Nov. 8, 1938. W. W. DE LANEY 2,136,043

HEATING DEVICE FOR THERAPEUTICAL PURPOSES

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Fig.1.

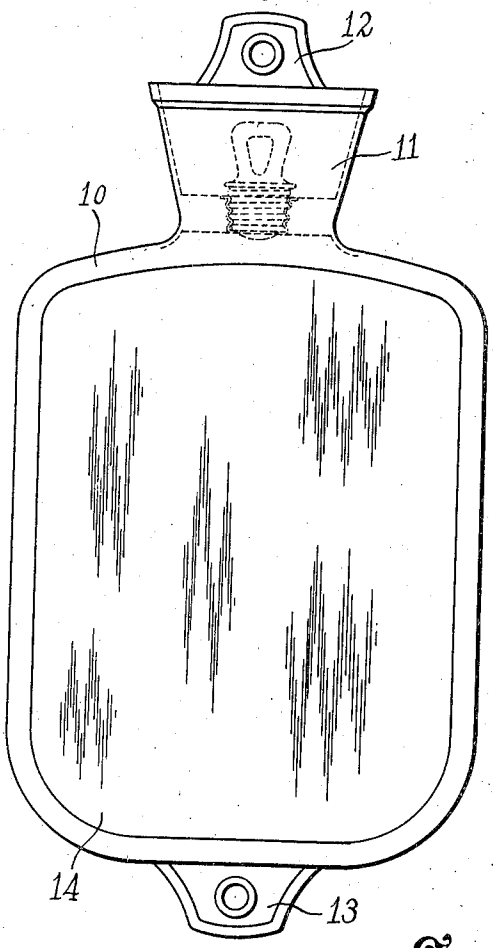


Fig.2.

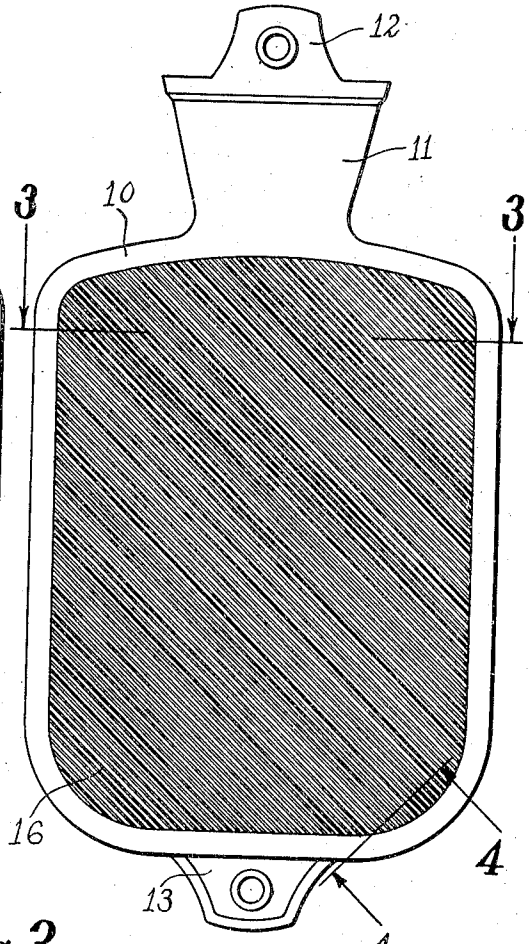


Fig.3.

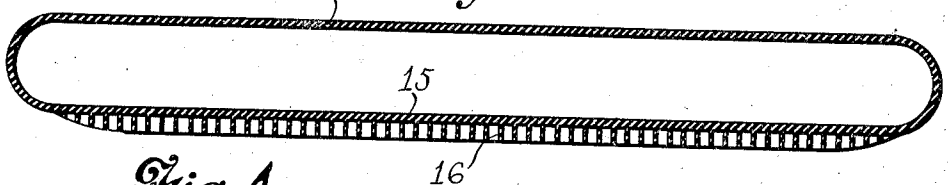
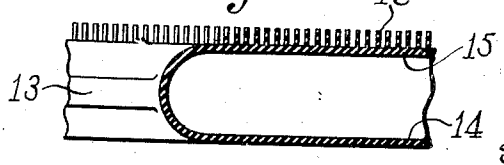


Fig.4.



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Fig. 5.

