

[54] HOT AND COLD PACK

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3,815,610 6/1974 Winther..... 128/402

[76] Inventor: Steve Lebold, 45 Church St.,
Montclair, N.J. 07042

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Primary Examiner—Lawrence W. Trapp
Attorney, Agent, or Firm—I. Louis Wolk

[21] Appl. No.: 438,633

[52] U.S. Cl. 128/402; 128/403

[51] Int. Cl. A61f 7/00

[58] Field of Search 128/403, 399, 402, 258,
128/163; 150/2.1-2.6, 52 R, 52 E

[57] ABSTRACT

A flexible water retaining bar or envelope containing an absorbent pad is filled with a heated or cooled or frozen fluid and encased within a cover in which the sides and top edge are detachably fastened to enclose the envelope. The cover is provided with bands or straps adapted to engage a body member to hold the unit in bodily engagement to apply heat to a selected area. The pad and envelope may be shaped to permit application to various parts of the body.

[56] References Cited

UNITED STATES PATENTS

1,473,506	11/1923	Nessler	150/2.2
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1,964,962	7/1934	Rosenblum	150/2.2

7 Claims, 13 Drawing Figures

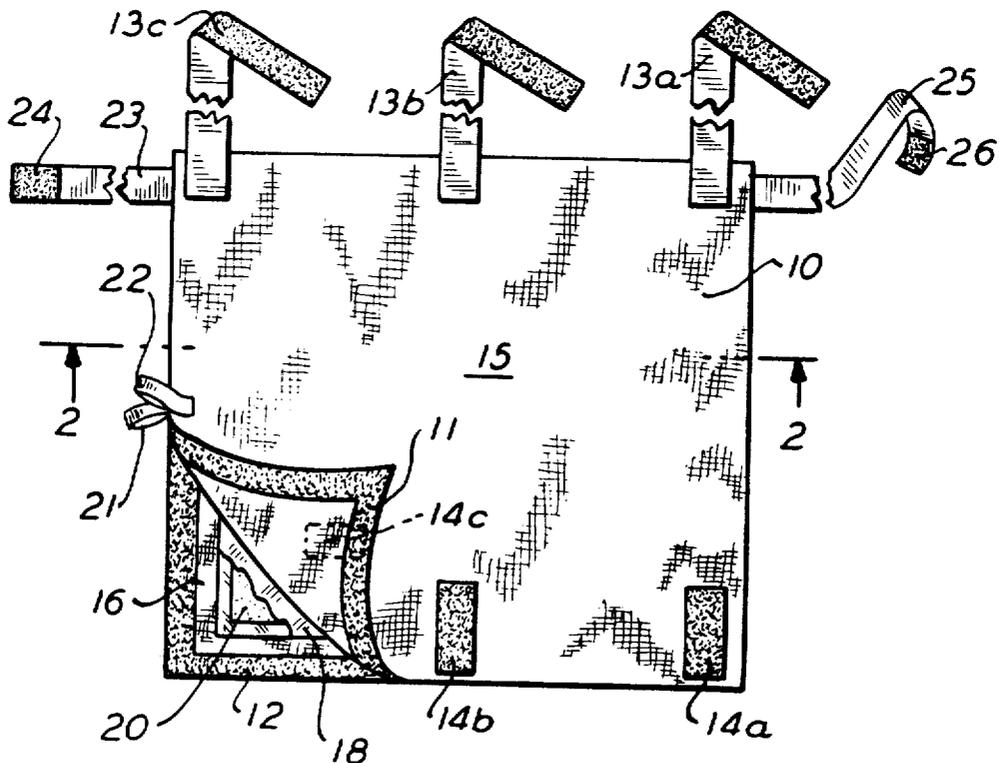


FIG. 1

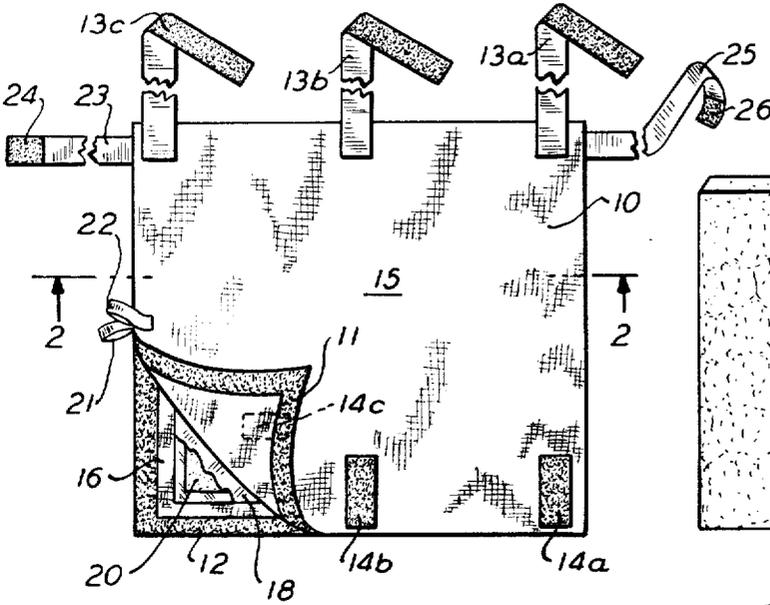


FIG. 3

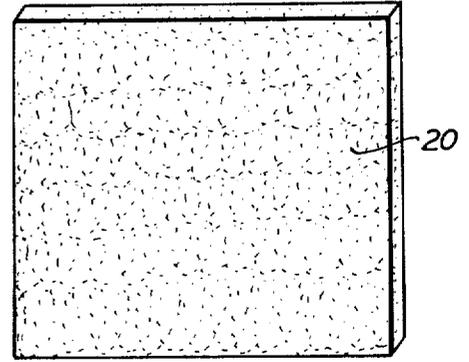


FIG. 4

