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C. E. McDONALD
ELECTRIC HEATING PAD
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2,032,294

Fig. 1.

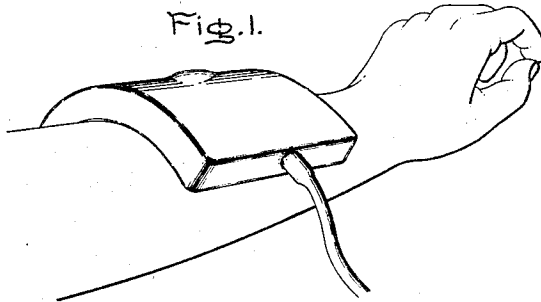


Fig. 2.

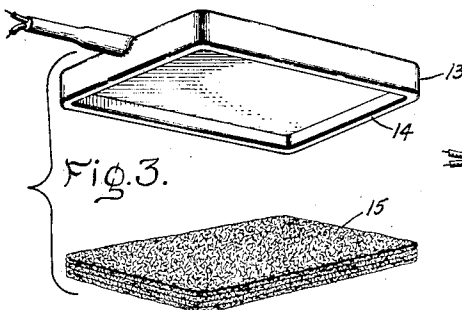
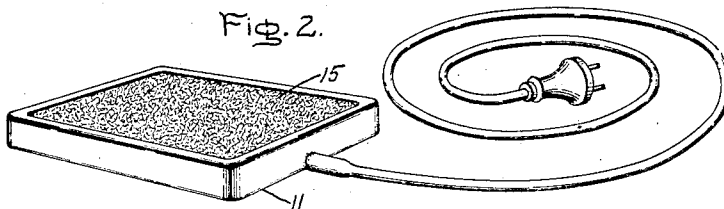


Fig. 4.

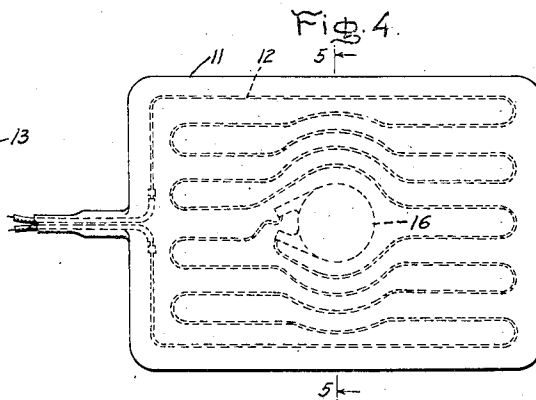


Fig. 5.

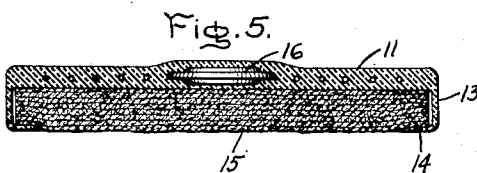


Fig. 7.

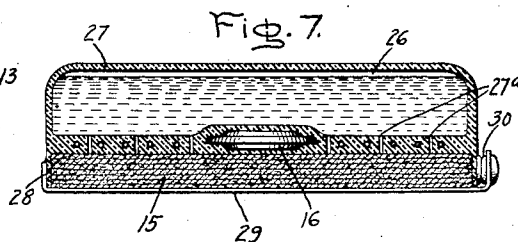
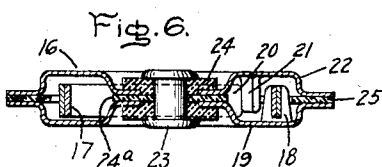


Fig. 6.



Inventor:
Chester E. McDonald,
by *Harry E. Dunham*
His Attorney.

UNITED STATES PATENT OFFICE

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ELECTRIC HEATING PAD

Chester E. McDonald, Schenectady, N. Y., assignor to General Electric Company, a corporation of New York

Application October 11, 1933, Serial No. 693,118

3 Claims. (Cl. 219-46)

My invention relates to electric heating pads and has for its object a pad provided with a wet pack.

It is often desirable in the treatment of various ailments to apply a wet pack to the body. It is furthermore desirable to maintain the pack heated continuously without periodic removal for resaturation in hot water. The conventional types of heating pads do not lend themselves readily for this purpose, since many of them are covered with fabric and hence must be kept dry, and the rubber type of pad, while impervious to moisture, has the disadvantage common to both types of pads that the heating pad and hot pack are difficult to hold together in the desired position.

In carrying out my invention in one form, I provide a heating pad in which the resistance heating conductors are embedded in rubber or covered with other water-proof material so that the pad is impervious to moisture, together with means for detachably securing a hot pack of fabric or other fibrous material to the pad. In a preferred form of my invention I provide a rubber flange around the periphery of the pad for securing the pack thereto.

The hot pack may thus be conveniently used with the pad and maintained saturated with a suitable liquid such as boric acid. It is also an object of my invention to provide a chamber on the pad for supplying liquid to the hot pack so as to maintain it saturated during use when applied to the body.

