Dec. 11, 1951 H. S. ATHERTON 2,577,945

PLASTER OR BANDAGE FOR SKIN APPLICATION

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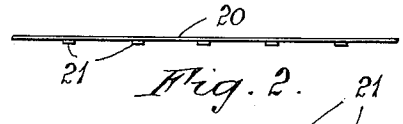

Fig. 2.

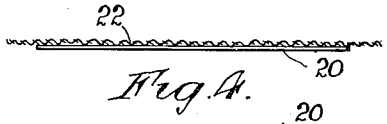

Fig. 4.

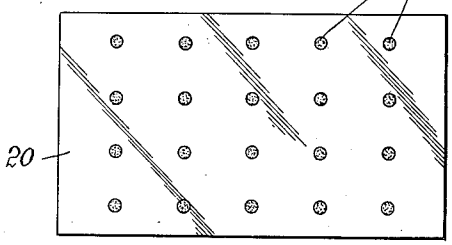

Fig. 1.

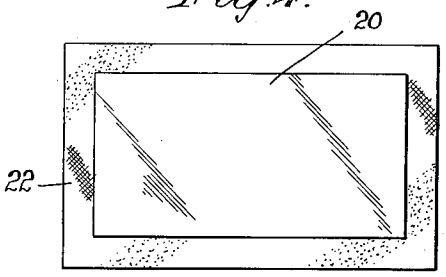

Fig. 3.

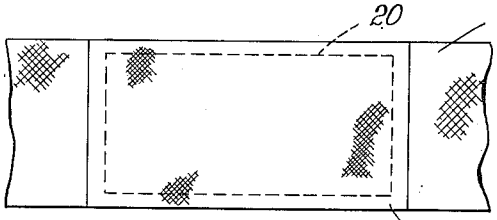

Fig. 9.

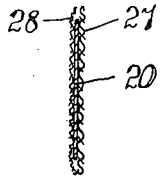

Fig. 10.

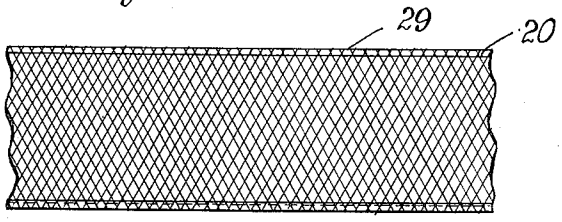

Fig. 11.

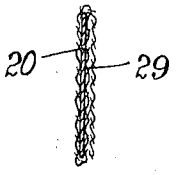

Fig. 12.

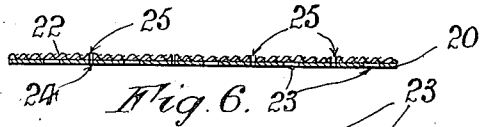

Fig. 6.

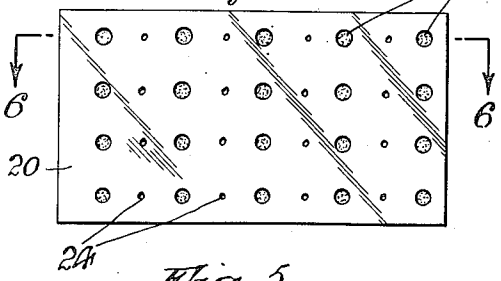

Fig. 5.

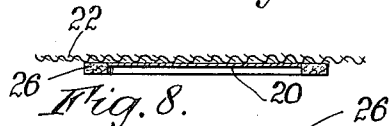

Fig. 8.

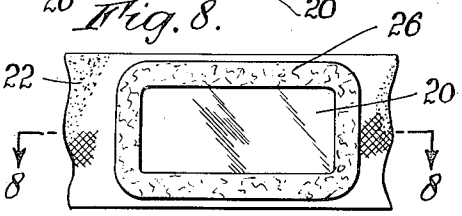

Fig. 7.

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PLASTER OR BANDAGE FOR SKIN APPLICATION

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5 Claims. (Cl. 128—156)

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This invention relates to tapes, bandages, plasters, dressings and similar devices for positioning over or securing to the body surface or skin of a person for protection or treatment such as of a medical nature; for instance, treatment in the nature of localized hydrotherapy or thermotherapy.

