20** by about eleven inches, the lower edge being defined as an imaginary line through the fabric zipper stops **44**, **53**, and **35** above the bag **56**. Two snap fasteners **134** and **135** are joined to the rear panel **22** in positions directly opposite the snap fasteners **132** and **133** and in line with the snap fasteners **129** and **123**. The snap fasteners **134** and **135** are complementary to the snap fasteners **132** and **133**.

Two laterally aligned snap fasteners **136** and **137** are joined to the front panel **21** approximately 4 inches below the snap fasteners **132** and **133**. Two snap fasteners **138** and **139** that are joined to the rear panel **22** are opposite to and complementary to the snap fasteners **136** and **137**. Another two snap fasteners **140** and **141** are laterally aligned and spaced approximately four inches below the snap fasteners **136** and **137** and are joined to the front panel **21**. Two complementary snap fasteners **142** and **143** are joined to the rear panel **22** and are positioned opposite the snap fasteners **140** and **141**.

The lines of longitudinal snap fasteners **118** and **119** and **120** and **121**, **122**, and **123** and the lines of longitudinal snap fasteners **124**, **125**, and **126** and **127**, **128** and **129** can be snapped together to reduce the circumferential size of the bunting **20**, or just one longitudinal line of snap fasteners may be snapped together, thus providing circumferential adjustment to an infant's body size. The lateral line of snap fasteners **120**, **132**, **133**, and **126** may be snapped to the snap fasteners **123**, **134**, **135**, and **129** for depth adjustment. Alternatively, the snap fasteners **136**, **137**, **138**, and **139** may be snapped together or the snap fasteners **140**, **141**, **142**, and **143** may be snapped together to provide variations in depth adjustment for infant body lengths. Following such coarse adjustment of the inner envelope, the stretch fabric of the panels **21** and **22** causes the bunting to conform to the body of the infant.

A plastic liner **146** is shaped to overlie the inner surface of the rear panel **22**, forward of and overlying the tubes **81 – 92**. The plastic liner **146** has spaced snap fasteners **147** adjacent to its upper and side edges. The rear panel **22** has forwardly projecting spaced snap fasteners **148** adjacent its upper and side edges complementary to the snap fasteners **147**. The liner **146** also has holes **149** through it located to permit the various size adjustment snap fasteners **118** through **129** and **132** through **143** to be snapped together. All adjustment snap fasteners are reinforced by the plastic discs to prevent the snaps from pulling from its mounting substrate.

In use, an infant's body from the neck down is located within the envelope between the front and rear panels **21** and **22**. Depending upon the size of the infant's body, different ones of the size adjustment snap fasteners are snapped together or, for a relatively large infant, all the size adjustment snap fasteners are left unsnapped. The front zipper **48** and two side zippers **32** and **41** can be unzipped for easier entry of the infant into the bunting. Also, these zippers provide flexibility of access to the infant's body for hospital and surgical purposes.

With the infant in the bunting, the stretch fabric holds the bunting in conformity with the infant's body. Temperature controlled fluid is circulated through the one-eighth to five thirty-seconds inch outside diameter tubes **62** through **73** and **81** through **92** so that the infant's body heat can be maintained at a desired level even in relatively cool operating atmospheres. The liner **146** eliminates pressure points from the tubes **81** through **92**. For laundering and sterilization of the bunting, the lining **146** can be removed. This permits sterilization of the liner **146** also.

Thus, this infant's hypothermia bunting provides efficient heat transfer to the infant's body. The two directional stretch fabric of the front and rear panels **21** and **22** conforms the tubes to the infant'2 body. The alternating of supply and return passes of the tubes provides substantially uniform temperature distribution over the entire surfaces of the front and rear panels **21** and **22**. At the same time, comfort is provided by the porosity of the fabric of the front and rear panels **21** and **22**.

