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COMBINATION ICE AND HOT PACK

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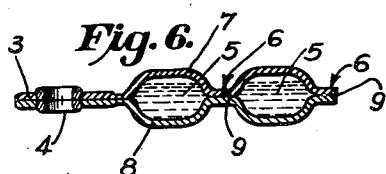
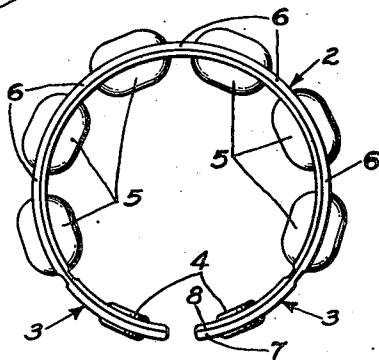
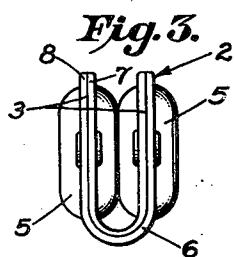
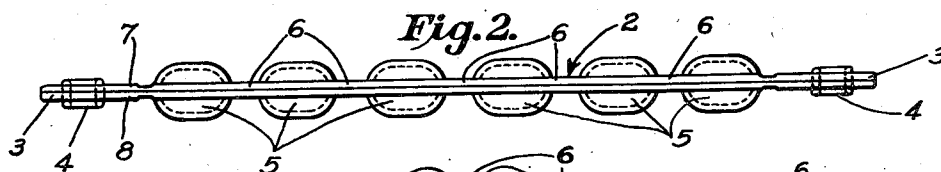
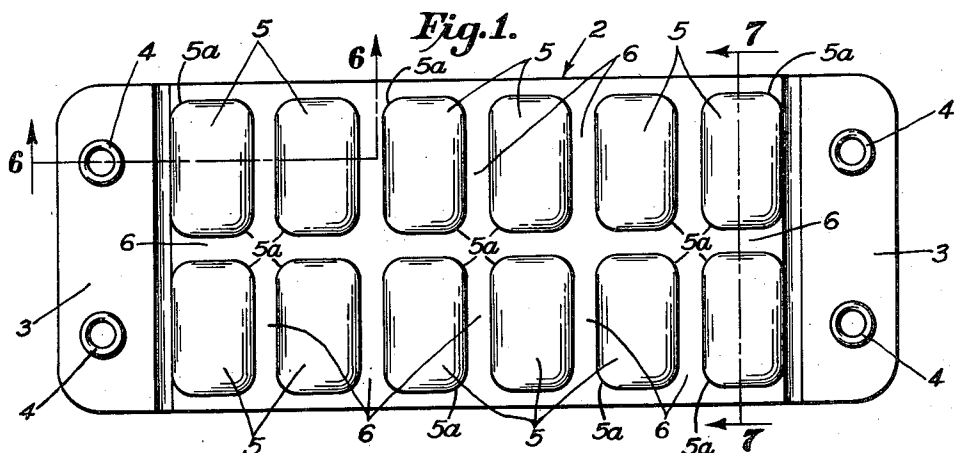
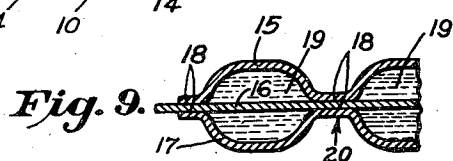
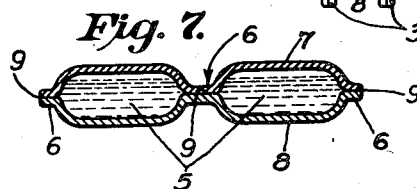
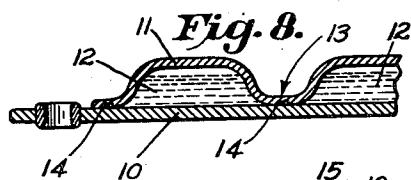
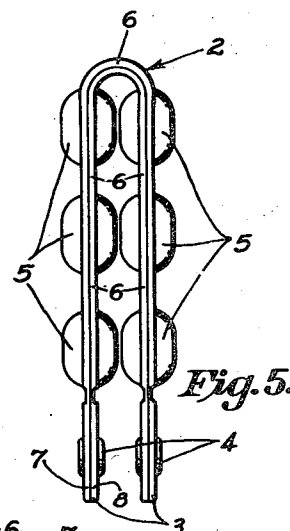


Fig. 4.