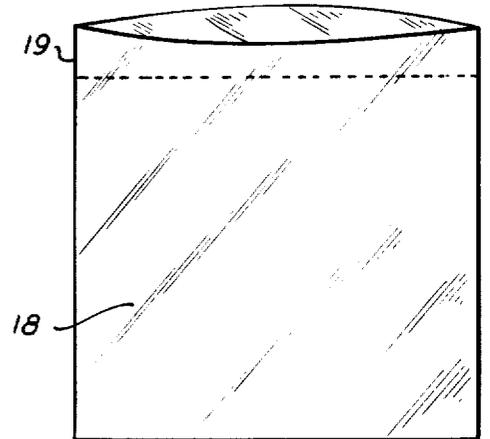


FIG. 2

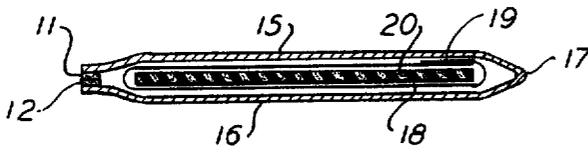


FIG. 5

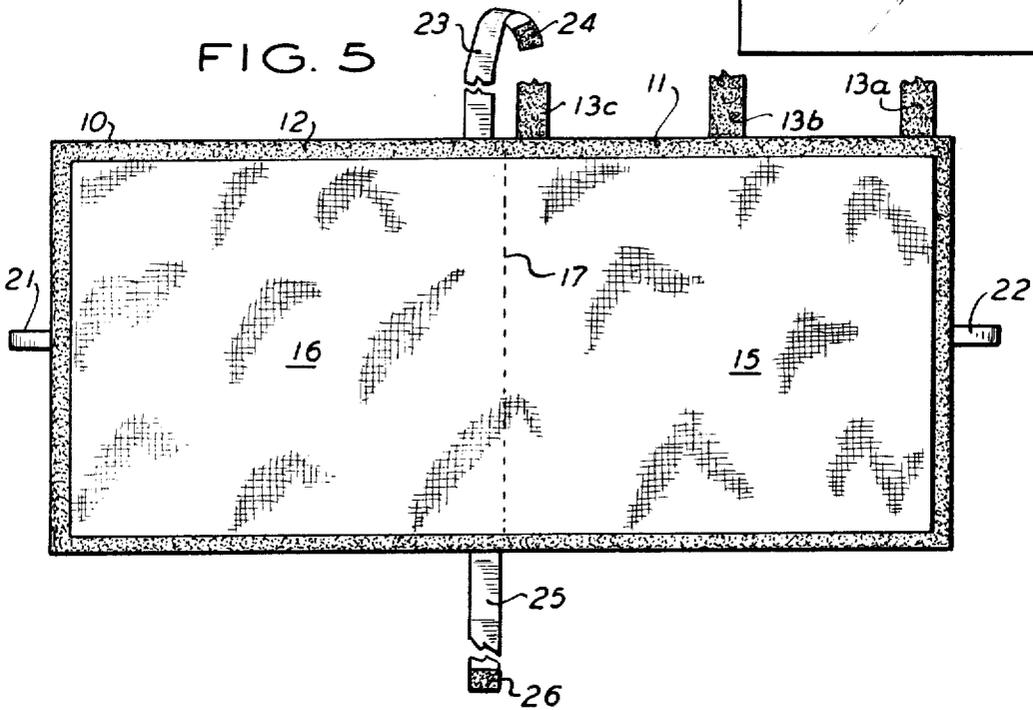


FIG. 7

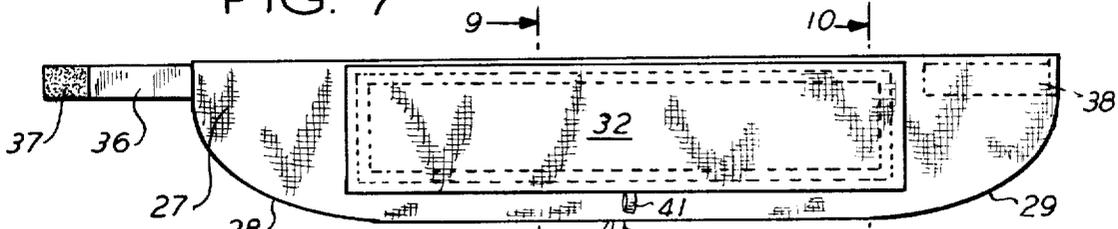


FIG. 6

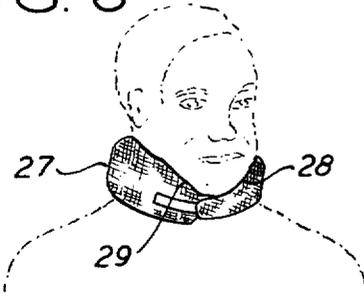


FIG. 9

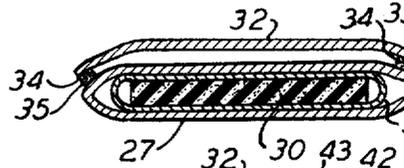


FIG. 10

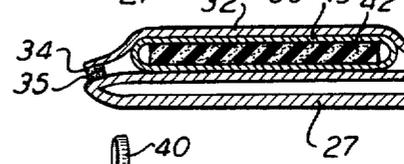


FIG. 8

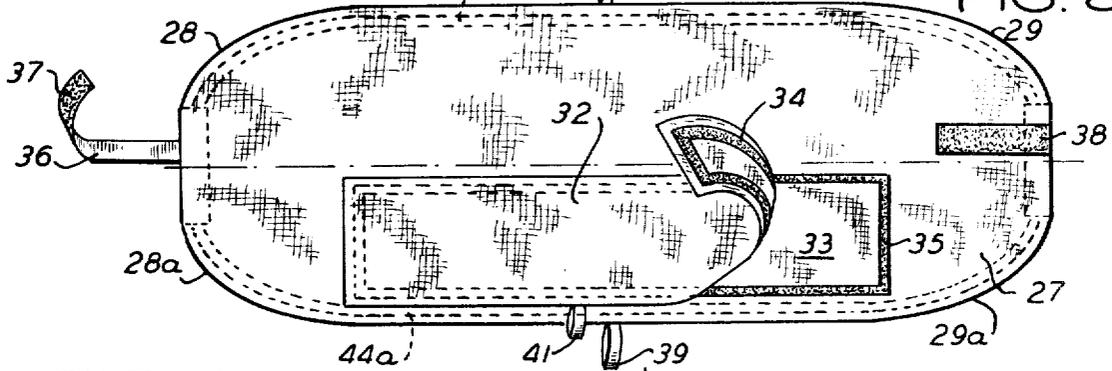


FIG. 11

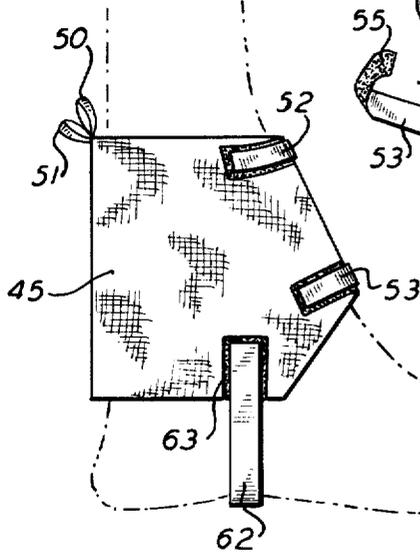


FIG. 12

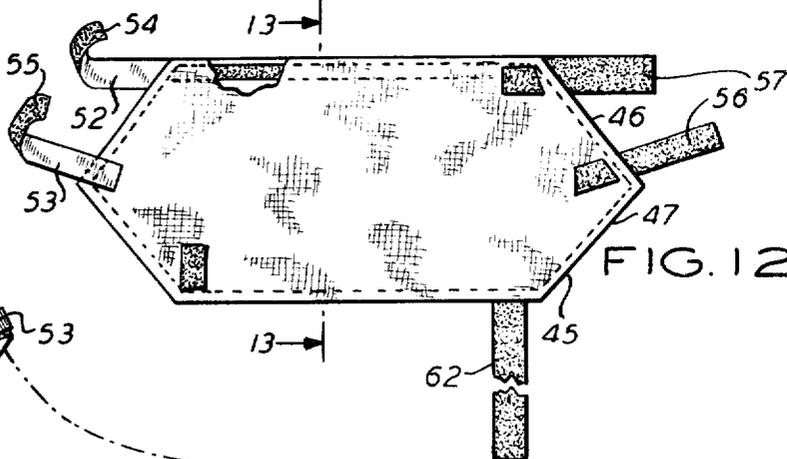
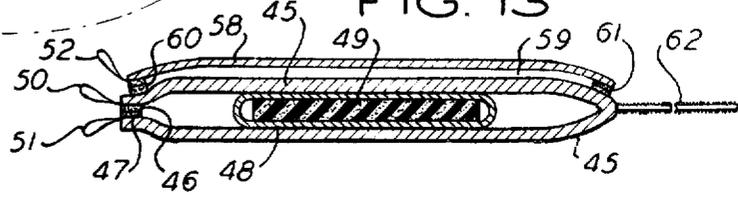


FIG. 13



HOT AND COLD PACK

BACKGROUND OF THE INVENTION

Various types of non-electrified heating pads or hot packs are known in the art. One common type includes a pouch containing a heat generating material which generates heat on contact with water and which is inserted within a cover member, as described in U.S. Pat. No. 1,487,114. Another type includes a mineral heat retaining member enclosed with a fabric bag such as shown in U.S. Pat. No. 3,587,578. Devices of these types are not provided with easily attachable and detachable body engaging members and are not designed to take maximum advantage of the warming effect of the substantial quantity of heated fluid which may be absorbed and retained by the combination of impervious bag and absorbent member of the present invention.