The bunting is light in weight and the fabric is soft and flexible so that is not uncomfortable when resting on the infant's body. The rear liner **146** distributes the loads that otherwise would be caused by the protruding profiles of the tubes **81** through **92**. This liner is made of high thermal conductivity plastic for increased heat transfer.

With the adjustment snap fasteners, the bunting can be sized to fit all infants up to the age of about 6 months. The locations of the size adjustment snap fasteners tapers the inside envelope to conform to the natural taper of the torso and legs of the infant.

Zipper bindings **30, 31, 39** and **40** and Zipper stop elements **35** and **44** made from electrostatically conductive cloth and communicate electrostatically with another conductive cloth strip **150** located inside the pouch **56**. The conductive cloth strip **150** is attached directly to zipper stop elements **35** and **44**, and also to a conductive velcro pile strip **151** (pile facing down) located along the pouch centerline to electrostatically ground the bunting to the operating table. Strip **151** is secured to the outer rear surface of pouch **56** along the centerline of the bunting with stitching **152**.

Velcro pile tabs **155** and **156** (approximately **2** inches by **10** inches) are attached to the outside rear panel **22** surface by stitches (approximately **2** inches of stitching and 8 inches free length). Velcro hook tabs **153** and **154** are located along the zipper bindings **50** and **49** respectively in the same horizontal line as tabs **155** and **156**. The tabs are so arranged that when the right-hand side of front panel **21**, as viewed in FIG. **1**, is opened and folded or rolled back to permit surgery on the left side of an infant, the tabs **156** and **154** are pressed together to hold that right-hand side firmly against the infant's torso. Conversely, when the left-hand side of front panel **21** is opened and folded or rolled back to permit surgery on the right side of an infant, the tabs **155** and **153** are pressed together to hold that left-hand side firmly against the infant's torso. When not required, the tabs **155** and **156** are folded under the rear panel **22** of the bunting.

Various changes and mofifications may be made within this invention as will be readily apparent to those skilled in the art. Such changes and modifications are within the scope and teaching of this invention as defined by the claims appended hereto.

What Is Claimed Is:

1. An infant bunting for enclosing the body of an infant and for controlling the body temperature of said infant comprising a flexible enclosure sized to receive said body of said infant, said enclosure having a front portion disposable in register with the front of said body of said infant and having a rear portion disposable in register with the rear of said body of said infant, tubing which is connected to the surface of said front portion of said enclosure in a pattern distributing said tubing over substantially the entire surface of said front portion of said enclosure that contacts said front of said infant's body and which confines and guides heat-exchanging fluid for movement in heat-exchanging relation with respect to said front of said infant's body, further tubing connected to the surface of said rear portion of said enclosure in a pattern distributing said further tubing over substantially the entire surface of said rear portion of said enclosure that contacts said rear of said infant's body and which confines and guides heat-exchanging fluid for movement in heat-exchanging relation with respect to said rear of said infant's body, means to control the temperature of said heat-exchanging fluid moving through the first said tubing and also through said further tubing, releasable fastener means on said front portion of said enclosure which are spaced inwardly from edges of said front portion of said enclosure, and complementary releasable fastener means on said rear portion of said enclosure which are spaced inwardly from edges of said rear portion of said enclosure, the first said releasable fastener means being in register with and being selectively securable to and releasable from said complementary releasable fastener means, the first said releasable fastener means and said complementary releasable fastener means being releasable from each other to permit a large amount of the area of said front portion of said enclosure to be moved far enough away from a corresponding amount of the area of said rear portion of said enclosure to enable said bunting to accom-

modate but confine the body of a large infant, the first said releasable fastener means and said complementary releasable fastener means being securable together to join said front portion of said enclosure to said rear portion of said enclosure at points which are spaced inwardly of said edges of said front portion and of said rear portion of said enclosure, and thereby reduce the amount of area of said front portion of said enclosure which can be moved far enough away from a corresponding amount of the area of said rear portion of said enclosure to accommodate but confine the body of a smaller infant, whereby selective securing or releasing of the first said releasable fastener means and of said complementary releasable fastener means readily and directly varies the effective size of said bunting for conformance of said bunting to the bodies of infants of varying sizes.

