Feb. 25, 1969 D. B. R. McDONALD 3,429,315

CHEMICAL REFRIGERANT BLANKET

Filed Nov. 4, 1966 Sheet 1 of 2

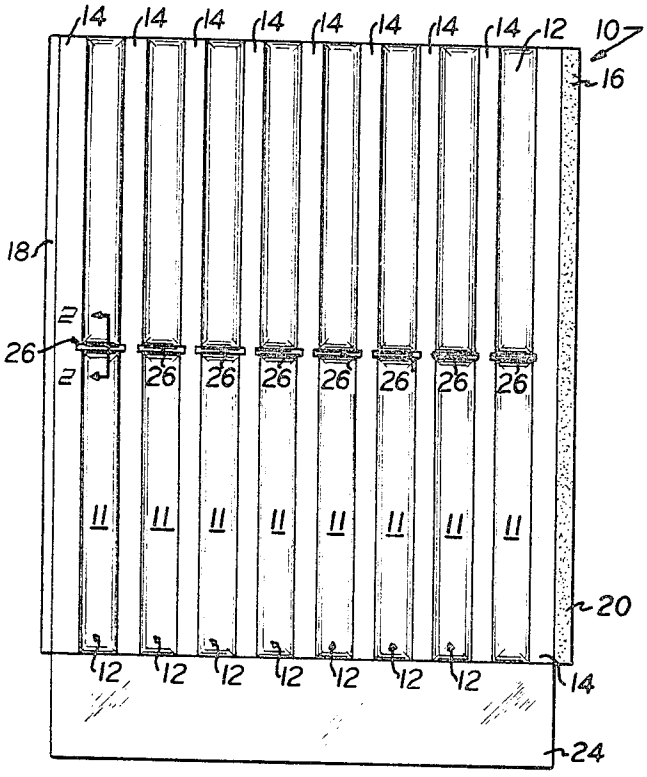



Fig. 1

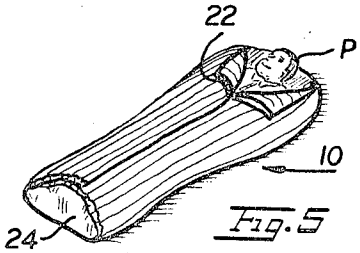



Fig. 5

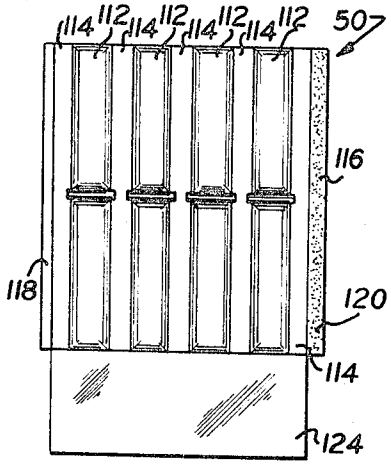



Fig. 6

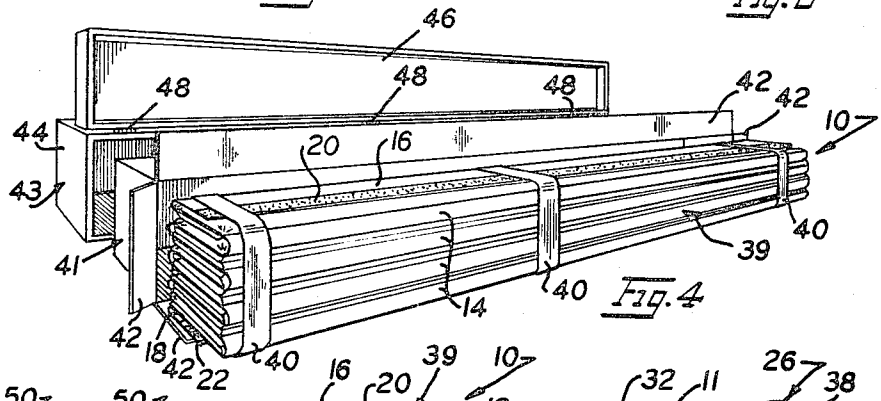



Fig. 4

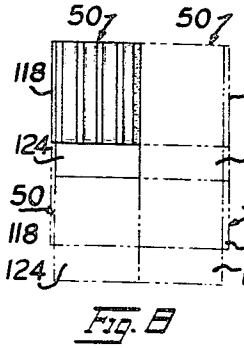



Fig. 8

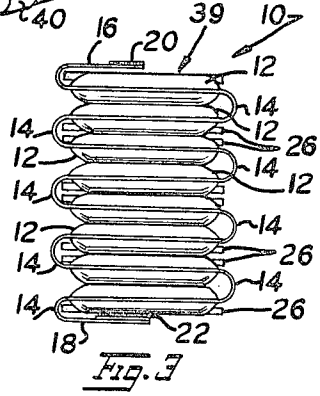



Fig. 3

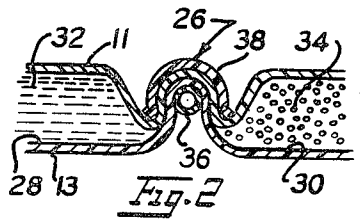



Fig. 2

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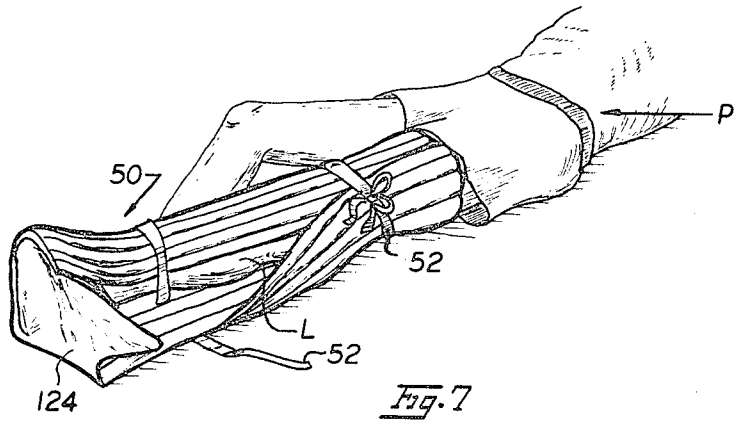



Fig. 7

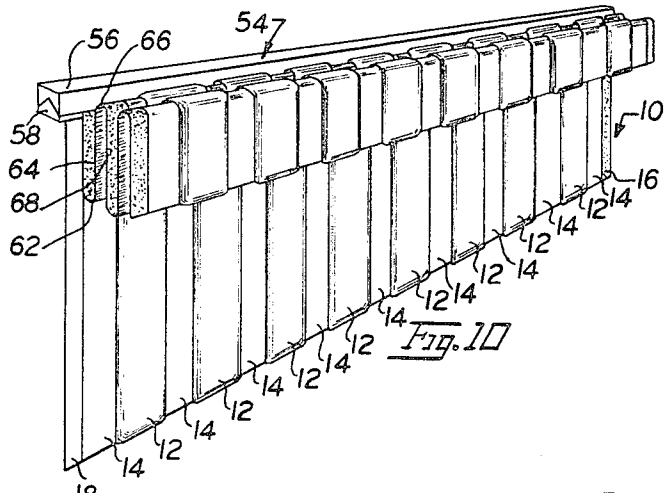



Fig. 10

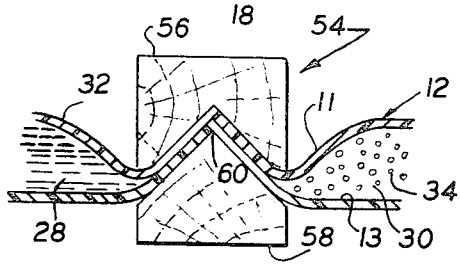



Fig. 9

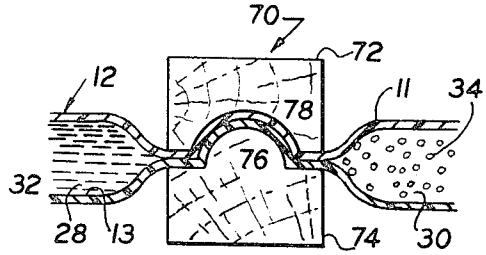



Fig. 11

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3,429,315

# CHEMICAL REFRIGERANT BLANKET

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Filed Nov. 4, 1966, Ser. No. 592,208
U.S. Cl. 128—402 13 Claims
Int. Cl. A61f 7/10; F25d 5/02

This invention relates generally to a medical aid and, more particularly, pertains to a blanket having chemical means therein for encompassing and cooling large areas of the body and/or the entire body.

In first-aid situations requiring immediate medical attention, such as those situations in which a person is seriously burned, or bones are broken or where there is likelihood that shock will develop, it is highly desirable to apply cold packs or the like to the affected areas to relieve pain and to reduce the possibility of shock to a minimum. However, in many applications it is extremely difficult to obtain ice or similar cold substances in sufficient quantities to apply such therapy to the injured areas, particularly where the injury covers a large portion of the body. Presently, packs containing chemicals which are adapted to produce an endothermic reaction thereby to cool surrounding areas are provided to cool local areas; however, these packs are usually unduly small in size and difficult to use in those cases in which an affected area such as a limb, must be completely enclosed to produce any beneficial results.

