

[54] **ELECTRIC HEATING SOURCE FOR SEATS AND MATTRESSES AND METHODS OF APPLICATION OF THE SAME**

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[57] **ABSTRACT**

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The electric heating source of the invention is a fabric provided with parallelly interwoven groups of resistance wires transversed by parallelly interwoven groups of conducting wires, both kinds of wires thereby forming electrical contacts with each other. The resistance wires are interrupted, in the fabric, to form current circuits in which the transversely interwoven wires are connected to conductive feeder wires which are connected to a suitable current supply.

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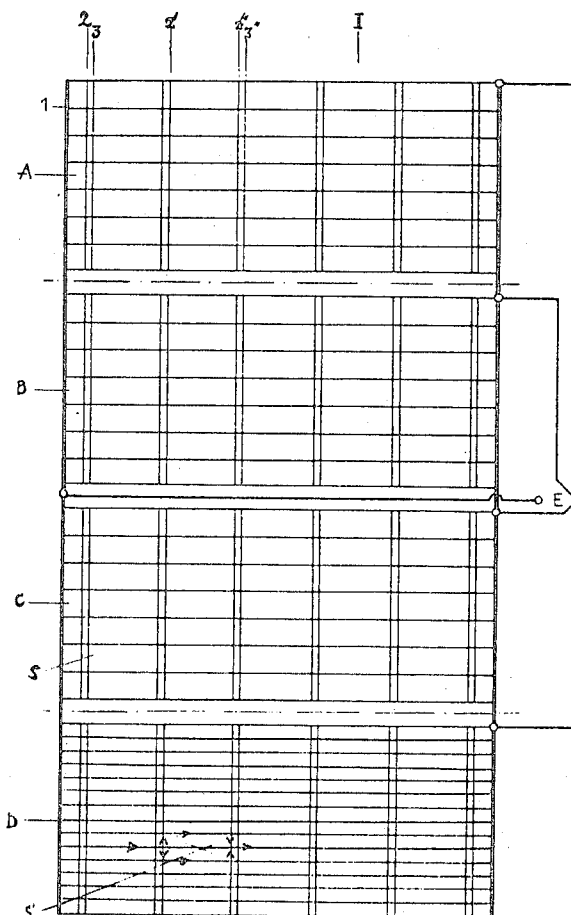
[58] Field of Search.....219/211-213, 217,  
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139/425; 5/334

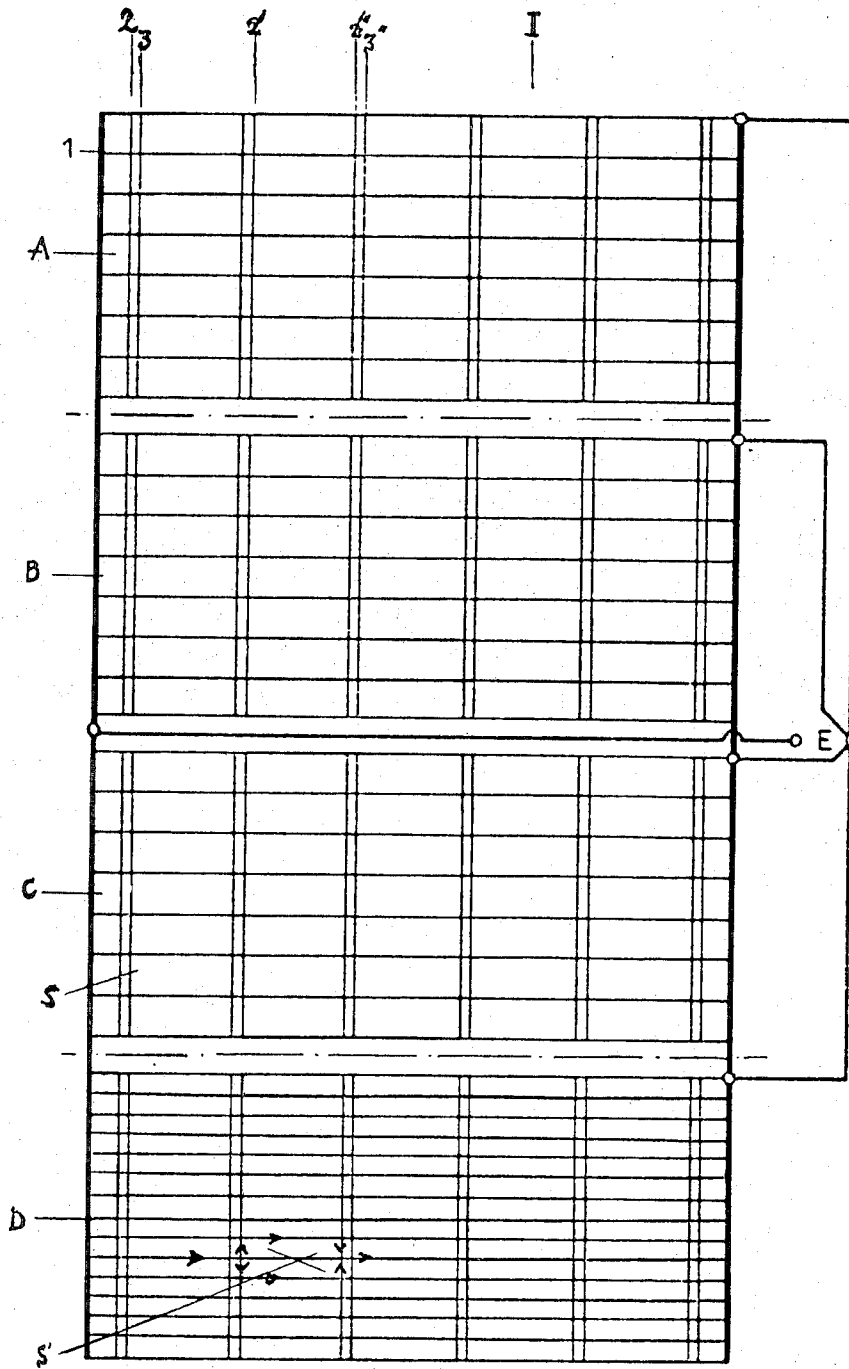
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4 Claims, 1 Drawing Figure

