

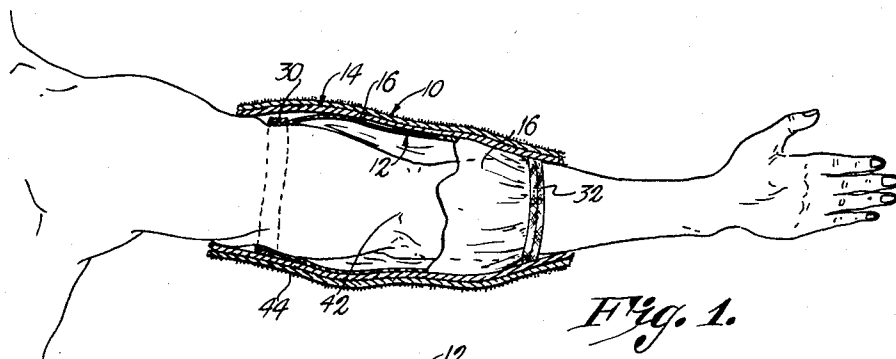
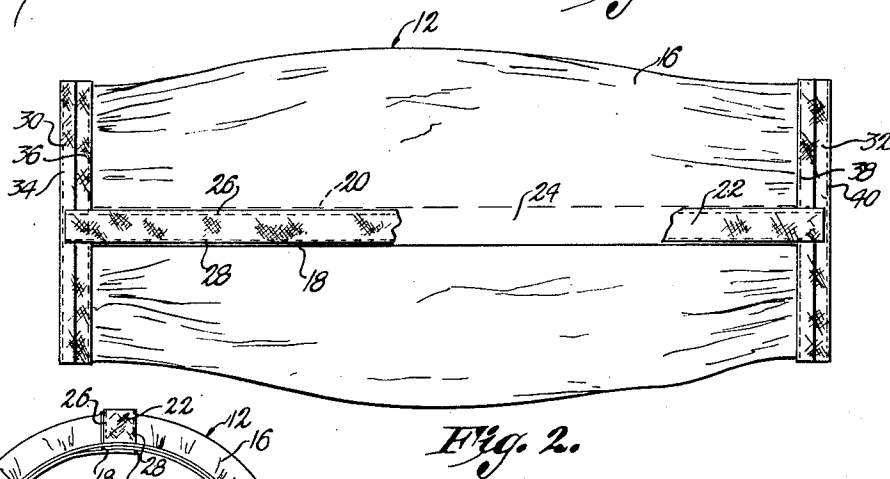
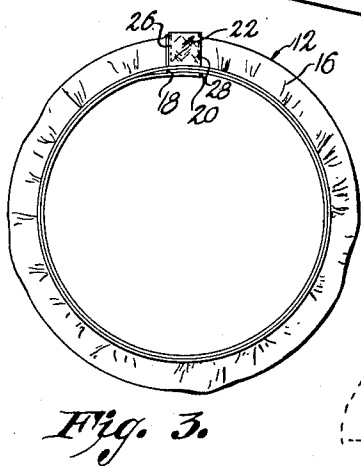
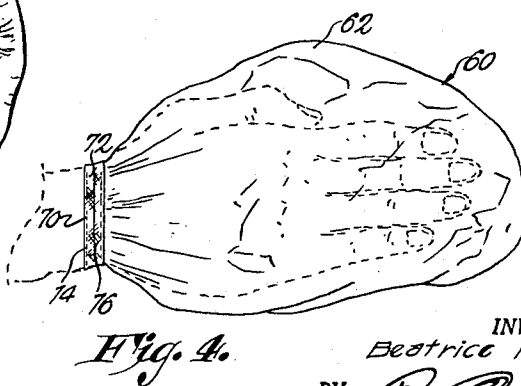
Nov. 10, 1959

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2,911,974

THERAPEUTIC METHOD AND APPARATUS

Filed Oct. 22, 1956



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2,911,974

THERAPEUTIC METHOD AND APPARATUS

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Application October 22, 1956, Serial No. 617,423

1 Claim. (Cl. 128—293)

This invention relates to the field of therapeutic treatment of human ailments and, more particularly, to an improved method and apparatus for use in treating afflicted body parts suffering from ailments such as, for example, arthritis, neuritis, phlebitis, sprains, muscular tension and the like, which respond favorably to the localized application of heat and moisture.