Accordingly, the desideratum of the present invention is to provide a blanket having a chemical refrigerant which is adapted to completely enclose a limb or the entire body thereby to apply cold therapy to the enclosed portion of the body.

Another object of the present invention is to provide a chemical refrigerant blanket which is provided with releasable fastening means for fastening the blanket about the limb of and/or the body of a person.

Another object and feature of the present invention resides in the novel details of construction which provide a chemical refrigerant blanket of the type described which includes an end flap which is adapted to envelope the outermost extremity of a limb to completely enclose the limb so that the limb will not be subjected to different temperatures.

In furtherance of the above objects, a device constructed according to the present invention comprises a blanket having a plurality of elongated chambers. Each one of the chambers is connected to the next adjacent chamber by an elongated strip of flexible material that is coextensive in length with the plurality of chambers. The blanket is adapted to be folded along each one of these strips so that adjacent chambers may be superposed on each other to provide a refrigerant blanket that occupies a minimum amount of space.

A releasable clamping means is provided for each chamber for clamping together the walls of the respective chambers to divide each one of the chambers into two compartments, one of which contains a granular material or endothermic salts and the other of which contains a fluid. A continuous bottom flap is connected to one end of the chamber and the interconnecting strips of material. In use, preselected ones of the releasable clamping means are removed so that the fluid and salt granules intermix to produce an endothermic reaction which substantially reduces the temperature surrounding the blanket. The blanket is then placed under the limb or the body of the person, as the case may be, and the end flap is folded over the end of the limb. The blanket is affixed about the limb by means such as ribbons which are tied about the blanket or by a suitable fastener as a Velcro fastener, so



that the particular limb or the body is completely enveloped in the blanket. Accordingly, the external temperature of the limb is reduced by the refrigerant blanket and is maintained at such reduced temperature due to the fact that the limb is completely enclosed within the blanket.

A feature of the present invention is to provide a chemical refrigerant blanket of the type described which is adapted to completely envelope a limb and/or a body thereby to apply cold therapy to the particular limb or the body.

Other features and objects of the present invention will become more apparent from a consideration of the following detailed description when taken in conjunction with the accompanying drawings, in which:

FIG. 1 is a top plan view of a chemical refrigerant blanket constructed according to the present invention which is adapted to surround the body of a person;

FIG. 2 is a sectional view taken along line 2—2 of FIG. 1;

FIG. 3 is an end view of the blanket shown in FIG. 1 in folded condition;

FIG. 4 is an exploded perspective view of a chemical refrigerant blanket package including the blanket shown in FIG. 1 in folded condition and its packing container;

FIG. 5 is a perspective view, to reduced scale, of the application of the blanket shown in FIG. 1 to the body of a person;

FIG. 6 is a top plan view of a smaller blanket similar in construction to the blanket of FIG. 1, but which is adapted to surround a limb of a person;

FIG. 7 is a perspective view of the application of the chemical refrigerant blanket shown in FIG. 6 to a limb of a person;

FIG. 8 is a top plan view to reduced scale, illustrating a plurality of blankets of the type shown in FIG. 6 are connected together to form an enlarged blanket which is adapted to surround the body of a person;

FIG. 9 is a vertical sectional view of a releasable clamping means which maintains the two compartments of each chamber in a refrigerant blanket isolated from each other;

FIG. 10 is a perspective view of a blanket of the type shown in FIG. 1, illustrating the blanket in partially folded condition and utilizing the clamp shown in FIG. 9; and

FIG. 11 is a modified embodiment of a clamping means for maintaining the two compartments of each chamber in a chemical refrigerant blanket isolated from each other.

A chemical refrigerant blanket constructed in accordance with the teachings of the present invention is illustrated in FIG. 1 and is designated generally by the reference numeral **10**. The blanket **10** is sized to fully surround or envelope the body of a person who is to receive cold therapy, as noted in detail hereinbelow. The blanket **10** is fabricated from a flexible material such as vinyl plastic and it is provided with a plurality of elongated chambers **12** which extend for substantially the entire length of the blanket. Each one of the chambers **12** is defined by an upper wall **11** and a lower wall **13** which are connected together along their marginal edges. Although eight chambers are shown, it is emphasized that this is by way of illustration only and not by way of limitation. The chambers **12** are interconnected by flexible strips of material **14** which are coextensive in length with the chambers **12**. To put this another way, adjacent ones of the chambers **12** are spaced from each other by a different flexible strip of material **14**.