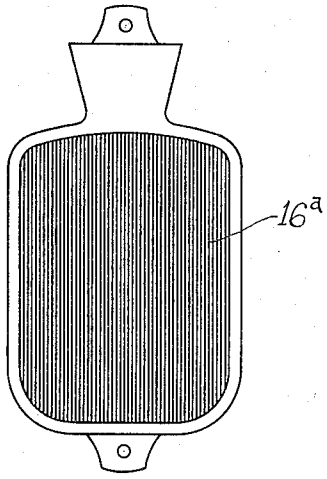


Fig. 6.

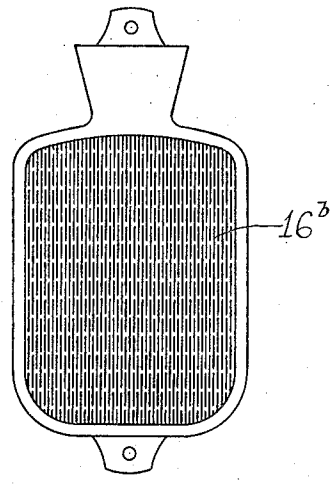


Fig. 7.

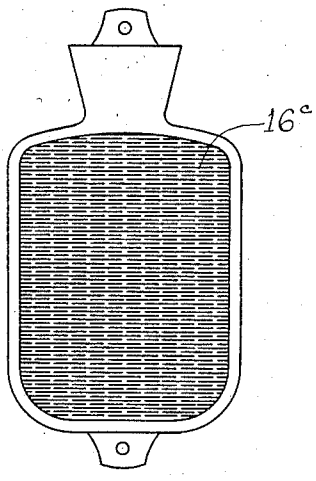
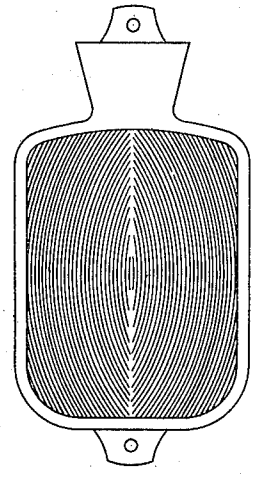


Fig. 8.



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HEATING DEVICE FOR THERAPEUTICAL PURPOSES

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Application December 8, 1936, Serial No. 114,744

1 Claim. (Cl. 150—2.1)

This invention relates to heating devices for therapeutical purposes such as hot water bottles or bags, and more particularly to a device of this character which is made of rubber or similar waterproof material, and is designed to contain a heating medium.

It is advantageous to provide a device of this character with insulating means, because when, for example, the ordinary bag is filled with very hot water, it is too hot to be applied directly to the flesh of the user, and it is an advantageous feature of such devices if they are so constructed that one of the outside walls may be provided with some kind of insulating means, while the other wall may not be provided with such means, so that a greater degree of heat or temperature may be delivered from one side than from the other.

It is contemplated by the present invention to provide a bag or other heating device having upon at least one face or wall a plurality of thin upstanding ribs disposed in spaced substantially parallel relation, these ribs preferably being formed integral with the wall of the bag upon which they are disposed, and being relatively thin whereby they are very flexible and capable of being turned or bent over by relatively slight pressure upon them.

These ribs are of sufficient height to space the wall of the bottle or bag from the surface with which the ribs contact, and provide a plurality of air channels between this surface and the wall of the bag. As shown, these air channels will be open at the ends through the space between the ribs where the latter terminate, so that a plurality of open-ended air channels or spaces will be provided between the wall of the bag and the surface upon which the bag is placed.

If desired, it will be understood that both walls or both faces of the bag may be provided with these upstanding ribs, but preferably one side of the bag will be left plain so that, if the full heat (or cold) is desired, the plain side of the bag may be used, while if a reduced temperature from the bag or bottle is desired, the ribbed side is placed next to the body of the user. It has been found, for example, that when using the device as a hot water bottle, a difference of temperature of from 10° to 15° is obtained by using the ribbed side of the bag from that obtained by using the plain side.

One object of the invention is the provision of a hot water bottle or similar article formed of rubber and provided upon at least one face with improved means for insulating the body of the article from the surface upon which it is laid.

Still another object of the invention is the provision of a hot water bottle made of rubber or like material provided upon at least one face with a plurality of thin upstanding ribs designed to contact with the surface upon which the bottle is laid and space the wall of the bottle from such surface.

Still another object of the invention is the provision of a hot water bottle made of rubber or some similar material provided upon at least one face thereof with a plurality of integrally formed thin upstanding ribs disposed in substantially parallel relation designed to space the wall of the bottle from the surface upon which it is laid, and providing open-ended air channels between the wall of the bottle and this surface so as to insulate the latter from the bottle.