2. The infant bunting of claim 1 wherein said front portion of said enclosure is a front panel, wherein said rear portion of said enclosure is a rear panel, wherein the first said releasable fastener means are individual and discrete fasteners longitudinally aligned and spaced inwardly from the side edges of said front panel and are further individual and discrete fasteners laterally aligned and spaced upwardly from the lower edge of said front panel, wherein said complementary releasable fastener means are individual and discrete fasteners longitudinally aligned and spaced inwardly from the side edges of said rear panel and are further individual and discrete fasteners laterally aligned and spaced upwardly from the lower edge of said rear panel, whereby the first said releasable fastener means and said complementary releasable fastener means coact to permit said effective size of said bunting to be adjusted longitudinally as well as laterally.

3. The infant bunting of claim 1 wherein said front portion of said enclosure is made of stretch fabric that is stretchable in at least the lateral direction, wherein said rear portion of said enclosure is made of stretch fabric that is stretchable in at least the lateral direction, wherein the first said releasable fastener means and said complementary releasable fastener means coact to provide a coarse size adjustment in the lateral direction, and wherein the stretchable nature of said stretch fabric of said front portion and of said rear portion of said enclosure enable said front portion and said rear portion of said enclosure to provide a fine size adjustment in the lateral direction.

4. The infant bunting of claim 1 wherein the first said tubing is fluid conveying tubing, wherein said further tubing is fluid conveying tubing, wherein the first said tubing comprises a plurality of individual tubes each having a supply span and a return span, wherein the tube spans of the first said tubing are located with supply spans alternating with return spans for uniform temperature distribution over the surface of said front portion of said enclosure, wherein said further tubing comprises a further plurality of individual tubes each having a supply span and a return span, wherein the tube spans of said further tubing are located with supply spans alternating with return spans for uniform temperature distribution over the surface of said rear portion of said enclosure, wherein supply manifold means supply fluid to said supply spans of the first said and said further tubing, and wherein return manifold means receive fluid from said return spans of the first said and said further tubing.

5. The infant bunting of claim 1 wherein said front portion of said enclosure is a front panel, wherein said rear portion of said enclosure is a rear panel, wherein the first said releasable fastener means are individual and discrete fasteners, wherein said complementary releasable fastener means are further individual and discrete fasteners, wherein a pressure-distribution liner is releasably fastened to said rear panel, wherein said pressure-distribution liner overlies said further tubing and can distribute evenly to said body of said infant the forces which said further tubing otherwise would distribute unevenly to said body of said infant, and wherein said pressure-distribution liner has openings therein in register with the first said and said further releasable fastener means to enable the first said and said further releasable fastener means to engage each other through said openings.

6. An infant bunting for controlling body temperature comprising front and rear panels joined at their side and bottom edges to form a pocket open at its upper end to receive the body of an infant, a plurality of small-diameter tubes fastened in a substantially uniformly spaced array to a surface of said front panel, a second plurality of small-diameter tubes fastened in a substantially uniformly spaced array to a surface of said rear panel, each tube of the first said plurality of small-diameter tubes having a supply span for receiving temperature-controlled fluid and a return span for returning said temperature-controlled fluid after said temperature-controlled fluid has been in heat-exchanging relation with said body of said infant, each tube of said second plurality of small-diameter tubes having a supply span for receiving temperature-controlled fluid and a return span for returning said temperature-controlled fluid after said temperature-controlled fluid has been in heat-exchanging relation with said body of said infant, distributor means to receive said temperature-controlled fluid from a source of temperature-controlled fluid and to supply said temperature-controlled fluid to said supply spans of said tubes of the first said plurality of small-diameter tubes and to supply said temperature-controlled fluid to said supply spans of said tubes of said second plurality of small-diameter tubes and thereby enable the first said plurality and said second plurality of small-diameter tubes to circulate temperature-controlled fluid in heat-exchanging relation with said body of said infant, further distributor means connected to said return spans of said tubes of the first said plurality of small-diameter tubes and to said return spans of said tubes of said second plurality of small-diameter tubes to receive said temperature-controlled fluid from said tubes of the first said plurality and said second plurality of small-diameter tubes after said temperature-controlled fluid has been in heat-exchanging relation with said body of said infant and to return said temperature-controlled fluid to said source of temperature-controlled fluid, releasable fastener means on said front panel that are distributed longitudinally and laterally of said front panel, complementary releasable fastener means on said rear panel that are distributed longitudinally and laterally on said rear panel, the first said releasable fastener means and said complementary releasable fastener means being