Connected to the outermost strips of material **14** are end panels, respectively designated **16** and **18**. Provided on the upper surface of the end panel **16** is a Velcro pile

section **20**. A Velcro hook section **22** is provided on the undersurface of the flap **18** (FIG. 3). The Velcro sections are adapted to releasably engage each other in the conventional manner to releasably fasten the blanket **10** about the body of a person. In other words, when the blanket **10** is used, the Velcro hook section **22** is adapted to be superposed on the Velcro pile section **20** thereby to releasably connect together the ends of the blanket **10**.

Provided at the bottom edge of the chambers **12** and the strips **14** is a bottom flap **24** which terminates at the junction of the end panels **16** and **18** and the respective outermost strips **14**. The bottom flap **24** is flexible and it may be folded back over the chambers **12** and the strips **14**, in superposed relation thereto for reasons which will become apparent from a consideration of the use of the blanket **10** as noted in detail below.

Approximately centrally located across each one of the respective chambers **12** is a releasable fastening element which is designated generally by the reference numeral **26** (FIG. 2). The clamp **26** is adapted to compress the upper and lower walls **11** and **13** of the respective chambers **12** together to divide each one of the chambers **12** into two compartments designated **28** and **30**, respectively, which, under normal circumstances, do not communicate with each other. The clamp **26** includes a rod **36** the length of which is slightly in excess of the width of a chamber **12**. The rod **36** is received against the underside of the wall **13** forming the bottom of a chamber **12**. A flexible and resilient U-shaped clamp **38** is sized and positioned to fit about the rod **36** with the top and bottom walls **11** and **13** of a chamber **12** received therebetween, as shown in FIG. 2.

More specifically, the transverse dimension between the legs of the U-shaped clamp **38** is slightly smaller than the total width of a plane which includes the walls **11** and **13** forming the chamber **12** and the diameter of the rod **36**. Accordingly, when the clamp **38** is forced over the walls of a chamber **12** and the rod **36** the legs of the clamp flex outwardly. When the legs of the clamp pass beyond the widest section of the rod **36**, the legs flex inwardly slightly due to the natural resiliency of the clamp **38**. Accordingly, each releasable fastening element **26** exerts a biasing force which compresses the walls of a respective chamber **12** together to prevent any communication between the compartments **28** and **30**.

Received within the compartment **28** is a fluid **32**. Granules **34** are received within the compartment **30**. In practice, the granules **30** may comprise granular ammonium nitrate. The fluid **32** may be water or any other hydrous fluid. When the element **26** is removed, as by pulling upwardly on the clamp **38** until the clamp member releases the rod **36**, the fluid **32** and the granules **34** intermix with each other. Alternatively, the element **26** may be removed by pulling the ends of the compartments **28** and **30** in opposite directions. This action causes the top and bottom walls **11** and **13** forming each chamber **12** to respectively move upwardly and downwardly in the vicinity of the element **26** so that an upward biasing force will be exerted on the clamp **38** by the top wall **11** and a downward biasing force will be exerted on the rod **36** by the bottom wall **13** of the chamber **12**. Hence, the clamp **38** and the rod **36** will separate thereby to provide for the communication of the compartment **28** with the corresponding compartment **30**.

When the fluid **32** and the granules **34** intermix an endothermic reaction occurs in which heat is absorbed by the resulting solution. If the blanket **10** is placed against the limb or the body of a person, heat will be absorbed from the area in contact with the particular chamber **12** thereby to cool the area and reduce any pain or likelihood of shock if the contacted area is injured.

In practice, the blanket **10** is adapted to be folded into a compact package so that it will occupy a minimum amount of space when it is stored. More particularly, the blanket **10** is adapted to be carried in an ambulance or the like where space is at a premium. Accordingly, the amount of space which the blanket **10** occupies must, of necessity, be relatively small. Thus, FIGS. 3 and 4 illustrate an arrangement of the chemical refrigerant blanket **10** which provides a relatively compact package which is designated generally by the reference numeral **39**.

To provide the compact package **39**, the bottom flap **24** is folded over the chambers **12** and the interconnecting strips of material **14** so that the length of the package **39** is essentially equal to the length of the chamber **12**. The blanket **10** is then folded lengthwise along each one of the interconnecting strips **14** so that adjacent ones of the chambers **12** are superposed on each other thereby to provide an accordion-like folded chemical refrigerant blanket package **39**. In other words, the strips **14** provide a hinge connection for adjacent ones of the chambers **12**. The end panels **16** and **18** are folded over the outermost chambers **12** so that the width of the folded blanket package **39** is slightly in excess of the width of any one of the chambers **12** thereby to provide a compact package. Fabric bands **40** may then be tied about the ends of the folded blanket **10** and about the mid-point thereof, as shown in FIG. 4, to maintain the blanket in the folded condition until it is ready for use.