The invention has for its object to provide in such a device, and as a feature thereof, means for conserving and localizing heat or other body radiations within the area to which the tape, bandage, plaster, or such device is applied, as a means of producing beneficial results merely as a result of such heat or moisture conservation, or as the effect of such conservation in modifying or accelerating the action of medication or treatment preceding or combined with its use.

Thus the improved device may be utilized not only for the treatment of actual skin surface but in many cases for tissues underlying the surface and may also be quite beneficial in promoting localized dilation of blood vessels in a manner very desirable in certain types of therapy.

More particularly, the invention contemplates the provision, as a characteristic of or in association with such a device, of a reflective surface which may or may not be ventilated in accordance with the desirability dictated by the particular circumstances of its use; but, more particularly, the said invention contemplates the provision in such a device of a highly reflective surface area (such as of a metallic nature) for positioning in opposition to the body surface or skin of a person.

Still further, the said invention contemplates the provision, where necessary or desirable, of means for spacing the reflective surface of the device from the body surface or skin of the wearer, either to provide an enclosed space between the said surfaces or to provide for accommodation of medicated dressings or a protective layer of material.

The invention is further capable of adaptation in many forms to meet varying requirements whereby the said reflective surface may be in itself provided with an adhesive, or whereby it may be supported or mounted on an adhesive tape, bandage, or plaster. Or the reflective surface may be in the form of a reflective material (such as metallic foil) held in position by, attached to, or contained within a gauze or similar bandage which may be secured to the body surface of the patient in any suitable manner.

Still further objects or advantages additional or subsidiary to the aforesaid objects, or resulting from the construction or operation of the invention as it may be carried into effect, will become apparent as the said invention is hereinafter further disclosed.

As examples of different methods in which the

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said invention may be carried into effect, attention is directed to the accompanying drawing, wherein:

Figure 1 is a plan of the underside of a sample form of the device;

Figure 2 is an edge elevation of the same;

Figure 3 is a plan of the underside of a second form of the device;

Figure 4 is an edge elevation of said second form;

Figure 5 is a plan of the underside of a third form of the device;

Figure 6 is a section of such third form taken on a plane indicated by the line 6—6 in Figure 5;

Figure 7 is a plan of the underside of a fourth form of the device;

Figure 8 is a sectional view of the same taken on a plane indicated by the line 8—8 in Figure 7;

Figure 9 is a plan of the underside of a fifth form of the device;

Figure 10 is a transverse section of this fifth form;

Figure 11 is a plan of a portion of a gauze bandage embodying a sixth form of the said invention; and

Figure 12 is a transverse section of said bandage.

In its broad aspect the invention consists in provision or the positioning of a reflective material (or of material provided with a reflective surface) over a desired body area in such manner and situation as will permit such surface to reflect heat or other rays emanating from the underlying body surface, or from medication or treatment-material applied in or upon such body surface, back into the medicated or treatment-material or into the skin or surface tissues, as the case may be, with the object of causing such reflected heat or other rays to assist in the promoting of healing or other localized beneficial action.

In the example in Figures 1 and 2, a simple sheet of tin foil, aluminum foil, or similar material 20 is shown which may be simply laid upon and suitably held in position over the area being treated, this particular example showing the tin foil 20 as having a plurality of small areas of adhesive 21 provided on its face. This adhesive might well be of a well-known pressure-sensitive nature.

In the example shown in Figures 3 and 4, the reflective tin foil or other layer 20 is shown as being simply attached to the adhesive surface of an adhesive plaster 22 with the surface of the plaster extending beyond the edges of the reflective sheet 20 so that these edges may adhere to the body surface to which the improved plaster is applied; and, in Figures 5 and 6, the reflective sheet 20 is similarly backed by an adhesive plaster 22, but in this case the tin foil or other

material forming the reflective sheet is perforated, as at **23**, to expose areas of the adhesive of the plaster **22** so that these exposed areas may adhere to the body surface to hold the reflective member in position thereon. In this example both the reflective member **20** and the adhesive backing plaster **22** are shown as being perforated as at **24** and **25** to permit ventilation should this be desirable, as will be well understood.