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COMBINATION ICE AND HOT PACK

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4 Claims. (Cl. 62-1)

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

Heretofore, it has been the customary practice to use hot water bottles for application of heat to the body, or if it were desired to withdraw heat therefrom a hot water bottle or ice bag was filled with cracked ice or ice cubes and applied to the part of the body to be treated. Such practice is not only inconvenient and laborious, but, in addition, there is always danger of leakage of the bottle or bag at the cap or plug. The use of such bottles or bags is especially inconvenient to hospitals and sanitariums, especially at the present time with a minimum amount of help available, as a considerable amount of time is consumed filling, emptying, and refilling the bottles or bags.

According to the present invention, there is provided a combination ice and hot water bag or pack containing a suitable liquid, such as water, which is permanently sealed therein and ready for use thereby eliminating the above mentioned disadvantages. While several such devices having a suitable refrigerant or fluid permanently sealed therein have been heretofore suggested and used, they were not practical but were extremely unsatisfactory. Most of these bags or packs were made of a relatively heavy inflexible material, and could not be applied properly to the part of the body to be treated, particularly if they contained a refrigerant frozen therein. They were so constructed that they would not flex after the fluid refrigerant was frozen. While it has been suggested to provide such a bag with partitions to break up the ice, they were bulky and expensive to manufacture and further did not possess the degree of flexibility that such a device should have.

It is the general object of the present invention to provide an improved combination ice and hot pack which is relatively light in its construction, and so constructed and arranged that it is extremely flexible so as to conform to any irregular surface or part of the body to which it is applied.

It is another object of the invention to provide such an article which is simple and inexpensive to manufacture and, at the same time, strong and rugged in its construction.

It is a further object of this invention to provide an improved articles which can be used either as a hot pack for heating the part of the body to be treated, or as an ice bag for withdrawing heat therefrom.

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It is a more specific object of my invention to provide such an article consisting of a plurality of independent and sealed fluid-containing compartments, with the compartments spaced from each other by a relatively wide and flat, thin web of material whereby the article is so flexible that it can be folded upon itself whether the compartments contain a hot fluid or a solidly frozen fluid.

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 plan view of the improved ice and hot pack of my invention;

Fig. 2 is a side view thereof;

Fig. 3 is an end view of my article, showing it folded transversely upon itself emphasizing its flexibility characteristics;

Fig. 4 is a side view thereof, showing how it can conform to a circular shape;

Fig. 5 is a side view of my improved article, showing it folded longitudinally upon itself;

Fig. 6 is a sectional view taken on line 6-6 of Fig. 1;

Fig. 7 is a sectional view taken on line 7-7 of Fig. 1;

Fig. 8 is a cross sectional view showing a modification of my invention; and

Fig. 9 is a cross sectional view showing another modification of the present invention.

Referring more particularly to the drawings, the improved combination ice and hot pack of my invention consists of an elongated, rectangular-shaped body member 2 having preferably a flat end portion 3 at each end thereof in each of which there is provided a pair of apertures or eyelets 4 for strapping the article to the body of the patient or for hanging up the device when not in use.

Within the body member 2, there is provided a series of spaced-apart compartments 5 with each containing a suitable liquid, preferably water. The compartments are only partially filled with the liquid so as to compensate for expansion thereof when the liquid is frozen therein for use of the article as an ice bag for cooling purposes. These compartments are shown as being rectangular in shape, but they may be any desired shape and preferably have substantially

an oval-shaped cross section. If the compartments are rectangular in shape, it is preferable that the corners be rounded, as at 5a, so as to eliminate any danger of the ice therein from penetrating the material from which the article is made, when the liquid therein is frozen solid.

The compartments 5 are separated from each other by relatively thin wide portions 6 which are substantially flat in a plane parallel to the plane of the body member so as to obtain a hinging effect at these points, so that the body member can be readily flexed between each of the compartments whereby the device can be made to conform to any irregular surface to which it is applied, as clearly shown in Figs. 3, 4, and 5 of the drawings. Such a construction permits the device to be folded upon itself, as shown, or curved to conform to any part of the human body to be treated, and this is one of the most important aspects of the invention. From this construction, it will be seen that the compartments 5 are permanently sealed and independent of each other.

The body member 2 is made from some suitable impervious material, such as relatively thin rubber sheeting, but is made preferably from some of the more recently developed plastic materials such as vinyl sheeting, polyvinyl, polyethylene, acetate, nylon, either film or sheet stock.