To these and other ends the invention consists in the novel features and combinations of parts to be hereinafter described and claimed.

In the accompanying drawings:

Fig. 1 is a side elevational view of a hot water bottle embodying my improvements;

Fig. 2 is a similar view showing the reverse side of the bottle;

Fig. 3 is a sectional view on line 3—3 of Fig. 2, while

Fig. 4 is a fragmentary sectional view on line 4—4 of Fig. 2, and

Figs. 5 to 8 of the drawings show side elevational views of modified forms of my invention.

To illustrate a preferred embodiment of my invention, I have shown a hot water bottle 10 of the conventional shape and configuration, the bottle being preferably formed of rubber so as to be water-tight and relatively soft and flexible, as is usual with such devices made of this material. As shown, the body of the bottle is of a generally rectangular shape, being provided at its upper end with a filling neck 11, and having at both upper and lower ends tabs 12 and 13 by which the bottle may be hung when not in use.

As shown in Fig. 1, the outer face of one wall 14 of the bottle is plain or smooth, the bottle, as stated, being formed of rubber, and this face or surface having the usual characteristics of sheet rubber in devices of this character. The opposite wall 15 of the bottle is provided upon its outer face with a plurality of upstanding ribs 16. These ribs, it will be noted, are quite thin and are arranged in parallel spaced relation, thus providing between them air channels which are open at the ends adjacent the edges of the bottle

where the ribs terminate. These ribs will preferably also be of rubber and formed integrally with the wall 15 of the bottle, so that they are soft and flexible, and are of sufficient depth or height so that, while they will be bent or turned over to some extent by a slight pressure, they will nevertheless maintain the wall 15 of the bottle in spaced relation to any surface upon which the bottle is laid. That is, when the bottle is filled with water and laid upon a surface, the pressure due to the weight of the bottle and contents will cause the ribs 16 to be bent over to some extent, but not sufficiently to permit the wall of the bottle to contact directly with the surface upon which it is laid. Thus there will be formed between the wall 15 and such surface a plurality of open-ended air channels to insulate the wall of the bottle from the surface.

Thus when the device is used as a hot water bottle, the degree of temperature delivered from the ribbed wall of the bottle will be from 10° to 15° less than that delivered from the plain face 14 in use. Either face of the bottle as desired may be employed, that is, placed next to the user, for example, or the two faces of the bottle may be used alternately, the ribbed side employed when the bottle is first filled with hot water and the plain side employed after the contents of the bottle have cooled to some extent. It will also be found that the soft flexible upstanding ribs will be quite comfortable when placed next to the flesh of the user, as these ribs will be turned or bent over by the weight of the bottle and will not seem sharp or irritating.

In Fig. 5 of the drawings I have shown in elevation a hot water bottle wherein the ribs 16a extend in a vertical direction instead of diagonally, as shown in Fig. 2. In Fig. 6 of the drawings the ribs 16b are also vertically extending but are discontinuous ribs; that is, in this case each rib may be described as a broken line. In this case substantially the same effect is produced as when the ribs are continuous, except that additional provision is made for circulation of air. In Fig. 7 of the drawings the ribs 16c are shown as discontinuous, transversely extending ribs, while in Fig. 8 of the drawings the face of the bottle is covered with arcuate or curved ribs. In each case the ribs are substantially parallel and are spaced from each other so that an air channel is provided between them, and also in each case the ribs are relatively long and thin or narrow, so that they will not constitute sharp, stiff projecting surfaces which would be uncomfortable to the user. It will, of course, be understood that in any of these forms, as in the forms shown in Figs. 1 to 4 of the drawings, the ribs may be provided upon both sides of the bag or bottle if desired.

While I have shown and described some preferred embodiments of my invention, it will be understood that it is not to be limited to all of the details shown, but is capable of modification and variation within the spirit of the invention and within the scope of the appended claim. It will, of course be understood that the heating device need not necessarily be in the form of a bottle or bag, and that the nature of the heating medium contained within the rubber body is also subject to variation.

What I claim is:

A heating device for therapeutical purposes, comprising a rubber body containing a heating medium, said body having upon a surface thereof a multiplicity of outstanding elastic fins, said fins being in parallel relation and thin and flexible so as to carry off heat by radiation and flex to one side or the other under light pressure as when the device is laid against the user's body, said fins being closely spaced to provide narrow parallel air passages therebetween and increase the radiation and at the same time space the body of the device effectively from the body of the user.

WALLACE W. DE LANEY.