SUMMARY OF THE INVENTION

This invention relates to a non-electrified type of heating or cooling pad or hot or cold pack which is adapted to utilize hot or cold fluid such as hot water or ice or the like, absorbed by a porous absorbent material such as terry-cloth, cellulose sponge or the like, or in the case of ice or cooling or heating means in solid form the absorbent insert may be eliminated. This is retained within a water impervious bag which is in turn enclosed within a cover member with one or more separable sides for easy insertion and removal of the fluid containing bag and provided with a number of readily attachable and detachable straps or bonds to permit retention of the pad over a selected area of a body. The cover member is formed by one or more sheets or layers of absorbent fabric such as terrycloth, felt or suedized cloth, folded over in the center and held in place by means of separable fasteners preferably of the "Velcro" type. A plurality of elongated strip members which are affixed at one end thereof and attachable by means of Velcro fastening material to portions of the pad to permit positioning thereof around a body member. In addition a separate elongated strap member may similarly be provided for positioning of the pad over a large body portion, such as the back, shoulder or stomach, to permit the user to have a degree of mobility while the heated pad is applied. The invention may be applied to other body members such as the ankle, neck or face, as described herein in greater detail.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a plan view of an assembled pack embodying certain features of the invention, partially opened to show the interior construction.

FIG. 2 is a cross sectional view taken along lines 2—2 of FIG. 1.

FIG. 3 is a plan view of an absorbent insert for FIGS. 1 and 2.

FIG. 4 is a plan view of a pouch enclosure for the insert of FIG. 3.

FIG. 5 is a plan view of the cover for the pack of FIG. 1 prior to insertion of the elements of FIGS. 3 and 4.

FIG. 6 is a view in elevation showing another form of the pack of the invention designed to fit around the neck of a user.

FIG. 7 is a view in elevation of the form of the invention shown in FIG. 6 assembled prior to use.

FIG. 8 is a view of the form of invention shown in FIGS. 6 and 7 prior to assembly.

FIG. 9 is a cross sectional view taken along lines 9—9 of FIG. 7 when a heated absorbent member is inserted within the pack.

FIG. 10 is a cross sectional view taken along lines 10—10 of FIG. 7 when a cooling means is inserted within the pad.

FIG. 11 is a view in elevation of another form of the invention placed around the ankle of a wearer.

FIG. 12 is a plan view of the assembly of FIG. 11 prior to use.

FIG. 13 is a view in cross section taken along lines 13—13 of FIG. 12.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

As shown in FIGS. 1 to 5, a rectangular embodiment 10 of the invention is illustrated wherein a rectangular absorbent sheet member of terry-cloth or other absorbent fabric is divided into two equal portions 15 and 16 adapted to be folded over along a fold line shown by dotted line 17. Area 15 is provided with a fastening means 11 along its outer edges and area 16 is provided with fastening means 12 around its outer edges, so that fasteners 11 and 12 cooperate to engage and form an enclosure when areas 15 and 16 are folded over. Preferably 11 and 12 are of the hook and loop type of fastener known as Velcro, such as is described in U.S. Pat. Nos. 2,717,437; 3,192,587; 3,387,341, etc. Other types of fasteners may also be used as long as satisfactory enclosure will result.

As shown in FIG. 3, element 20 is a pad or sheet of absorbent material, which may be a layer of cellulose or other sponge of suitable thickness, i.e. $\frac{1}{4}$ to 1 inch thick, or else one or more layers of fibrous material such as felt, terry-cloth of the like capable of absorbing a substantial volume of liquid.

As shown in FIG. 4, element 18 is a flexible moisture retaining pouch slightly larger in dimension than element 20 which it is adapted to receive. The pouch is preferably made of thin flexible plastic material such as polyethylene, polypropylene or else of thin vulcanized rubber, which materials are able to withstand the temperature of boiling water, or other heated fluids. The pouch is formed with an extension area or flap portion 19 adapted to be folded over to enclose the insert after it is placed therein.