For a more complete understanding of my invention reference should be had to the accompanying drawing in which Fig. 1 is a perspective view showing a heating pad embodying my invention as applied to the arm; Fig. 2 is a perspective view showing the heating pad with the hot pack uppermost; Fig. 3 is a perspective view showing the hot pack disassembled from the heating pad; Fig. 4 is a plan view of the heating pad on a slightly enlarged scale, showing the resistance heating element and control thermostat in dotted lines; Fig. 5 is a sectional view taken along the line 5-5 of Fig. 4; Fig. 6 is an enlarged sectional view of the thermostat; and Fig. 7 is a sectional view similar to Fig. 5, but showing a modified form of my invention.

Referring to the drawing, in carrying out my invention in one form I provide a heating pad of conventional shape and in which the flexible supporting body 11 is made of rubber. In other words the resistance heating element 12, which is arranged in suitable zig-zag formation in the

pad as indicated in Fig. 4, is embedded in a layer of rubber. The pad may be conveniently formed, for example, by placing the resistance heating element between two sheets of rubber and thereafter vulcanizing the sheets together.

Around the edge of the heating pad I provide a rubber flange 13 which is preferably molded integrally with the rubber of the supporting body 11 and preferably also has an in-turned edge 14. This flange is provided for securing a hot pack 15 to one side of the pad so that the two parts can be conveniently handled together, the pack being of substantially the same size as the pad. Also the hot pack may be easily removed when desired, such as for saturation in water, a boric acid solution, etc., or for cleaning purposes.

The hot pack 15 is formed from a suitable porous or fibrous material adapted to absorb liquids. It may consist, for example, of a layer of felt or it may be made from a plurality of layers of cloth lightly quilted together.

Preferably the pad is also provided with a suitable thermostat 16, shown in Fig. 6, which thermostat is embedded in the rubber of the supporting body 11 in a central position as shown in Fig. 4. This thermostat comprises a suitable circularly shaped bimetallic thermostat 17 having one end secured to a projection 18 on a circular plate 19, while the other end 20 is arranged to cooperate with electrical contact 21 on a complementary closure plate 22. The two plates 19 and 22 are secured together by a central rivet 23, suitable electrical insulating material 24 and 25 being provided to electrically insulate the plates from each other. The thermostat is included in series with the resistance heating element 12, suitable electrical connections being made with the two casings 19 and 22 so that the heating circuit is completed through the thermostat. The thermostat operates in a well-known manner to engage and disengage the fixed contact 21 in response to changes in the temperature of the pad so as to maintain the pad at a predetermined temperature for which the thermostat is adjusted.

In the modified form of my invention, shown in Fig. 7, I provide a chamber or receptacle 26 on the back or upper side of the pad, this chamber being formed by a rubber wall 27 secured to and preferably molded integrally with the rubber of the supporting body 11 of the pad. Suitable apertures 27^a are provided in the body 10 between the lengths of the resistance heating element to allow liquid to seep from the chamber 26 through the pad into contact with the hot pack 15. A

suitable filling opening with a tight closure member (not shown), similar to the stoppers used on hot water bottles, is provided in the wall 27.

5 In this form of my invention I have also shown a flange 28 around the edge of the pad to retain the hot pack in position, but without the intumed edge shown in Fig. 5, for further securing the hot pack. Instead of the intumed edge I have shown a strap 29, preferably made of fabric, 10 having one end secured to one side of the pad and extending across it, where its other end is secured to the opposite side of the pad by a suitable snap button 30. Preferably a plurality of straps will be provided extending across the pad in spaced 15 relation with each other so as to secure the hot pack thereto. When the straps are used, the flange 28 may not be used, the pack then being held in place entirely by the straps.

20 While I have shown a particular embodiment of my invention, it will be understood, of course, that I do not wish to be limited thereto since many modifications may be made and I therefore contemplate by the appended claims to cover any 25 such modifications as fall within the true spirit and scope of my invention.

What I claim as new and desire to secure by Letters Patent of the United States, is:

1. An electric heating pad comprising a supporting body made of flexible waterproof material, a resistance heating element secured to 5 said body, a flange extending around the periphery of said body, said flange being integral with said body and made of the same material as said body, and a liquid absorbent pad secured to said body by said flange. 10

2. An electric heating pad comprising a waterproof flexible body, a resistance heating element secured to said body, means for securing a liquid absorbing pad to one side of said body, and walls forming a receptacle on the opposite side of said 15 body, said body being provided with apertures.

3. An electric heating pad comprising a flexible rubber body, a resistance heating element embedded in said body, a peripheral rubber flange on said body formed integrally therewith for securing 20 a fabric hot pack to one side of said body, and rubber walls forming a receptacle in the opposite side of said body, said body being provided with apertures to allow a liquid contained in said receptacle to seep therethrough. 25

CHESTER E. McDONALD.