June 4, 1929. E. S. WOLFE ET AL 1,715,486

FACE HEATING PAD

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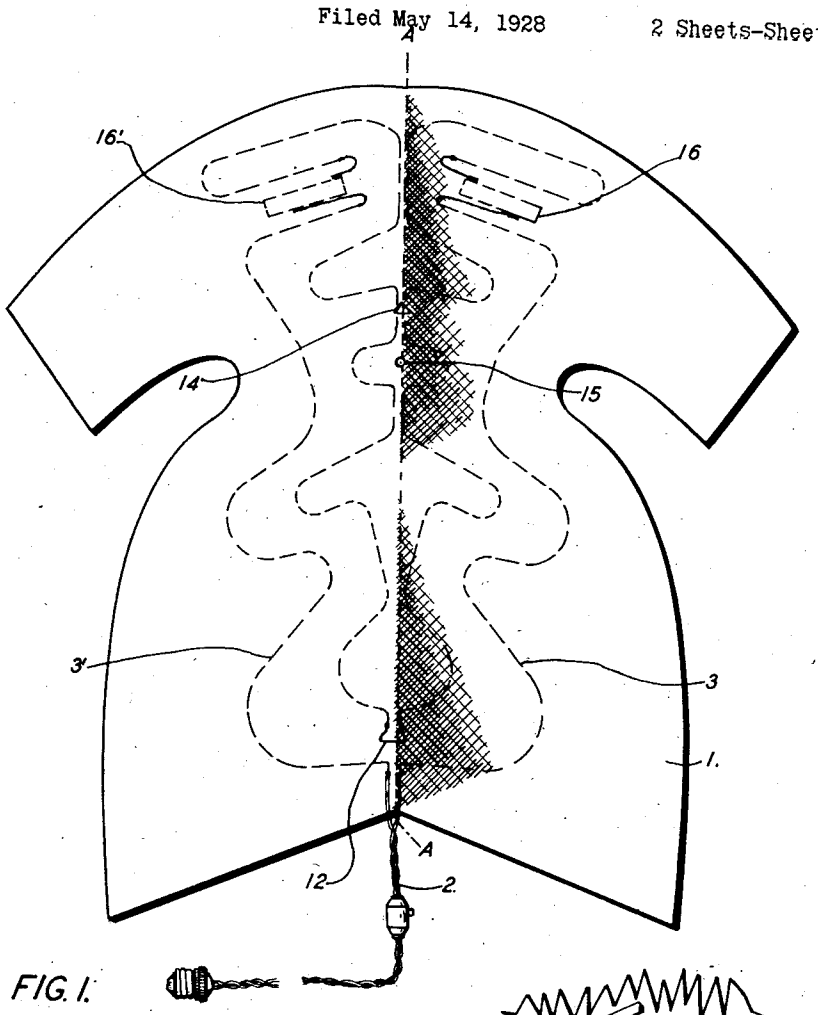


FIG. 1.

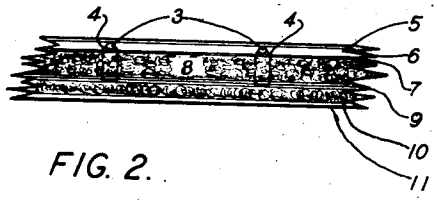


FIG. 2.

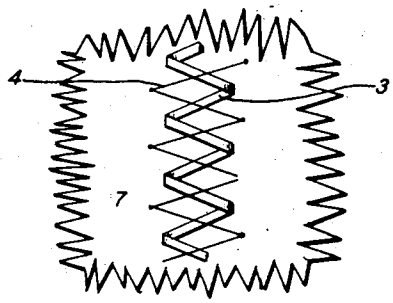


FIG. 3.