It is to be noted that when the blanket **10** is in the folded condition, it will be impossible for an element **26** to be accidentally separated from a respective chamber **12**. That is, even if the blanket **10** is subjected to severe vibrations, as when an ambulance is rushing to the scene of an accident, the elements **26** cannot be separated from the respective chambers **12** due to the fact that each element is maintained in place by the layers of the blanket immediately above or below a particular fastening element.

In order to prevent damage to the blanket **10** while it is in the folded condition, the package **39** is received in an inner container **41** which may be made of corrugated cardboard or the like. The blanket **10** is maintained within the container **41** by end flaps **42** which are adapted to close the open end of the container **41**.

Due to the fact that the container **41** is fabricated from a relatively weak material, an elongated box **43** is provided, which is made of relatively strong material such as wood, to prevent damage to the blanket package **39** while it is in transit to the scene of an accident.

The box **43** includes a bottom section **44** and a lid **46** which is hingedly connected to the bottom section **44** by longitudinally spaced hinges **48** and which is adapted to close the open top of the box. Appropriate locks (not shown) may be provided to maintain the lid **46** in the closed position. The inner container **41** is received within the elongated box **43**. This, while the inner container **41**, which is fabricated from a relatively weak material such as cardboard, may easily be broken or pierced by an object, the box **43** affords a greater degree of protection.

When it is desired to utilize the blanket **10** of the present invention, the blanket package **39** (i.e., the blanket **10** in folded condition) is removed from the box **43** and the container **41**. The bands **40** are removed so that the blanket **10** may be opened up to its full size, as shown in FIG. 1. The fastening elements **26** are then removed, in the manner noted hereinabove, so that the compartments **28** and **30** of the respective chambers **12** communicate with each other. Hence, the fluid **32** mixes with the granules **34** to initiate the endothermic reaction. It is specifically emphasized that only preselected ones of the elements **26** may be removed while other elements **26** may be left in place. Thus, the persons applying the blanket **10** easily may control the amount the cooling produced by the blanket simply by choosing the appropriate number of elements **26** which are to be removed and, therefore, the number of chambers **12** which will be utilized to produce the required degree of cooling.

The patient P is then placed in the center of the blanket **10** with the feet of the patient terminating approximately at the junction of the flap **24** and the chambers **12** and

strips **14**. The flap **24** is then folded upwardly and rearwardly over the feet of the patient, as shown in FIG. 5. The left-hand portion of the blanket, as taken in FIG. 1, is wrapped about the left side of the injured person and the right-hand portion of the blanket is then wrapped around the right side of the person. The blanket is sealed along the ends by engaging the Velcro pile section **20** with the Velcro hook section **22**. Thus, the patient P will be completely enveloped by the blanket **10** with the exception of this head, thereby to subject the patient to cold therapy.

It is to be noted that the bottom flap **24** provides a means for completely enclosing the patient P within the blanket **10** so that no portion of the patient, other than his head, is exposed to the ambient temperature. To put this another way, with the exception of the patient's head, his complete body will be enveloped by the blanket **10** and thereby be subjected to a reduced temperature. If, on the other hand, the feet of the patient were exposed, different portions of his body would be at different temperatures. Hence, the patient would experience both heat and cold simultaneously which may produce disastrous results, particularly if the patient P is on the verge of shock.

While it is obvious that the blanket **10** must be of a size sufficient to encompass the body of a patient, it has been found that a blanket having the dimensions of 60 inches in width by 72 inches in length and a bottom flap **24** having a dimension of 12 inches in length is ideally suited to envelope the body of a person. The end panels **16** and **18** may each be two inches wide while the width of each one of the chambers **12** may be 4½ inches. The width of the outermost connecting strips **14** which adjoin the end panels **16** and **18** may be 3¼ inches. However, these dimensions are by way of example only and are not to be interpreted as being a limitation on the blanket of the present invention.

Accordingly, a chemical refrigerant blanket has been provided for completely surrounding the body of a person to apply cold therapy to a patient to reduce pain or likelihood of shock or the like, Moreover, the blanket is adapted to be folded into a compact package so that the blanket occupies a relatively small area.

In many applications, only a limb of a person may be injured, as where bones are broken or dislocated. In these cases there would be no need to apply cold therapy to the entire body of the person. Accordingly, the present invention contemplates the use of a blanket which is smaller in size than the blanket **10** and which is adapted to encompass the limb of a person rather than the body of a person.

