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N. J. POUX
THERAPEUTICAL DEVICE
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2,562,121

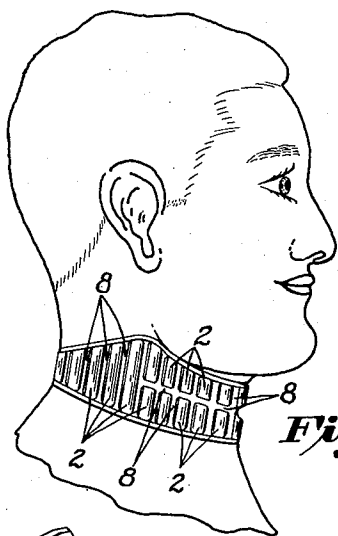


Fig. 1.

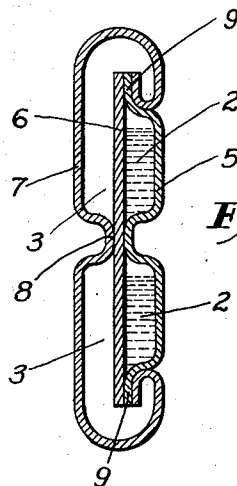


Fig. 3.

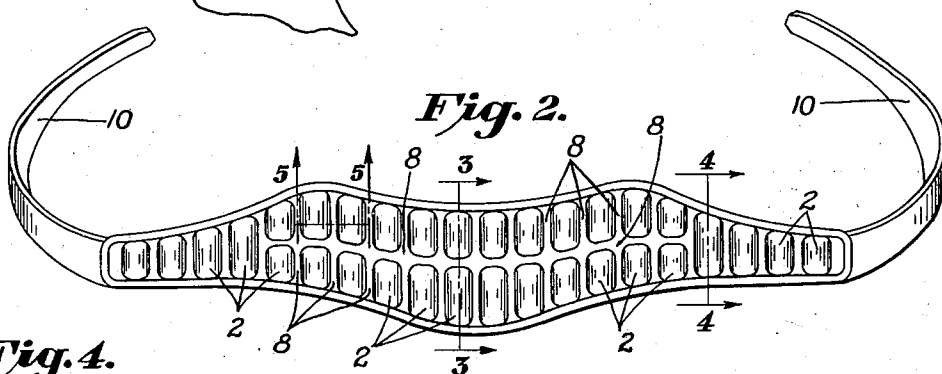


Fig. 2.

Fig. 4.

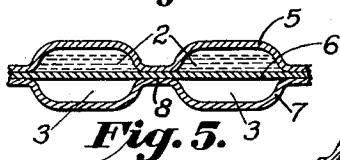
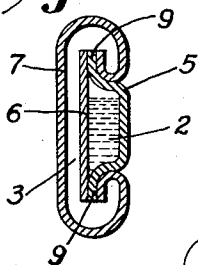


Fig. 5.

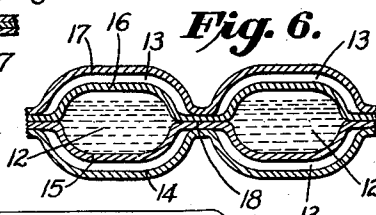


Fig. 6.

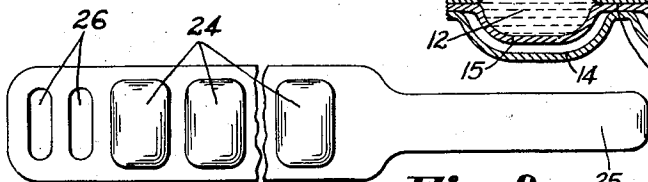


Fig. 8.



Fig. 7.

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THERAPEUTICAL DEVICE

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10 Claims. (Cl. 150-2.2)

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This invention relates to therapeutical devices, or to ice and hot packs as they are more commonly called, for heating parts of the human body or for withdrawing heat therefrom.

It is the general practice to employ a hot water bottle for applying heat to parts of the body, or an ice bag filled with cracked ice if it is desired to withdraw heat from the body. Such bottles or bags are not only inconvenient and time consuming to fill and refill but also there is danger of leakage of the bottle or bag at the cap or plug. Also, such bags or bottles are cumbersome and are not shaped to conform to the part of the body to be treated, which results in an inadequate supply of heat or cold to the part of the body being treated. Furthermore, these bags or bottles in most cases are placed directly next to the skin of the patient, oftentimes resulting in a severe burn.

It is one of the objects of the present invention to provide an improved therapeutical device of an extremely flexible construction which can be used either as a hot pack for supplying heat to the body, or as a cold pack for withdrawing heat therefrom.

It is another object of the invention to provide an improved therapeutical device which is light and inexpensive in its construction and which conforms to the part of the body being treated.

It is a more specific object of this invention to provide an improved therapeutical device consisting of a plurality of permanently sealed liquid-containing compartments or cells having air-containing compartments or cells arranged therewith which are adapted to act as a cushioning and/or insulating means for the liquid-containing compartments or cells.