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FACE HEATING PAD

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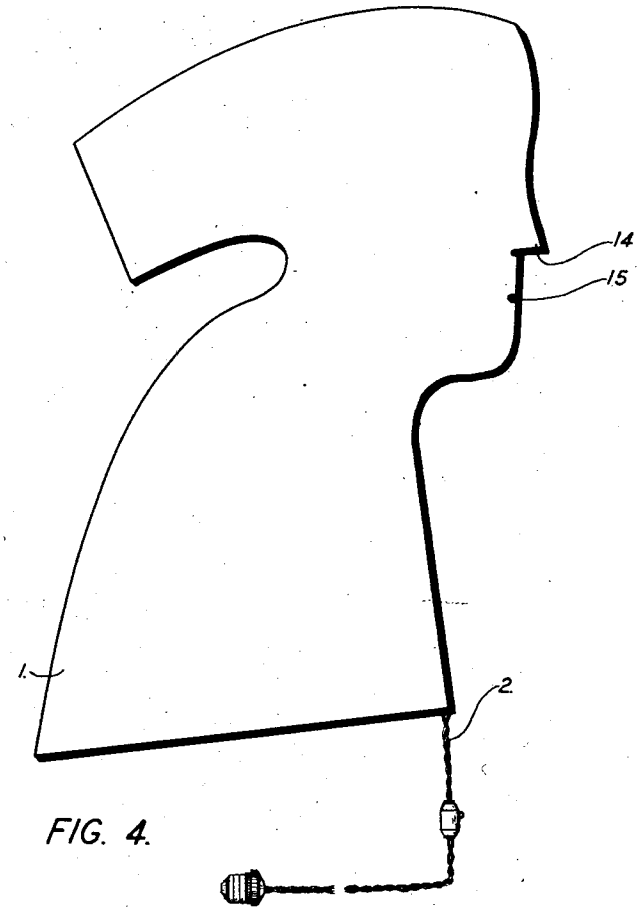


FIG. 4.

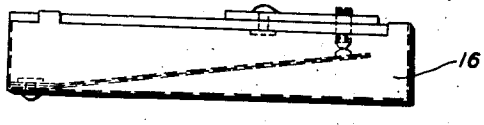


FIG. 5.

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UNITED STATES PATENT OFFICE.

EDWONE SEARLE WOLFE AND SIDNEY M. LAUTON, OF LOS ANGELES, CALIFORNIA.

FACE-HEATING PAD.

Application filed May 14, 1928. Serial No. 277,497.

Our invention relates to the construction of a face heating pad which conforms to the contour of the human face, neck and chest and contains an electrical resistance heating element together with sufficient insulating material, both being so disposed that the heat generated by the element is conveyed to the body of the subject on whom the device is used, and is prevented from otherwise escaping in any appreciable degree either by conduction, convection, or radiation.

A further object of our invention is to provide a heating element of a character such that the normal house current of 110 volts will produce a temperature on the inner surface of the pad of approximately 140 degrees Fahrenheit when the same is in contact with the face and skin of the subject being treated. It is intended that the temperature be balanced by the heat generated in the element, on the one hand, and on the other, by the absorption of the heat by the skin of the subject.

A further object of our invention is to provide the pad with exterior surfaces of material which will be sanitary in use, and not subject to deterioration by reason of heat or water vapors generated in use, and incident thereto.

Referring to the accompanying drawings, Fig. 1 is a plan view of the pad, looking at the concave side as it appears spread out flat; Fig. 2 is a fractional cross sectional view of the layer construction of the pad; Fig. 3 is a fractional portion of the pad showing the layer on which the heating element is sewed; the two inner layers being removed. Fig. 4 shows the entire pad folded along the middle crease indicated by the shading in Fig. 1. Fig. 5 is a detailed view of one of the thermostats installed.

Similar numerals refer to similar parts throughout the several views.

In Fig. 1 the general contour of the complete pad 1, is shown. The electrical connection cord and switch are marked "2". The course of the heating element is indicated by the dotted line 3 and is designed to furnish heat where it is needed most in treating a patient providing at the same time a separation of the portions of the element carrying opposite potentials so as to minimize risk of short circuit in case of derangement of the element.