releasable to permit large amounts of the contronting areas of said front panel and of said rear panel to be moved apart to accommodate the body of a large infant, some of the longitudinally-distributed releasable fastener means of the first said releasable fastener means and some of the longitudinally-distributed releasable fastener means of said complementary releasable fastener means being securable together to reduce the amounts of said confronting areas of said front and said rear panels which can be moved apart to accommodate the body of an infant and thereby enable said bunting to accommodate and closely confine the body of an infant of smaller girth, some of the laterally-distributed releasable fastener means of the first said releasable fastener means and some of the laterally-distributed releasable fastener means of said complementary releasable fastener means being securable together to reduce the amounts of said confronting areas of said front and said rear panels which can be moved apart to accommodate the body of an infant and thereby enable said bunting to accommodate and closely confine the body of an infant of shorter height, whereby the first said releasable fastener means and said complementary releasable fastener means enable said bunting to accommodate and closely confine the bodies of infants of differing girths and differing heights.

7. The infant bunting of claim 1 wherein zippers selectively connect and free the edges of openings in said enclosure, wherein said zippers have electrostatically conductive zipper bindings, wherein said enclosure has electrostatically conductive cloth strips, and wherein said electrostatically conductive zipper bindings and said electrostatically conductive cloth strips are in communication electrostatically with a central conductive tab to permit grounding of the bunting to the operating table by placing said central conductive tab in engagement with said operating table.

8. The infant bunting of claim 1 wherein said front portion of said enclosure is subdivided into two sides, wherein each of said two sides is selectively movable to an open position wherein it is spaced away from the corresponding side of the front of the body of an infant disposed within said enclosure to permit medical procedures to be carried out on said corresponding side of said front of said body of said infant, wherein each of said two sides is selectively movable to a closed position wherein it is in intimate contact with the corresponding side of said front of said body of said infant, and wherein adjustable releasable circumferential fastener tabs span the opened side of said bunting during medical procedures thereby maintaining the closed side of the bunting in intimate contact with the corresponding side of said front of said body of said infant.