Where it is desired to definitely space the reflective material from the surface to which the bandage or plaster is applied, I may provide a marginal or other raised wall structure **26** about the said material **20**, as shown in Figures 7 and 8, and this wall structure may be continuous or otherwise according to desirability. The said Figures 7 and 8 show also the reflective material **20** and the wall structure **26** as being both secured to the adhesive face of an adhesive tape or plaster **22** in the manner which will be obvious.

The reflective material may be further carried by or within a gauze or similar flexible bandage or wrapping, and in Figures 9 and 10 such a gauze bandage **27** is shown provided with a second layer of gauze or similar material **28** with the reflective material **22** positioned between the two layers **27** and **28**; and, in Figures 11 and 12, a strip of the reflective material **22** is simply wrapped within the folds of an overlapped length of gauze or bandage material.

It will be obvious that the layer of reflective material may be positioned directly over the skin of the body surface of a person or over treatment-material, which may be held in or on the body surface or incorporated in a suitable dressing, with the idea that heat or other rays projecting outwardly of the body surface beneath the reflective material will be reflected back from such reflective material to such surface and therefore not lost to the extent which might otherwise be the case where such a reflective material is not present.

It will be further apparent that, while I prefer to use metallic foil as a cover material for the purposes in mind, the reflective surface may be in some cases printed directly on the tape or bandage material or applied by electrical deposition thereon as well as in other ways generally available.

While it is recognized that practically all materials are somewhat reflective (other than those which are black and of a strictly wave-absorbing nature), it is to be understood that herein, and in the claims, the terms "reflective" and "reflective material" are intended to be read as relating to surfaces of a substantially mirror-like nature wherein at least the greater portion of heat or similar waves is thrown back instead of being absorbed. The reflective medium may be of laminate, pellicle, or film form either of a self-supporting thickness or of a nature or thickness requiring additional support or reinforcement, as will become apparent, and the use of the term "film" in the claims is intended to be read as including such forms.

I prefer to utilize the tin foil or reflective medium backed by a relatively non-heat-conducting backing (such as of woven or similar material as in Figures 3–12, inclusive, of the drawings) in order to reduce heat loss to the atmosphere from the outer surface of the said foil or reflective medium; and I also prefer that the foil or reflective medium be actually attached

to or held in position on such backing for reasons of convenience in packaging and handling. Where such a backing is not so provided in combination with a foil or reflective medium, as in the example in Figures 1 and 2, a bandage or backing is preferably applied thereover after the foil or medium is positioned over the area being treated, as will be well understood, and the back of the foil so insulated against outward heat loss. Thus the conductivity of the medium, should it be in the nature of a metallic foil, would not offset or materially reduce the efficiency of its ray-reflecting function.

This invention may be developed within the scope of the following claims without departing from the essential features of the said invention, and it is desired that the specification and drawing be read as being merely illustrative of a practical embodiment of the same and not in a strictly limiting sense.

What I claim is:

1. A therapeutic device of the class described, comprising a film of heat-reflective material adapted to be positioned over the body surface of a person, and a raised wall structure about the margins of said material to space said material from said body surface.

2. A therapeutic device of the class described, comprising a metallic film of heat-reflective material adapted to be positioned over the body surface of a person, and a raised wall structure about the margins of said material to space said material from said body surface.

3. A therapeutic device of the class described, comprising a film of heat-reflective material adapted to be positioned over the body surface of a person, adhesive means for effecting attachment of said film to the said body surface, and a raised wall structure about the margins of said material to space said material from said body surface.

4. A therapeutic device of the class described, comprising a metallic film of heat-reflective material adapted to be positioned over the body surface of a person, adhesive means for effecting attachment of said film to said body. and a raised wall structure about the margins of said material to space said material from said body surface.

5. A therapeutic device of the class described, comprising a film of heat-reflective material adapted to be positioned over the body surface of a person, heat-insulating backing material for said film, and a raised wall structure about the margins of said material to space said material from said body surface.

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