The pad has, in general a concave-convex relief, being concave as indicated by the shading Fig. 1 and folding upward along the crease indicated by the line A—A. This fold is made and maintained by the cut of the cloth and the construction of the element.

The sides of the pad are sufficiently flexible to conform to the contour of the face, neck and chest of any patient to whom it may be applied, but not so flexible as to cause undue wear or bending on the element 3 and 3′. It will be noticed that nowhere does the element cross the fold except at the junction marked 12. This is a junction composed of a short piece of flexible copper wire of a size sufficient so that it does not heat nor lose its flexible qualities. Breathing by the patient is provided by the nose hole 14 and mouth hole 15. The side contour of the pad as folded along A—A is more clearly illustrated by Figure 4.

The pad is composed of 7 layers of material stitched together at the edges and around the openings 14 and 15. Referring to Fig. 2, the cross section of these layers is shown; 5 represents the inner layer, going next to the face, it is of rubberized silk; 6 is a layer of canton flannel; 7 is unbleached muslin to which the element 3 is attached by the stitching 4, which goes through to the layer 9 which is also unbleached muslin. 8 is a layer of cotton batting; 10 cotton bathrobe material and the outside layer 11 is of rubberized kapok.

The elements used in the preferred form herein described is of number 32 B & S gauge nichrome resistance wire, 22 feet in length and wound into a helical coil approximately .04 of an inch in diameter. This is held in place as shown in Figs. 2 and 3, to the layer of muslin 7 by the zig-zag cross stitching 4, which extends thru to the layer 9.

Thermostats are inserted in the circuits at 16 and 16′ Fig. 1. These are set to break the current at 150° Fahrenheit, but are more safety devices than temperature regulators. They are of conventional form as shown in Fig. 5 and their operation and connection may be readily understood by any one familiar with the art.

We have found that when used on the common standard house lighting current of 110 volts the element above specified when the pad is applied to a patient maintains a heat of approximately 140° Fahrenheit. This temperature is maintained by the heat

generated by the element in one hand and its absorption by the skin of the patient on the other hand. The layer next to the skin being practically moisture proof may be maintained in a sanitary condition and the element likewise protected from steam and vapor. The heavier insulation toward the outer side of the pad tends to keep the heat from escaping, thus permitting the most of it as generated to be absorbed by the patient's skin thru the comparatively thin layers 5 and 6.

Having fully described our invention, we claim:

1. In a device of the kind disclosed, a multi-layer pad body, shaped to conform to the contour of the human face, neck and chest, openings therein permitting respiration, a longitudinal fold therein, helically coiled electrical heating elements contained therein disposed on either side of said longitudinal fold, flexible electrical coupling between said heating elements, means for controlling the temperature of said heating elements, means for connecting to a source of electrical energy, substantially as described.

2. In a device of the kind disclosed, a multi-layer pad body, shaped to conform to the contour of the human face, neck and chest, openings therein to permit respiration, an outer heat and vapor resistant covering thereon, a longitudinal fold therein substantially along the middle of said pad, helically coiled electrically heating elements therein disposed on either side of said longitudinal fold, flexible electrical coupling between said elements, means controlling the temperature of said element to a predetermined maximum, means of electrical connecting of said element to a source of electrical energy, substantially as described.

3. In a device of the kind disclosed, a pliable multi-layer pad body shaped to conform to the contour of the human face, neck, and chest, having a pliable heat and vapor resistant covering, openings therein to permit respiration, an helically coiled electrical heating element therein, means for attachment of said element to an intermediate layer of said pad, means for controlling the heat generated to a predetermined temperature, means of electrical connection of said element to a source of electrical energy, substantially as described.

In witness whereof, we have hereunto affixed our signatures this 5th day of May, 1928.

E. SEARLE WOLFE.
SIDNEY M. LAUTON.