It has been found that the inconvenience and impracticability of previously available means and methods of applying localized heat and moisture to afflicted parts over extended periods of time has been responsible for the failure in many instances of this basically sound therapeutic approach. Particularly in cases of aggravated affliction by the types of ailment in question, the usual treating periods have been so limited in duration as to be almost entirely ineffective. The reason for such situation has been that with the majority of previously available means and methods it has been necessary that the treatment take place in the office or under the supervision of professionally trained persons, while with other means and methods their very nature either confines the patient to a substantially immobile condition in a certain location, or otherwise precludes the practical application of the treatment during extended periods under circumstances where the patient may not be directing his full attention to the treatment itself.

Accordingly, it is the primary object of this invention to provide an improved method and means by which treatments involving the use of localized heat and moisture to afflicted body parts may be conveniently carried out over extended periods such as when the patient is asleep at night and during which the patient may move about and in any event will not find it necessary to concentrate his attention upon the therapeutic treatment which is automatically progressing.

Another important object of this invention is to provide such an improved therapeutic method and apparatus involving the use of a covering and confining element for the afflicted body part adapted to retain therewithin and utilize as the heat and moisture for accomplishing the desired therapeutic effects that heat and moisture accumulated within the confining element from emanations of such heat and moisture from the afflicted body part itself.

Another important object of this invention is to provide a flexible, moisture impervious plastic tube or bag adapted to receive the afflicted body part therewithin and having elastic means at the open extremities thereof for effecting a substantial seal between the element and a portion of the human body adjacent the afflicted part thereof, it also being an object of the invention to further provide thermally insulative means for disposition in covering relationship to the element to improve the thermal insulation of the afflicted body part and interior of the element from the ambient surroundings.

Other important objects of the invention will be made clear or become apparent as the following description of the method and apparatus contemplated by the invention are explained.

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In the accompanying drawing:

Figure 1 is a fragmentary, perspective view of a portion of a human body showing the application of the method and one embodiment of apparatus contemplated by this invention to the treatment of an afflicted body part in the general area of the elbow of the patient, the apparatus contemplated by the invention being shown partially in elevation and partially in cross section for clarity of illustration;

Fig. 2 is a side elevational view of the inner bag or confining element shown in Figure 1, illustrating the detail thereof;

Fig. 3 is an elevational view of the embodiment of inner bag or confining element shown in Figs. 1 and 2 taken from the direction of the open end thereof; and

Fig. 4 is a fragmentary, perspective view of a human hand and arm portion showing a modified embodiment of inner bag or confining element applied thereto.

It has been found in practice that the body heat and perspirational moisture naturally emanating from an afflicted body part and portions of the human body adjacent thereto, are at least equally effective for use in the therapeutic treatment of such afflicted body part by localized application of heat and moisture thereto as any heat or moisture which can be produced or applied from artificial sources. This has been found to be particularly true since the utilization of artificial heat or moisture sources necessarily require the provision of often complex equipment to serve as such sources, further normally either localizes or immobilizes the patient during treatment in order that he may remain properly disposed relative to such artificial sources, and additionally often limits the maximum period of treatment either by virtue of the inherent physiological effects of subjection to the particular sources utilized or because of the gross inconvenience or impracticability of remaining immobilized or at the location of the sources for any extended period.

Accordingly, the method of localized heat and moisture application contemplated and taught by this invention, involves the confining of the afflicted body part within a limited space which is both substantially sealed against the escape of moisture and substantially thermally isolated to secure an accumulation of heat within such isolated space.

By this method, body heat radiating from the afflicted body part itself and perspiration emanating from such body part, provide the required heat and moisture to be used in treating the body part, the local application to the body part being attained through limiting the space in which such heat and moisture are accumulated to an area surrounding or in direct contact with the afflicted body part. Although the duration of the treatment contemplated by the method will naturally vary somewhat with the nature and seriousness of the ailment, it has been found, in general, that prolongation of the period of treatment for a number of hours normally increases its effectiveness. It is, therefore, a currently preferred feature of the method, which is rendered practical by virtue of the nature of the apparatus hereinafter described, that the treatment shall last for a continuous period of several hours, such as during the time that the patient is asleep at night.

Referring now to the drawing which shows illustrative embodiments of apparatus by which the method may best be practiced, the nature of the method itself will become more clear from the explanation of such apparatus.

Broadly, the apparatus of which a first illustrative embodiment is generally designated 10 broadly includes an inner, flexible bag or confining element 12 and an outer, flexible, thermally insulating bag or member 14 disposed in covering relationship to the element 12. The element 12 is moisture impervious and may be formed of any suit-

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able, thin, waterproof material of the required strength characteristics, a currently preferred material being polyethylene plastic. The element 12, as shown for illustrative purposes, is elongated and tubular in form in order to adapt the same particularly for use in treating an intermediate limb portion of the human body such as an elbow or knee or the adjacent areas.