It is a further object of the present invention to provide an improved therapeutical device having a liquid permanently sealed therein in the form of a strap or collar which may be conveniently used and applied, for example, to the neck of the patient for withdrawing heat therefrom as in the case of a tonsilectomy.

Various other objects and advantages of this invention will be more apparent in the course of the following specification, and will be particularly pointed out in the appended claims.

In the accompanying drawings, there is shown for the purpose of illustration, several embodiments which my invention may assume in practice.

In these drawings:

Fig. 1 is a profile view of a human being, showing how my improved therapeutical device is adaptable for use;

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Fig. 2 is a plan view of my improved device;

Fig. 3 is an enlarged sectional view taken on line 3-3 of Fig. 2;

Fig. 4 is an enlarged sectional view taken on line 4-4 of Fig. 2;

Fig. 5 is an enlarged sectional view taken on line 5-5 of Fig. 2;

Fig. 6 is a cross-sectional view corresponding to Fig. 5, showing a modified form of the device of my invention;

Fig. 7 is a cross-sectional view also corresponding to Fig. 5 of still another modification of the present invention; and

Fig. 8 is a plan view of another form of strap in accordance with my invention.

Referring more particularly to the drawings, the improved device of my invention consists of an elongated body member made from a flexible impervious relatively thin material, such as rubber, but made preferably from one of the synthetic plastic materials, such as vinyl, polyvinyl, polyethylene, nylon, acetate, either in sheet or film stock. On one side of the body member, there is provided a plurality of compartments or cells 2 with each being permanently sealed and containing a suitable liquid, preferably water. On the opposite side of the body member, there is provided a plurality of permanently sealed compartments or cells 3 with each containing a suitable amount of air, with the number of such air compartments corresponding to the number of liquid-containing compartments 2. In other words, the air-containing compartments 3 and liquid-containing compartments 2 are superimposed relative to each other with one positioned directly opposite the other, as clearly shown in Figs. 3 and 5 of the drawings.

These compartments are formed preferably by positioning three strips of material 5, 6, and 7 on top of each other and securing them together at spaced-apart intervals so as to provide relatively wide and thin portions 8 between each of the compartments 2 and 3, whereby the body member is permitted to hinge freely at these portions. The strips may be secured together by vulcanizing, if rubber, or by any suitable adhesive, but are preferably secured together by means of heat or electronic sealing, especially if the material is characteristic of such sealing. By such sealing together of the strips, it will be seen that compartments 2 are formed between the outer strip 5 and the intermediate strip 6, and that compartments 3 are formed between the other outer strip 7 and the intermediate strip 6. The side edges of the strip 7 are preferably folded around under upon itself and the edges of the

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three strips are secured together throughout the length thereof, as at 9, as shown in Figs. 3 and 4. The liquid and air can be placed in the compartments 2 and 3, respectively, at any suitable time during the manufacture of the device, and, of course, before the compartments are permanently sealed from each other.

At each end of the body member, there is provided preferably a strap 10 for securing the device to the patient. These straps are preferably a continuation of the intermediate strip 6 and may be secured together around the patient by tying, pinning, or in any other suitable manner. In the present instance, it will be noted that the device is shaped substantially like a collar to fit the contour of the neck region of a patient, but it will be understood that the device may be any desired shape to fit that part of the body to be treated.

In Fig. 6, there is shown a modified form of my device. In this construction, there is provided, as before, a series of permanently sealed liquid-containing compartments or cells 12 with an air compartment or cell 13 disposed on each side of each of the compartments 12 so that each of these compartments is completely surrounded by an air compartment or chamber. In such case, the body member is made preferably from four strips of material 14, 15, 16, and 17, with the liquid-containing compartments 12 disposed between the two intermediate strips 15 and 16, and with the two outer air-containing compartments 13 disposed between the outer strip 14 and the intermediate strip 15 on one side of the body member and the other outer strip 17 and the intermediate strip 16 on the opposite side of the body member. As before, these four strips are secured together at spaced-apart intervals at relatively flat and wide portions 18 to form the compartments 12 and 13.

The form of the device shown in Fig. 7 is another modification of my invention. This construction is similar to that shown in Figs. 1 through 5 but differs in that one side of the body member is flat and straight. There is provided a series of permanently sealed liquid-containing compartments 19 and a corresponding number of air-containing compartments 20 surrounding the compartments 19 on one side thereof. The construction is made preferably from three strips of material as is the preferred form with the strip 21 being preferably straight and flat so as to provide a flat outer side and the strips 22 and 23 attached thereto at spaced-apart intervals, as before, so as to provide relatively wide and flat portions between the compartments.

In Fig. 8, there is shown a slight modified form of strap of my invention. In this construction, there is provided a plurality of liquid-containing compartments 24 and, if desired, a corresponding number of superimposed air-containing compartments (not shown) directly opposite the liquid-containing compartments similar to the preferred form. At one end of the body member, there is provided a strap 25 and at the other end, there is provided a pair of loops or slots 26 through which the strap 25 is threaded so as to secure the device to the patient.