More particularly, FIG. 6 illustrates a chemical refrigerant blanket constructed according to the present invention and designated generally by the reference numeral **50** which is adapted to encompass the limb of a person to apply cold therapy thereto. The blanket **50**, similarly to the blanket **10**, includes a plurality of longitudinally spaced chambers **112** which, in this application, are four in number. Adjacent ones of the chambers **12** are connected by flexible strips of material **114** so that the blanket **50** may be folded to provide a blanket package which is similar to the blanket package **39** illustrated in FIG. 4. Provided at the respective ends of the blanket **50** are end panels **116** and **118**. The end panel **116** is provided with Velcro pile section **120** on the upper surface and the end panel **118** is provided with a Velcro hook section on the lower surface, (not shown). Connected to the lower ends of the chambers **112** and the strips **114** is a bottom flap **124** which is adapted to be folded over the end of a limb of a person. The bottom flap **124** terminates inwardly of the end panels **116** and **118**. Accordingly, the bottom flap **124** will not interfere with the mating of the Velcro hook and Velcro pile sections on the end panels.

In practice, it has been found that the following dimensions provide a chemical refrigerant blanket **50** which is ideally suited to cover a limb such as the foot of a person. The length of the blanket may be 36 inches and the width may be 30 inches. The length of the bottom flap **124** may be 12 inches and the width of the chambers **112** and the interconnecting strips **114** may be the same as the dimensions of the corresponding chambers **12** and strips **14** of the blanket **10**. That is, the chambers **112** may be 4½ inches in width and the connecting strips may be 2½ inches in width. These dimensions are given as an illustrative example only since other dimensions may provide a blanket of the type contemplated.

FIG. 7 illustrates the application of the blanket **50** to the leg L of a patient P to reduce pain and swelling and/or the likelihood of shock in those cases in which the patient has broken his leg. Thus, the blanket **50** is unfolded in a manner similar to the preparation of the blanket **10** and the fastening elements **26** are removed therefrom to initiate the endothermic reaction in the chambers **112**. The blanket **50** is then positioned beneath the leg L of the patient P with the bottom flap **124** extending beyond the leg of the patient. The bottom bap **124** is then folded up along the sole of the foot of the patient and back over the top of the foot, as shown in FIG. 7. The ends of the blanket **50** are then wrapped around the leg L so that the Velcro pile and hook sections engage with each other so that the blanket **50** completely surrounds the leg L.

FIG. 7 also shows an alternative method for fastening the blanket **50** about the leg L of the patient. Thus, the blanket **50** is wrapped around the leg L with one end in overlapping relationship with respect to the other end. The blanket is then fastened in place by tapes **52** which are tied about the blanket.

Accordingly, a chemical refrigerant blanket has been disclosed for applying cold therapy to the limb of a person which completely encircles the limb of the person to maintain the entire limb at a lower temperature than the surrounding environment.

It is to be noted that the blanket **50** is approximately one-quarter of the size of the blanket **10**. It is possible, therefore, to connect four such blankets **50** togetther to provide one blanket which is approximately the same size as the blanket **10** thereby to provide a chemical refrigerant blanket which is adapted to encompass the body of a patient. Accordingly, the need for an ambulance to carry both sizes of blankets thereby is eliminated.

Thus, FIG. 8 diagrammatically illustrates the arrangement of four blankets **50** to provide a blanket having approximately the same dimensions as the blanket **10**. Two of the blankets **50** are placed side by side with the Velcro section **120** of one blanket in engagement with the Velcro hook section **122** of the other blanket so that the two blankets are essentially connected together as a single unit. The bottom flaps **124** of these two blankets are then superposed over the upper portions of a pair of blankets **50** which are similarly connected to each other along their respective end panels **116** and **118**. The overlapping bottom flaps **124** of the upper blankets **50** may be connected to the upper portion of the lower blankets **50** by any means such as by adhesive tape or the like.

The four blankets **50** will remain connected together to provide an enlarged blanket which is adapted to encompass the body of a person. Moreover, the bottom flaps **124** of the lower blankets provide a continuous bottom flap which may be folded over the bottom of the feet of the patient thereby to completely enclose the patient and prevent the entrance of warm air into the interior of the blanket.

In those applications wherein the blanket **50** or the blanket **10** must be utilized as quickly as possible, it may be inconvenient and time-consuming to begin to remove each one of the individual fastening elements **26**. Accordingly, FIG. 9 illustrates a continuous fastener **54** which is adapted to extend across the entire width of the blanket

10 to seal the plurality of chambers 12 along a medial line to provide the two separated compartments 28 and 30. When the fastener 54 is removed, all the compartments 28 will communicate with the respective compartments 30 simultaneously so that the fluid 32 will mix with the granules 34 thereby to provide the endothermic reaction in all of the chambers 12 at the same time.

More specifically, the clamp 54 comprises an upper section 56 and a lower section 58. The upper wall of the lower section 58 tapers upwardly and inwardly to a point 60. On the other hand, the bottom wall of the section 56 tapers inwardly and upwardly complementary to the tapering portion of the lower section 58 so that the lower section fits within the upper section 56.