The element 12 may be conveniently formed from an initially flat sheet 16 of polyethylene plastic having its longitudinal edges 18 and 20 brought together and overlapped, with an elongated strip of bias tape or the like 22 preferably being extended in covering relationship over the zone of overlapping 24, the connection being then accomplished by lines of stitching as at 26 and 28. Alternately, the edges 18 and 20 could be joined by any suitable thermal sealing technique, many of which are known to the art of plastics manufacture. At each of the open ends of the tubular element 12 is provided a circumscribing elastic strip designated 30 and 32 respectively, which may be, for example, in the form commonly used in garters or the like. Elastic strips 30 and 32 are secured to the sheet 16 from which element 12 is formed by lines of stitching as at 34, 36, 38 and 40.

Obviously, the element 12 may be constructed in various sizes and shapes as required to best adapt the same for the particular body part to be treated.

As shown in Figure 1, the element 12 is simply slipped over the limb to be treated with the elasticized ends thereof disposed on opposite sides of the afflicted body part 42. By virtue of the nature of the sheet material 16 from which the element 12 is made, and the substantial seal effected at the ends of the element 12 by means of the elastic strips 30 and 32, it will be apparent that both heat and moisture emanating from the body part 42 and adjacent portions of the body within the element 12, will be confined, accumulated and maintained in contact with the afflicted part 42.

The outer, thermally insulating covering or member 14 may not, in some cases, have to be used at all. Where a greater preservation of the accumulated body heat than can be accomplished with the element 12 alone is desired, however, the member 14 may be simply wrapped around the element 12 and may consist, for example, of a sheet of toweling, wool or any other material having suitable thermal insulating qualities.

As illustrated, the member 14 comprises an elongated strip 44 of such material wrapped upon the element 12 in a plurality of layers. If desired, the member 14 could obviously be formed as a sleeve or the like having elastic means (not shown) adjacent its ends for retaining the member 14 in the desired location or other conventional means could be provided for retaining either a sleeve-like or wrapped member 14 in operative position.

In order to illustrate a modified form of confining element, Fig. 4 shows an element generally designated 60, which is particularly adapted for use in treating a limb extremity such as a hand or foot. The element 60 may correspond generally in construction to the element 12 and be formed of a sheet 62 of flexible polyethylene plastic or the like, formed into the configuration of a bag. Such element 60 is thus bag-like in form and provided with a single open extremity as at 70. Surrounding the open end 70 there is provided an elastic strip or tape 72 which is sewn to the sheet 62 as at 74 and 76.

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In use, the element 60 would be simply slipped upon a hand or foot in covering relationship thereto with the elastic tape 72 effecting a substantial seal at the wrist or ankle. Obviously, a suitable outer, thermally insulating covering (not shown) can be used with the element 60 in the same manner as described for the element 12.

It will now be apparent that not only is the method contemplated by this invention ideally adapted for accomplishing the therapeutic treatment of afflicted parts by localized application of self-generated heat and moisture, but that the apparatus contemplated by the invention is ideally suited for use in the practice of such method, it being observed that such apparatus is not only effective, simple and inexpensive, but is of nature permitting its use to effect the treatment during long periods and without conscious attention from the patient or any attending professional personnel.

It will be clear to those skilled in the art that both the method and apparatus of the invention are subject to certain minor changes, variations and modifications without departing from the true spirit or intention of the invention. For example, by following the general teachings of this invention, it will be apparent that the method may be applied and apparatus provided for confining self-generated body heat and moisture to virtually any other part of the human body, those chosen above being merely illustrative.

Accordingly, it is to be understood that the invention shall be deemed limited only by the scope of the claim that follows.

Having thus described the invention what is claimed as new and desired to be secured by Letters Patent is:

Apparatus for us in treating ailments of parts of the human body which respond to localized application of heat and moisture comprising a hollow, flexible, inelastic, inwardly and outwardly smooth surfaced, imperforate element of synthetic plastic material having at least one open extremity and adapted to receive an afflicted body part therewithin, the major portion of the element being of somewhat greater dimensions than said body part whereby said portion of the element is normally disposed in spaced relationship to said body part whereby the element does not impede circulation of body fluids through said body part; elastic means on each open end of the element and adapted for effecting a substantial moisture and heat retaining seal between each open extremity of the element and a portion of the human body adjacent said afflicted part thereof; and an elongated, thermally insulative member wrapped about said element to improve thermal isolation of the interior of the element from ambient conditions.

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