If the device of my invention is to be used as a cold pack, it is placed in a deep freeze unit or other refrigerating device so as to freeze the liquid in the individual compartments. If the device is to be used as a hot pack, it is submerged in boiling water or placed in a steam unit or other suitable heating device until the liquid in the

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compartments reaches the desired temperature.

In use, the device is applied to the patient preferably by placing that side of the device on which the air-containing compartments are located next to the skin of the patient. It is the purpose of the air compartments to provide a cushion between the patient and the liquid-containing compartments so as not to be uncomfortable to the patient, especially if the liquid therein is frozen solid. Also, these air compartments provide an insulating effect in case it is desired not to withdraw too rapidly too much heat from the body so as to prevent the patient from becoming subject to a chill.

As a result of my invention, it will be seen that there is provided not only a simple and inexpensive device which can be conveniently used either as a cold or hot pack, but, at the same time, a device which is efficient and effective in its use. It will be seen also that my device is shaped to conform to the part of the body to be treated and has a cushioning means incorporated therewith so as to make the patient as comfortable as possible.

While I have shown and described several embodiments which my invention may assume in practice, it will be understood that these embodiments are merely for the purpose of illustration and description, and that other forms may be devised within the scope of my invention as defined in the appended claims.

What I claim as my invention is:

1. An article of the class described comprising an elongated body member made of relatively thin and flexible material, at least one permanently sealed air-containing compartment arranged on one side of said body member, a plurality of permanently sealed and independent liquid-containing compartments arranged on the opposite side of said body member so as to be disposed in superimposed relation to said first-mentioned compartment.

2. An article of the class described, as defined in claim 1, wherein the plurality of liquid-containing compartments are separated from each other by substantially flat and relatively wide portions extending in a plane substantially parallel to the body member having a thickness substantially less than the thickness of the body member at said compartments so as to provide a body member which is extremely flexible.

3. An article of the class described comprising an elongated body member of relatively thin and flexible material, a plurality of permanently sealed and independent air-containing compartments arranged on one side of said body member, a plurality of permanently sealed and independent liquid-containing compartments arranged on the opposite side of said body member so as to be disposed in superimposed relation to said air-containing compartments.

4. An article of the class described comprising an elongated body member made of relatively thin and flexible material, a plurality of permanently sealed and independent liquid-containing compartments, and at least one permanently sealed air-containing compartment arranged to at least one side of said liquid-containing compartments, said liquid and air-containing compartments being in superimposed relation relative to each other whereby said air-containing compartment is adapted to act as a cushion.

5. An article of the class described, as defined in claim 4, wherein the plurality of liquid-containing compartments are separated from each

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other by substantially flat and relatively wide portions extending in a plane substantially parallel to the body member having a thickness substantially less than the thickness of the body member at said compartments so as to provide a body member which is extremely flexible.

6. An article of the class described comprising an elongated body member made of relatively thin and flexible material, said body member being shaped so as to conform to the part of the body of the patient to be treated, a plurality of permanently sealed and independent liquid-containing compartments arranged on one side of said body member adapted to be disposed out of contact with the patient, an air-containing compartment arranged on that side of said body member adapted to be disposed next to the patient so that said liquid-containing and air-containing compartments are disposed in superimposed relation relative to each other whereby said air-containing compartment in one position is adapted to act as a cushion when the article is applied to the patient, and means for securing said body member to the patient.

7. An article of the class described, as defined in claim 6, wherein the plurality of liquid-containing compartments are separated from each other by substantially flat and relatively wide portions extending in a plane substantially parallel to the body member having a thickness substantially less than the thickness of the body member at said compartments so as to provide a body member which is extremely flexible.

8. An article of the class described comprising a body member made of three thicknesses of relatively thin and flexible material, the three thicknesses being secured together at spaced intervals so as to provide a series of permanently sealed and independent compartments on each side of the intermediate thickness of material with said compartments on one side being separated from the compartments on the other side

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by said intermediate thickness of material, with the space between said compartments being relatively thin, flat, and wide so that the device is extremely flexible, said compartments on one side of said intermediate thickness of material containing air and those on the opposite side a liquid.

9. An article of the class described comprising an elongated body member made of relatively thin and flexible material, a plurality of permanently sealed and independent liquid-containing compartments carried by said body member and arranged in side-by-side relation, and an air-containing compartment surrounding at least a portion of each of said first mentioned compartments on one side of said body member, said last mentioned compartments adapted to act as a cushion for said body member when the article is applied to the patient.

10. An article of the class described, as defined in claim 9, wherein the plurality of liquid-containing compartments are separated from each other by substantially flat and relatively wide portions extending in a plane substantially parallel to the body member having a thickness substantially less than the thickness of the body member at said compartments so as to provide a body member which is extremely flexible.

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