As shown in FIGS. 9 and 10, the lower section 58 of the clamp 54 is received below the bottom wall 13 defining the chambers 12 and the upper section 56 is received above the top wall 11 defining the chambers 12. The lower section 58 of the fastener 54 is received in the upper section 56 so that the upper and lower walls defining the chambers 12 are compressed between the inclined surfaces of the upper and lower sections of the fastener 54. The upper and lower walls 11 and 13 of the chambers 12 abut each other to prevent communication between the compartments 28 and 30. The inclined or tapering portions of the upper and lower sections 56 and 58 may be sized so that the tapering portion of the section 58 is frictionally retained in the tapering portion of the section 56 with the walls defining the chamber 12 received therebetween so that the section remains connected together to prevent communication between the compartments 28 and 30.

A blanket utilizing the fastener 54 may be folded in the manner indicated in FIG. 10 to provide a compact package which easily may be transported. Thus, as shown in FIG. 10, a portion of the blanket 10 on one side of the fastener 54 depends from the fastener and is then folded upwardly along a fold line 62 to provide a first layer 64. The blanket is folded downwardly along a fold line 66 to provide a second layer 68. This procedure is continued until the blanket has been folded into a number of layers which are superposed one on top of the other. The portion of the blanket on the other side of the fastener 54 is folded in the same manner and appropriate tapes may be tied about the resulting package to maintain the blanket in the folded position. The folded blanket provides a relatively compact package which easily may be transported in an ambulance or the like.

When it is desired to utilize the blanket 10 shown in FIG. 10, the blanket is unfolded and the sections 56 and 58 are separated. Hence, the chemicals in each of the chambers 12 will be actuated to produce an endothermic reaction simultaneously so that the blanket 10 may be utilized quickly.

FIG. 11 illustrates a modified embodiment of a fastener which may be utilized to divide the plurality of chambers 12 into two compartments and to prevent communication between the two compartments until the blanket is to be utilized. Thus, as shown in FIG. 11, a fastener designated generally by the reference numeral 70 is adapted to be received across all of the chambers 12 in the blanket 10 so that the removal of the fastener 70 allows all of the compartments 28 to communicate with the respective compartments 30 to thereby produce the cold action of the blanket 10.

The fastener 70 includes an upper section 72 and a lower section 74. Provided on the upper wall of the lower section 74 is an upstanding semi-circular member 76. Provided in the lower wall of the upper section 72 is a semicircular recess 78 which is formed complementary to the circular member 76 on the lower section 74. The member 76 is adapted to be received in the recess 78 with the upper and lower walls 11 and 13 defining the chambers 12 received and compressed therebetween to prevcent communication between the compartments 28 and 30. Additionally, the outermost ends of the bottom and top walls of the respective sections 72 and 74 are relatively flat and are adapted to abut the upper and lower walls 11 and 13 defining each of the chambers 12 to further prevent communication between the compartments 28 and 30. The recess 78 and the member 76 may be sized so that the member 76 is frictionally retained in the recess 78 when the walls of the chamber are received therebetween to maintain the fastener 70 on the blanket 10 and to prevent its accidental removal therefrom.

When it is desired to utilize the blanket 10, the upper and lower sections 72 and 74 of the clamp 70 may be separated thereby to allow the compartments 28 to communicate with the respective compartments 30. Accordingly, the fluid 32 will mix with the granules 34 thereby to produce an endothermic reaction in the manner noted above. Thus, the clamp 70 provides another means for initiating an endothermic reaction in the plurality chambers 12 simultaneously for application in those cases where time is of the essence and the blanket 10 must immediately be applied to the patient.

While preferred embodiments of the invention have been shown and described herein it will be apparent that numerous omissions, changes and additions may be made in such embodiments without departing from the spirit and scope of the present invention.

What is claimed is:

1. A chemical refrigerant blanket adapted to encompass at least a limb of a person comprising
a plurality of elongated chambers each of which has an upper and a lower wall,
each of said plurality of chambers being connected to the next adjacent chamber by an elongated strip of flexible material coextensive in length with said plurality of chambers,
releasable clamping means for clamping together the walls of the respective chambers at approximately their midpoint to divide each of said plurality of chambers into two compartments which are separated from each other by said releasable clamping means,
one of said compartments of each of said plurality of chambers having a granular material therein,
the other of said compartments of each of said plurality of chambers having a fluid therein,
and a flap connected to one end of each of said plurality of chambers and said interconnecting strips of material and being adapted to be folded over the end of a limb of a person in superposed relation to said plurality of chambers and said interconnecting strips of material so that said blanket completely encloses the limb when it is applied thereto,
whereby said releasable clamping means may be removed to allow said compartments in said chambers to communicate with each other.

