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(54) **SOFT ELECTRICAL TEXTILE HEATER AND METHOD OF ASSEMBLY**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

This patent is subject to a terminal disclaimer.

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(57) **ABSTRACT**

A soft heater utilizing metal fiber containing, carbon, metal or conductive ink coated threads, embroidered on, laminated between or woven into a nonconductive substrate to form electrical heating circuits. The heating element may be manufactured in a form of strip, sheet, sleeve or strand of threads for incorporation into plurality of articles. The soft heating element core may contain localized treatment such as positive temperature coefficient (PTC) material for temperature self-limiting control. The electrode conductors are attached to said heating element core which is connected in parallel or in series. The heating element core is shaped in a desired pattern. The whole assembly is sealed by at least one electrically insulated layer which envelopes the strips, sheets, sleeves, ropes or strands of threads.

44 Claims, 7 Drawing Sheets

