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ELECTRIC THERAPEUTIC BANDAGE

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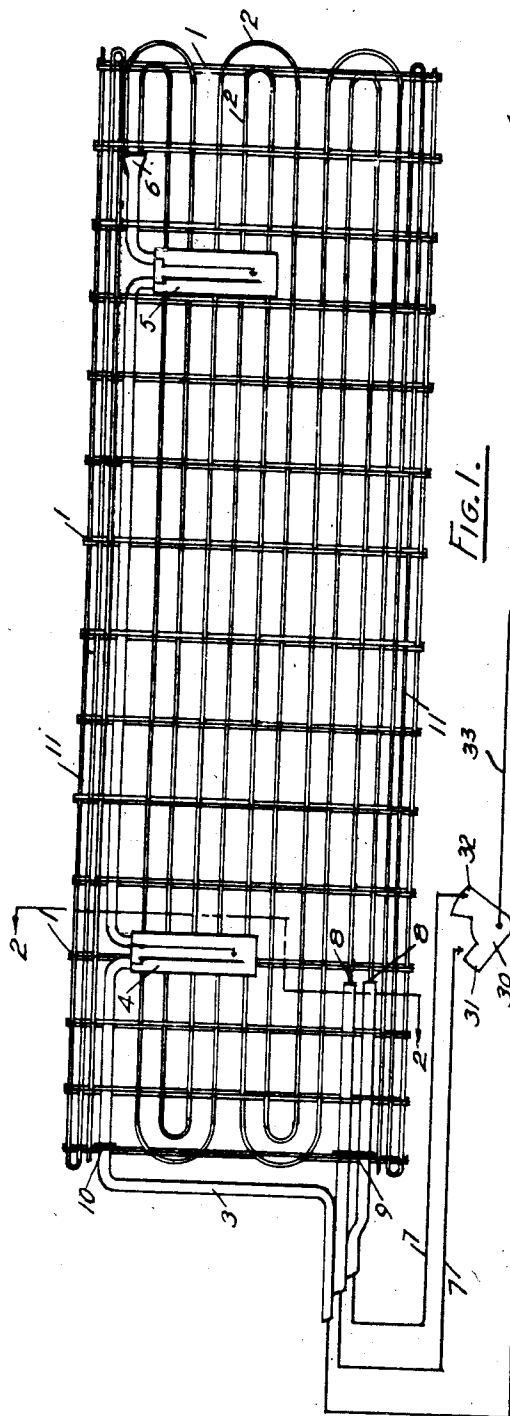


FIG. 1.



FIG. 2.

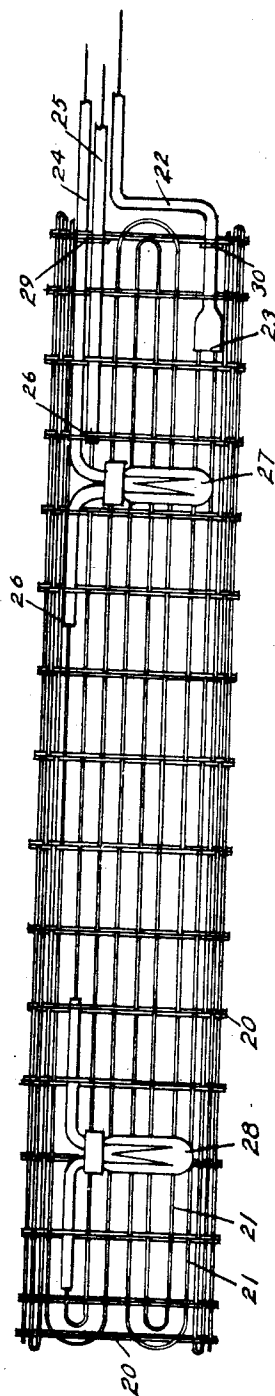


FIG. 3.

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ELECTRIC THERAPEUTIC BANDAGE

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2 Claims. (Cl. 219-46)

This invention relates generally to therapeutic heating bandages and more particularly to comparatively small sized therapeutic bandages or the like, and process of making same.

All elements of this character made according to the teachings of the prior art and with which I am familiar were so constructed that the leads projecting from the heating bandage were spliced externally of the bandage immediately adjacent thereto. This provided a weak point whereby the leads would break off because of the flexible nature of the bandage. It likewise permitted shocks to the patient as it was difficult to maintain a covering over the spliced portion of the leads. In the past, it has not been practical from a manufacturing standpoint, to produce bandages of small size by reason of the method of sewing resistance wires on the supporting cloth sheeting. These prior bandages did not provide an even distribution of heat and the amount of heat obtained therefrom was small. These bandages would not emit a very high degree of heat in a localized area as is necessary in a therapeutic bandage.

It is, accordingly, an object of my invention to overcome the above and other defects in therapeutic bandages, and it is more particularly an object of my invention to provide a therapeutic bandage which is simple in construction, cheap in cost, flexible in design, and easy to manufacture.

Another object of my invention is to provide a therapeutic bandage in which all splices between the lead wires, resistance wires, and thermostat and the like are woven into the structure.

Another object of my invention is to provide a therapeutic bandage which emits a high degree of heat for a given area.

Another object of my invention provides a therapeutic bandage having no splices or open connections adjacent the bandage.

Another object of my invention is to provide a novel process of manufacturing a therapeutic bandage.