2. A chemical refrigerant blanket as in claim 1,
in which said blanket includes end panels along the longitudinal edges,
and releasable connecting means on said end panels adapted to engage one another to connect together the ends of said blanket.

3. A chemical refrigerant blanket as in claim 2,
in which said releasable connecting means includes a Velcro pile element on the upper surface of one of said end panels,
and a Velcro hook element on the undersurface of the other of said end panels,
whereby said Velcro pile element and said Velcro hook element are adapted to engage one another to releasably seal the ends of said blanket together.

4. A chemical refrigerant blanket as in claim 1,
in which said releasable clamping means comprises individual clamps for each of said plurality of chambers,
said releasable clamping means being adapted to be individually and selectively removed from predeter-

mined ones of said plurality of chambers to provide for the mixing of said fluid and said granules in said predetermined chambers.

5. A chemical refrigerant blanket as in claim 1,
in which said releasable clamping means includes a continuous clamp for clamping together the upper and lower walls of said plurality of chambers,
whereby the removal of said releasable clamping means causes said one compartment of each of said plurality of chambers to simultaneously communicate with respective ones of said other compartments.

6. A chemical refrigerant blanket as in claim 5,
in which said releasable clamping means includes an elongated clamp adapted to clamp together the upper and lower walls of said plurality of chambers,
said elongated clamp including a bottom section having an upper surface which tapers upwardly and inwardly to a point,
and an upper section having a bottom surface which tapers upwardly and inwardly complementary to the upper surface of said bottom section,
whereby the tapering surface on said bottom section is adapted to be received in the complementary formed tapering portion in the upper section with the upper and lower walls of the plurality of chambers received therebetween to divide each of said plurality of chambers into said compartments.

7. A chemical refrigerant blanket as in claim 5,
in which said clamping means includes an elonagted clamp having a width slightly in excess of the width of said blanket,
said clamp including a bottom section having an upstanding circular member thereon,
and a top section having a circular recess therein formed complementary to said upstanding circular member and adapted to receive said circular member therein,
whereby the upper and lower walls forming each of said plurality of the chambers 12 are adapted to be received between said member and said recess when said member is received in said recess to divide each of said plurality of chambers into said two compartments.

8. A chemical refrigerant blanket package comprising a plurality of elongated chambers in superposed relation with respect to each other,
hinge means connecting adjacent ones of said plurality of chambers together so that said plurality of chambers may be moved about said hinge means to a substantially planar position to provide an open blanket,
each of said plurality of chambers having an upper and a lower wall,
releasable clamping means for clamping together the walls of the respective chambers to divide each of said plurality of chambers into two compartments which are separated from each other by said releasable clamping means,
one of said compartments of each of said plurality of chambers having a granular material therein,
the other of said compartments of each of said plurality of chambers having a fluid therein,
said removable tape means surrounding said package to maintain said plurality of chambers in superposed relation to provide a complete package.

9. A chemical refrigerant blanket package in accordance with claim 8,



and a flap connected to one end of each of said plurality of chambers and the adjoining hinge means and being folded over said portion of said plurality of chambers and said hinge means in superposed relationship with respect thereto to provide means for covering the extremities of a person.

10. A chemical refrigerant blanket package according to claim 8,
wherein said hinge means comprise interconnecting strips of flexible material.

11. A chemical refrigerant blanket package, as in claim 8,
in which said releasable clamping means comprises an elongated clamp for fastening together the upper and lower walls of all of said plurality of chambers,
said releasable clamping means including a bottom section and a top section having complementary formed portions adapted to receive and clamp therebetween the upper and lower walls of said plurality of chambers to maintain said compartments separated from each other.

12. A chemical refrigerant blanket sized to surround the body of a person comprising a plurality of smaller blankets,
each of said smaller blankets comprising a plurality of elongated chambers each having an upper and a lower wall,
flexible strips of material interconnecting adjacent ones of said plurality of chambers,
releasable clamping means for clamping together the upper and lower walls of said respective chambers to divide each of said plurality of chambers into two compartments which are separated from each other by said releasable clamping means,
one of said compartments of each of said plurality of chambers having a granular material therein,
the other of said compartments of each of said plurality of chambers having a fluid therein, and a flap connected to one end of each of said plurality of chambers and said strips of material;
said plurality of smaller blankets being divided into an upper section and a lower section;
said upper and lower sections each comprising a number of said smaller blankets each fastened to the next adjacent blanket along their adjoining edges;
and fastening means for fastening together said upper and lower sections.

13. A chemical refrigerant blanket as in claim 12,
in which said upper and lower sections are positioned so that said flaps connected to the blankets in said upper section are superposed over and connected to the upper portion of the blankets in said lower section.

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