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**ELECTRIC HEATING SOURCE FOR SEATS AND MATTRESSES AND METHODS OF APPLICATION OF THE SAME**

This invention refers to different methods for using electric resistance heating devices for car seats, tractor seats and many possibilities of application such as cushions, blankets mattresses and fabrics. According to the invention the heating device consists of one or several heating circuits or heating elements, which are so constructed that their substantially parallelly running resistance wires are transversed by current carrying resistance wires, which are disposed in an insulating material and together form independent small sections. The advantage with said construction is that a break, if any, of a resistance wire only causes very small power losses. If there is a break of a resistance wire, the current is led past the place of rupture via the resistance wires which are located closest to and transversing the same. The current circuits can be connected together via a power switch so that a variable heat generation can be obtained.

Electric heating devices for cushions, blankets etc. are known, but said devices have continuous resistance wires with only prescribed methods to insulate the same. According to my invention the arrangement of the heating with independent sections of the special heat circuits is more reliable in use and more diversified when applied, without any increase in the price of the device worth mentioning, for the resistance wires can be fastened on or be woven into a suitable insulation material, possibly a glass-fiber material or some other fire-proof material. The resistance wires transverse each other for forming direct contact and for forming the sections described, and can also have extra accompanying fiber wires which strengthen and fasten the resistance wires in question, which must not be insulated, but rather finished against oxidation. At a wire break, if any, the power loss is small thanks to the construction which has been described above.

My invention shows another effect in the combination of the heating source and its associated cover. The latter is provided with an especially impregnated fabric surface layer with the ability to "breathe" moisture and liquids, which is an advantage for the way of application and the effectiveness of the invention, i.e. for tractor seats and tractor fittings, which must withstand moisture. According to my Swedish Pat. No. 180.206 which applies to silicone treatment of plastic surfaces and fabrics, said idea can be combined with the heating source in such a way that the coating surface layer is impregnated with silicone or corresponding material with the purpose that no liquid or moisture can penetrate into the surface layer, which, moreover, shall have the ability of letting the heat pass. The same thing applies to mattresses, blankets and stretchers with a heating source, the surface layer of laminated fabric can possibly be sprayed with a liquid containing silicone and other desired substances being absorbed by the skin and the musculature under co-operation of the effect of the heat source according to the invention.

In the enclosed drawing, the FIGURE shows as an example a wiring diagram for four current circuits A, B,

C and D, each one consisting of small independent sections S. The insulation material is designated by I and the place of the power switch by E.

According to the FIGURE of drawing parallel resistance wires in this case are designated by 1 and the transversing, perpendicular resistance wires by 2 with accompanying fiber wires 3. Said resistance wires together form small desired independent sections S. The accompanying fiber wire 3 serves as a reinforcement and/or for a special wire fastening, for instance in zigzag formation in order to contact-fasten the transversing resistance wires with each other. An arisen break of the resistance wire is indicated in the section S' and in such a case the current is led past the section according to the arrow directions set forth. In order to secure the contact between the sections, the resistance wires can be interwoven and thus transversing each other.

In the claims the specific features of the invention are set forth.

Within the scope of the invention, different solutions can be thought concerning the purpose and the way of application with the utilization of the heating source as an independent unit or as a combination part in different connections for connection to a battery or the mains voltage.

What I claim is:

1. In an electric source for seats, fabrics, blankets, mattresses, stretchers and the like involving the use of resistance heating means and the arrangement of these in a fabric of insulating warp and weft strands, the improved construction wherein the heating source consists essentially of at least one heating circuit being formed by an arrangement of substantially parallelly running resistance wires traversed by substantially parallel conducting wires of relatively low resistance, said arrangement of wires forming substantially square-shaped sections of predetermined size, said at least one heating circuit being combined with a suitable insulating carrier material, said parallel resistance wires being interwoven in parallel groups in said fabric, said resistance wires running through current circuits in the fabric between which they are interrupted and in which several heating sections are formed, said resistance wires in the current circuits being transversely interwoven with groups of conducting wires which are connected to conductive feeder wires located adjacent the ends of the conducting wires.

2. Electric heat source according to claim 1, wherein the resistance wires forming sections are operatively associated with fiber wires, arranged in interwoven formations, that fasten the resistance wires at their traversing points.

3. Electric heat source according to claim 1, wherein the resistance wires and the conducting wires consist essentially of multiple strands each strand having a small diameter.

4. Electric heat source according to claim 1, wherein the conductive feeder wires are connected to a power switch through which electrical current is supplied to the electric heating source.

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