Another object of my invention is to provide therapeutic bulbs in the place of thermostats in the heating bandage to provide infra-red and other rays for penetration of the parts to which the bandage is attached.

Another object of my invention is to provide a heating bandage with even heat distribution.

Another object of my invention is to provide a therapeutic bandage with strain relief members disposed on the leads woven into the heating element.

Other objects of my invention will become evident from the following detailed description taken in conjunction with the accompanying drawing, in which:

Fig. 1 is a plan view of my novel heating bandage showing the thermostats in series relationship in the common lead wire.

Fig. 2 is a fragmentary view taken on the line 2-2 of Fig. 1.

Fig. 3 is a plan view of my novel heating bandage showing therapeutic bulbs connected in each resistance wire line.

Referring to the drawing, Fig. 1 shows a heating element comprising interwoven warp and weft members 1 and 2. Warp members 1 may be made of asbestos or any other suitable non-flammable material. Weft members 2 comprise resistance wires wound on to a core and insulated with an outer covering of non-flammable yarn or the like. The weft members are woven in multiple to provide a higher degree of heat for a given area, even heat distribution, and three heat operation. The common wire 3 is woven into the heating element and has thermostats 4 and 5 in series therewith disposed in the central part of the heating element. Resistance wires 2 are connected to thermostats 4 and 5 at 6. A heating element woven as described provides a very flexible element and it is resistant to fire. All connections are made in the central part of the bandage so that all wires leading from the bandage will have no splices to permit a shock to a patient and it presents no fire hazard because of short circuiting of the leads. The leads 7 are connected to the resistance wires 2 at 8 interiorly of the bandage. The lead wires and resistance wires are all woven into the heating element. No open connections are made after the heating element is woven. Material used may be asbestos, fireproofed or chemically treated yarns. The heating element has a cover (not shown) which is vulcanized over the entire structure. A waterproof cloth (not shown) may be cemented at the seams to perform the same function. In the event of excessive heat accumulation, either one of the thermostats 4 or 5 opens the circuit. It will be evident that the weft members may be wound in triplicate. Because of the flexibility of this bandage, it may be used on the neck, forehead, or in any case where a local application of heat is desirable. Strain relief members 9 and 10 are attached to the lead wires 7 and the common lead 3, and woven directly into the heating element. These members prevent the leads from pulling out of the element. A selvage

11 is provided around the edges of the heating element.

Referring now to Fig. 3, I show interwoven warp and weft elements 20 and 21 connected to a common wire 22 at 23 internally of the heating element. Lead wires 24 and 25 are connected to the resistance wires 21 at 26. Connected in the resistance wires internally of the heating element are therapeutic lamps 27 and 28 for treatment of a patient. It will be evident that thermostats may be placed in either of these lines in place of the lamps. Strain relief members 29 and 30 are disposed on the lead wires 24 and 25.

The process of manufacturing my novel heating element comprises the affixing of the necessary warp strands to the loom to provide the maximum width of the bandage. Resistance wires are inserted across the warp and are properly affixed thereto and insulated. Strain relief members are attached to the lead wires connected to the resistance wires, and also to the common lead wire. These are woven into the heating element. The two windings are simultaneously interwoven across the warp. When the last turn of the winding is completed, I pull through the third or common lead to which the thermostats or lamp sockets have been previously attached in series. The selvage is then pulled across the warp which completes the process of making one complete bandage. It should be noted that all connections in this heating element are made internally of the heating element. The heating element is then vulcanized between two rubber sheets or cemented therebetween. The manufacture of the element shown in Fig. 2 starts the same as the element in Fig. 1. In this element, the thermostats or elements are connected in series with the resistance wires.

Three heat operation, low, medium, and high may be obtained by any suitable switching means. One means shown in Fig. 1 is for provision of a switch 30 having legs 31 and 32. Low heat operation is obtained when the following circuit is completed: wire 33, leg 32, wire 1, resistance wire 2, and common lead wire 3. Medium heat is obtained on completion of the following circuit:

wire 33, leg 32, wire 1, resistance wire 2 and common lead wire 3. High temperature is obtained upon completion of the following circuit: wire 33, switch legs 31 and 32 connected to resistance wires 2 through lead wires 1 to the common lead wire 3.

It will be evident from the foregoing that I have provided a therapeutic bandage which has even heat distribution, three heat operation, a high degree of heat for a given area, and one which has no external splices or connections.

Various changes may be made in the specific embodiment of my present invention without departing from the spirit thereof or from the scope of the appended claims.

What I claim is:

1. In a comparatively small electric therapeutic bandage in combination, interwoven warp and weft elements, the weft element comprising resistance wires wound in multiple, lead wires connected to said resistance wires and woven into said element, a wire common to said resistance wires connected thereto and woven into said element, strain relief members on said common wire and said lead wires woven into said element, thermostats in said common wire woven into said element, and sheets secured on opposite sides of said heating element.
2. A method of manufacturing a comparatively small electrically heated therapeutic bandage comprising the steps of the affixing of the necessary strands to a loom of the maximum width of the bandage; weaving resistance wires having strain relief members attached thereto simultaneously across the warp, pulling through the warp strands; connecting lead wires to said resistance wires and weaving them simultaneously across the warp; weaving a common wire having a strain relief member attached thereto and thermostats in series therewith into said element, and connecting said common wire to said resistance wire interiorly of said heating element; and disposing waterproof sheets on opposite sides of said heating element.

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