The body member is made preferably from two pieces of material 7 and 8 with one disposed on the other, as shown in Figs. 6 and 7, with the compartments 5 formed by securing the two pieces together at spaced-apart intervals to form the flat portions 6. The article is made, preferably, by first securing together the two longitudinal edges and one end of the bag, leaving one end open so as to provide a bag or envelope-like container. If the material is such that it is capable of being sealed electronically, then this method of sealing the edges is preferably used, but it will be understood that the edges may be secured together by heat sealing, molding, or cementing by some suitable adhesive. The bag is then partially filled through its open end with water or the liquid to be used, and this open end is then sealed so as to provide a pillow-like body member. The two thicknesses of material are then secured or sealed together at spaced-apart intervals, as at 9, preferably electronically if the material is capable of such treatment, so as to provide the series of compartments 5, wherein there is permanently sealed a portion of the water or liquid separated by the relatively wide, flat, and thin portions 6. The eyelets 4 are then placed in each end portion 3.

In Fig. 8, there is shown a slight modification of the combination ice and hot pack of my invention. In this construction, one of the sheets of material 10 from which the body member is formed is characterized in that it is relatively stiff, but at the same time flexible enough to hold its shape whereby a flat smooth surface is provided on one side of the article. The other piece of material 11 may be of the same material from which my preferred embodiment is made so as to be extremely flexible like a piece of sheeting. The series of permanently sealed and independent liquid-containing compartments 12 are preferably separated by relatively thin and wide, flat portions 13 with the two thicknesses of material secured or sealed together, as at 14, preferably electronically if the material is capable of such.

In the construction shown in Fig. 9, another

modification, the body member is provided with three walls, two outer walls and one inner wall, made preferably from three pieces of material 15, 16, and 17 disposed on one another. The three pieces are secured together, as at 18, as before, so as to provide a series of pairs of permanently sealed and independent liquid-containing compartments 19 separated from each other by relatively wide, flat, and thin portions 20. The compartments of each pair of compartments are separated from one another by the intermediate piece of material 16 which acts as an inner wall for each compartment.

In use, my improved article may be used either as a pad for applying heat or as an ice pack. If it is used as a heating pad, it is placed in boiling water, a steam unit, or other suitable heating device, until the liquid in the various compartments has reached the desired temperature. If the device is to be used as an ice pack, it is placed in a deep freeze unit, the freezing compartment of a domestic refrigerator, or any other suitable refrigerating unit, until the liquid in the compartments of the bag is frozen. Even if the liquid is frozen solid, it has been found that such freezing will not rupture or damage the bag and, due to its construction, it is extremely flexible due primarily to the wide flat portions 6. It is, of course, preferable that the bag be kept in the refrigerating unit at all times so that the bag is ready instantly for use.

While my device is adapted especially for therapeutic uses, it will be understood that it may be employed for heating or cooling any article, foods, etc.

My device is shown as being rectangular in shape, but it will be understood that it may be made in various shapes to satisfy the intended use. For example, it may be shaped to fit various parts of the body to which it is to be applied.

As a result of my invention, it will be seen that there is provided a combination ice and hot pack in which the liquid is permanently sealed thereby eliminating the inconvenience attendant in filling and refilling an ordinary hot water bottle or ice bag, the article being filled by the manufacturer and permanently sealed ready for use. It will also be seen that my article is extremely flexible between the compartments whereby it can be easily folded upon itself so as to occupy a minimum amount of space in the refrigerating unit, and so that it will conform readily to the part of the body to be treated.

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. A therapeutic device of the class described consisting of a body member formed of two elongated substantially rectangular superposed strips of a relatively thin and flexible plastic material, a quantity of liquid confined in the body member between said strips of material, said strips being welded together along their side and end edges and laterally at spaced-apart intervals throughout the length thereof so that the welds divide the body member into a plurality of independent compartments, each compartment being generally oval in cross section and containing a quantity of the fluid material sealed therein by the said side, end and intermediate welds inde-

pendent of the other compartments, each of the welds between the compartments being in the same planar plane and being relatively wide and flat so that each compartment is adapted to hinge at said welds relative to the adjacent compartment whereby the device may be adapted to conform to any curved or irregular surface to which it is applied.

2. A therapeutical device, as defined in claim 1, wherein each of said strips has end portions extending outwardly beyond the end compartments with said end portions being welded together in face-to-face relation and provided with means for securing the device in position when in use.

3. A therapeutical device, as defined in claim 1, wherein the superposed strips of flexible plastic material consist of a material selected from the group of materials consisting of vinyl, polyvinyl, polyethylene, acetate, and nylon.

4. A therapeutical device, as defined in claim 1, wherein there is provided at least two rows of

compartments extending longitudinally of the strips of material with the compartments being spaced apart from one another both laterally and longitudinally by welds therebetween.

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