The elements described in FIGS. 3, 4 and 5 are then assembled to produce the pack described in FIGS. 1 and 2 in the following manner, when the device is to be utilized as a hot pack. Absorbent member 20 is inserted into pouch 18. A measured quantity of hot water, sufficient to saturate the absorbent material is then poured into the pouch, flap 19 is folded over to prevent leakage after assembly, and the assembled unit is enclosed within 15 and 16 by folding them over and engaging the fastening strip members 11 and 12. The resulting structure is clearly illustrated in FIGS. 1 and 2. The hot pack is then ready for positioning upon a body member utilizing straps 13a, 13b and 13c of suitable length, the ends of said straps being provided with one portion of a "Velcro" fastener member and corresponding areas 14a, 14b and 14c on the opposite surface of 15 being provided with cooperating "Velcro" members. Tabs 21 and 22 are provided as shown in FIGS. 1, 2 and 5 to permit easy removal of the pouch.

When intended to be used as a cold pack, the absorbent pad 20 may be impregnated with ice water or other cold fluid, or may be replaced entirely with crushed ice, introduced into the pouch. When the pack is intended to be used over a large body area, such as chest or back, it may be positioned properly and held in place by elongated strap members 23 and 25 extending outward from the fold line area with the ends provided with cooperating fastening elements 24 and 26 respectively, also of the hook and loop type.

In a modified form of the invention shown in FIGS. 7-11 inclusive, a hot or cold pack especially suitable for application to the neck and upper cervical area of the spine is provided. As shown in FIG. 8, a rectangular fabric or sheet material elongated sufficiently to fit about the back of the desired wearer is provided having its four corners curved or contoured as shown at 28, 28a and 29, 29a. The sheet material is preferably porous of terrycloth, felt, or other fabric, but may be of thin sheet plastic material. The edges of member 27 are provided with cooperating fastening straps 44 and 44a of the Velcro type so that when it is folded along a central fold line shown by the dotted line in FIG. 8, an enclosure will result having the shape shown in FIG. 7. Within this enclosure may be positioned absorbent pad 30 within plastic pouch 31, rectangular in shape and elongated to conform to a substantial portion of the length of member 37 and to fit within the enclosure when its two halves are folded over. The outer surface of 27 is provided with a supplemental layer 32, also of elongated rectangular shape, which is provided on its inner edges with a strip of "Velcro" or the like fastening material 34, positioned to cooperate with corresponding fastening strap 35 to define a pocket area 33.

When used as a hot pack, as shown in FIG. 9, the absorbent pack 30 within pouch 31 is saturated with hot water placed within 27 which is folded over thereby enclosing it within the contoured member shown in FIG. 7. In this case, layer 32 can remain as an additional insulating layer, or removed by detaching the fastening straps by a pull on tab 41. The assembly can then be placed around the neck of the wearer as shown in FIG. 6, with the contoured area 28 and 29 positioned beneath the chin of the wearer for comfort and fit. It can then be fastened by engaging cooperating "Velcro" strap 37 or strap 36 with "Velcro" area 38 as shown in FIGS. 6 and 7.

When desired for use as a cold pack, as shown in FIG. 10, absorbent material 42 saturated with ice water, or replaced by crushed ice, is placed within pouch 43. This is then enclosed beneath member 32 over area 33 as shown in FIG. 8, within an enclosure formed by engagement of Velcro fastening straps 34 and 35. Upon folding member 27 and engaging straps 44 and 44a, it can then be used as a cold pack with layer 32 in contact with the skin, while the double layer formed by 27 can serve as an insulating layer.

As shown in FIGS. 11-14, a cold and hot pack incorporating the features of this invention are adapted for application to an ankle to treat arthritis and injury causing swelling. As shown in FIG. 12, member 45 is shaped to fit around an ankle as shown in FIG. 11 and is provided with straps 52 and 53 having "Velcro" areas 54 and 55 at the ends adapted to engage cooperating fastening areas at the ends of straps 56 and 57. Member 45 is doubled to enclose a pouch 48 within which is positioned a heat or cold absorbent pad 49.