9. An infant bunting for enclosing the body of an infant and for controlling the body temperature of said infant comprising an enclosure which is made of stretch fabric that is stretchable in at least the lateral direction, said enclosure having a front panel disposable in register with the front of the body of an infant and having a rear panel disposable in register with the rear of said body of said infant, said front panel and said rear panel being sized to enable said enclosure to accommodate the body of a large infant with only limited stretching of said stretch fabric in said lateral direction, fluid-conveying tubing secured to said front panel of said enclosure in a pattern distributing said fluid-conveying tubing over substantially the entire surface of said front panel of said enclosure that contacts said front of said infant's body to confine and guide heat-exchanging fluid for movement in heat-exchanging relation with respect to said front of said infant's body, further fluid-conveying tubing secured to said rear panel of said enclosure in a pattern distributing said further fluid-conveying tubing over substantially the entire surface of said rear panel of said enclosure that contacts said rear of said infant's body to confine and guide heat-exchanging fluid for movement in heat-exchanging relation with respect to said rear of said infant's body, the first said fluid-conveying tubing including a plurality of individual tubes that have supply spans and return spans, said plurality of individual tubes of the first said fluid-conveying tubing being disposed so the supply and return spans of the first said fluid-conveying tubing alternate to provide uniform temperature distribution over substantially the entire surface of said front panel of said enclosure that contacts said front of said infant's body, said further fluid-conveying tubing including a further plurality of individual tubes that have supply spans and return spans, said further plurality of individual tubes of said further fluid-conveying tubing being disposed so the supply and return spans of said further fluid-conveying tubing alternate to provide uniform temperature distribution over substantially the entire surface of said rear panel of said enclosure that contacts said rear of said infant's body, supply manifold means to supply heat-exchanging fluid to said supply spans of said plurality of individual tubes of the first said fluid-conveying tubing and to said supply spans of said further plurality of individual tubes of said further fluid-conveying tubing, return manifold means to receive heat-exchanging fluid from said return spans of said plurality of individual tubes of the first said fluid-conveying tubing and from said return spans of said further plurality of individual tubes of said further fluid-conveying tubing, a plurality of individual and discrete releasable fasteners secured to said front panel of said enclosure and spaced longitudinally and laterally of said front panel of said enclosure, said plurality of releasable fasteners being spaced inwardly from the side and bottom edges of said front panel of said enclosure, a plurality of complementary individual and discrete releasable fasteners secured to said rear panel of said enclosure and spaced longitudinally and laterally of said rear panel of said enclosure, said complementary plurality of releasable fasteners being spaced inwardly from the side and bottom edges of said rear panel of said enclosure, the releasable fasteners of the first said plurality of releasable fasteners being in register with and being selectively securable to and releasable from the releasable fasteners of said complementary plurality of releasable fasteners, the releasable fasteners of the first said plurality of releasable fasteners and the releasable fasteners of said complementary plurality of releasable fasteners being releasable from each other to permit a large amount of the area of said front panel of said enclosure to be moved far enough away from a corresponding amount of the area of said rear panel of said enclosure to enable said bunting to accommodate but confine the body of said large infant, some of the longitudinally-spaced releasa-

ble fasteners of the first said plurality of releasable fasteners and some of the longitudinally-spaced releasable fasteners of said complementary plurality of releasable fasteners being securable together to reduce the amounts of said confronting areas of said front and said rear panels which can be moved apart to accommodate the body of an infant and thereby enable said bunting to accommodate and closely confine the body of an infant of smaller height, some of the laterally-spaced releasable fasteners of the first said plurality of releasable fasteners and some of the laterally-spaced releasable fasteners of said plurality of complementary releasable fasteners being securable together to reduce the amounts of said confronting areas of said front and said rear panels which can be moved apart to accommodate the body of an infant and thereby enable said bunting to accommodate and closely confine the body of an infant of shorter girth, whereby the releasable fasteners of the first said plurality of releasable fasteners and said releasable fasteners of said plurality of complementary releasable fasteners enable said bunting to accommodate and closely confine the bodies of infants of differing heights and differing girths, said some of the laterally-spaced releasable fasteners of the first said plurality of releasable fasteners and said some of the laterally-spaced releasable fasteners of said plurality of complementary releasable fasteners coacting to provide a coarse size adjustment for said enclosure in the lateral direction, the stretchable nature of said stretch fabric of said front panel and of said rear panel of said enclosure enabling said front panel and said rear panel of said enclosure to provide a fine size adjustment for said enclosure in the lateral direction, and a pressure-distribution liner that is releasably fastened to said rear panel, said pressure-distribution liner overlying said tubes of said further fluid-conveying tubing to distribute evenly to said body of said infant the forces which said tubes of said further fluid-conveying tubing otherwise would distribute unevenly to said body of said infant, said pressure-distribution liner having openings therein in register with said releasable fasteners of the first said plurality of releasable fasteners and in register with said releasable fasteners of said complementary plurality of releasable fasteners to permit securement of said releasable fasteners of the first said plurality of releasable fasteners to said releasable fasteners of said complementary plurality of releasable fasteners through said openings.

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