The pouch is retained within an enclosure formed by engaging fastening straps of the Velcro type. As shown the assembly has a generally hexagonal shape and when wrapped around an ankle has the appearance shown in FIG. 11. Detachably positioned over one surface of member 45 is a sheet member 58 having a similar configuration, or just simply rectangular in shape attached by means of Velcro straps 60, 61, to provide an outer pocket 59 to receive a pouch containing either heating or cooling material similar to the form shown in FIG. 10. This permits use of the device around the ankle or other body member with only a single layer of fabric interposed. An additional strap member 62 is provided to pass under the ball of the foot and engage a cooperating Velcro fastening area at 63.

In use the hot pack will provide moist heat when in contact with skin through perspiration and containment of the resulting moisture. Improved results are obtained either by moistening the fabric slightly before applying to the body, or by using a plastic pouch for receiving the hot or cold material formed of micro-porous film.

I claim:

1. A pack for therapeutic heat transfer with portions of the human body which comprises a substantially fluid impervious envelope, heat transfer means enclosed therein and a porous flexible cover therefor surrounding said envelope, said cover comprising

a flat sheet member folded along a fold line to provide a pair of superimposed members, said members being detachably fastened along the edges thereof beyond the fold line to permit ready insertion and removal of the pouch, and a plurality of flexible strap means attached to said cover member having detachable fastening means at the end of each and cooperating fastening members attached to the body of the cover at points remote from said strap members to permit attachment of the heat exchange assembly to a body member.

2. A pack according to claim 1 wherein the heat transfer means enclosed within the pouch is a heated fluid.

3. A pack according to claim 1 wherein the heat transfer means enclosed within the pouch is cooled fluid.

4. A pack according to claim 1 wherein the pack comprises an elongated substantially rectangular pouch and wherein said cover enclosing said pouch is also elongated and contoured at the ends thereof to permit positioning around the neck of an individual with said contoured positions curving downwardly under the chin of the wearer.

5. A pack for therapeutic heat transfer with portions of the human body which comprises a substantially fluid impervious envelope, heat transfer means enclosed therein and a porous flexible cover therefor surrounding said envelope, said cover comprising a pair of superimposed flat sheet members fastened together at the edges thereof, at least one of said edges being detachably fastened together to permit ready insertion and removal of the pouch, and a plurality of flexible strap means attached to said cover member having detachable fastening means at the end of each and cooperating fastening members attached to the body of the cover at points remote from said strap members to permit attachment of the heat exchange assembly to a body member,

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and a porous absorbent material positioned within the fluid impervious envelope having absorbed therein a heat transfer fluid.

6. A pack for therapeutic heat transfer with portions of the human body which comprises a substantially fluid impervious envelope, heat transfer means enclosed therein and a porous flexible cover therefor surrounding said envelope, said cover comprising a pair of superimposed flat sheet members fastened together at the edges thereof, at least one of said edges being detachably fastened together to permit ready insertion and removal of the pouch, and a plurality of flexible strap means attached to said cover member having detachable fastening means at the end of each and cooperating fastening members attached to the body of the cover at points remote from said strap members to permit attachment of the heat exchange assembly to a body member,

and a separate layer of porous flexible material detachably attached along the edges of one of said superimposed members to provide a supplemental

heat insulating layer.

7. A pack for therapeutic heat transfer with portions of the human body which comprises a substantially fluid impervious envelope, heat transfer means enclosed therein and a porous flexible cover therefor surrounding said envelope, said cover comprising a pair of superimposed flat sheet members fastened together at the edges thereof, at least one of said edges being detachably fastened together to permit ready insertion and removal of the pouch, and a plurality of flexible strap means attached to said cover member having detachable fastening means at the end of each and cooperating fastening members attached to the body of the cover at points remote from said strap members to permit attachment of the heat exchange assembly to a body member,

said pack being contoured to conform to and surround the ankle of a wearer and having fastening straps across the front portion of the ankle and under the ball of the foot to maintain the heat exchange member in contact with said ankle.

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