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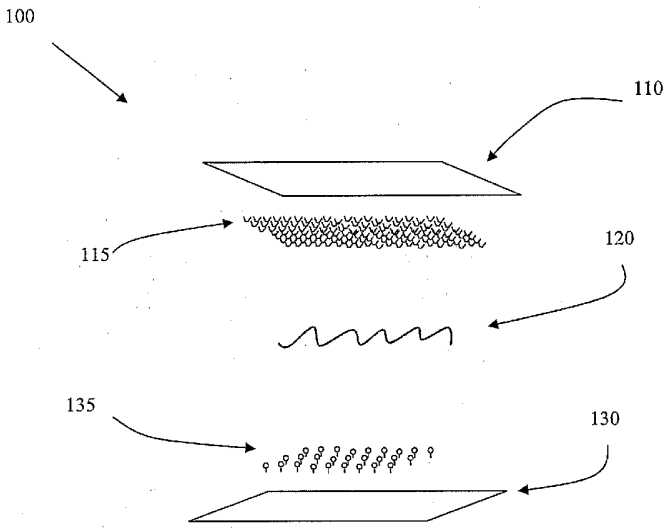
For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) **Title:** A HEATED SEAT FOR A VEHICLE SEAT



(57) **Abstract:** The invention relates to a heated cushion (100) for a vehicle seat, comprising an upper part (110) having a first and a second main surface and a lower part (130) having a first and a second main surface. The parts (110, 130) are arranged with their first main surfaces one against the other and on one first main surface there is disposed a heating coil (120). The upper part (110) and the lower part (130), on their respective first main surfaces, each have one half (115, 135) of a fastening system in Velcro material, and the heating coil (120) is secured in its main surface by the Velcro elements (115, 135) of the main surface. Expediently, at least one part (110, 130) is made in a fabric material.

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TITLE

A heated seat for a vehicle seat

TECHNICAL FIELD

The present invention relates to a heated cushion for a vehicle seat. The heated cushion according to the invention comprises an upper part and a lower part, as well as a heating coil.

BACKGROUND ART

Heated seats and heated cushions for vehicle seats can be found in many different versions. The heat is most often generated by means of electricity which is conducted through one or more so-called heating wires disposed in the seat or the cushion.

In known heated seats or heated cushions, the heating wire is often arranged between two layers in the seat by means of a glue, by which the wire is fixed and the two parts are held together. The holding together of the two layers and the glue-fixing of the wire gives rise, however, to a number of drawbacks: the glues which are used often have an adhesiveness which varies with temperature, above all when the glue ages. This can make the parts come loose, even at relatively low temperatures.

Another problem with parts which are glued together has to do with increased requirements with respect to parts recycling; components which are glued are difficult to take apart and, moreover, the components are "contaminated" with glue when they are taken apart.

Another drawback with parts which are glued together is that in modern vehicle seats there are often ventilation systems present. If the seating surface is covered by a seat whose components are glued, this in itself will prevent good ventilation of the seating surface.

DISCLOSURE OF INVENTION

There is therefore a need for a heated cushion for a vehicle seat which does not have the drawbacks of known cushions of this kind.

This need is met by the present invention in that it discloses a heated cushion for a vehicle seat, which comprises an upper part having a first and a second main surface, and a lower part having a first and a second main surface, in which the parts are arranged with their first main surfaces facing each other.

On one main surface of one part there is disposed a heating coil, and the upper and the lower part each have one half of a fastening system in Velcro material, the heating coil being secured in its main surface by the Velcro elements of the main surface.

By virtue of the invention, a heated seat is therefore obtained, whose components can be easily separated from one another for recycling purposes, and whose components additionally have a cohesion which is not dependent on temperature or age.

Nor will the seat components obstruct air flow, which makes it possible to integrate the seat into a vehicle seat having a ventilation system. Expediently, the upper or the lower part of the seat is realized in a fabric material, which further increases the air permeability and increases the possibility of integrating the Velcro material into the seat parts.

BRIEF DESCRIPTION OF DRAWINGS

The invention will be described in greater detail below with reference to the appended drawings, in which

Fig. 1 shows the components in a heated seat according to the invention, and

Fig. 2 shows how the components from Fig. 1 are meant to be assembled.

EMBODIMENTS

Fig. 1 illustrates the basic component parts in a heated seat 100 according to the invention. As can be seen from the drawing, the seat 100 comprises an upper part 110 and a lower part 130, both of which preferably are substantially flat and have a first and a second main surface. The respective first main surfaces of the two parts 110, 130 are intended to be arranged one against the other in the resulting seat 100.

Another one of the components in the seat 100 is a heating wire 120, which is connected to an external system (not shown in Fig. 1 or Fig. 2) in order to make the wire give off heat. The external system is usually an electrical system in the vehicle, which can comprise a control system for controlling the quantity of heat which is given off.

For fixing the heating wire 120 in the seat 100 and for holding together the two parts 110 and 130, various types of wet or dry glues are traditionally used, in which the dry glues, for example, can be heat-activated. As stated above, this has a number of drawbacks, such as that it makes it difficult, for example, to take the seat apart for possible recycling, that the adhesiveness varies with age and ambient temperature, and that seat ventilation is made more difficult.

In order to solve these problems, the seat 100 according to the invention is equipped with an alternative system for holding together the seat and for fixing the heating coil 120; the upper part 110 and the lower part 130, on their respective first main surfaces, each have one half 115 and 135 respectively of a fastening system in Velcro material (more commonly referred to as “hook and loop”).

The Velcro elements 115 and 135 are shown in Fig. 1 as separate from the seat parts 110, 130, but are intended to be disposed on the first main surface

of the respective seat part so that they will be facing one another. The Velcro elements 115, 135 can, of course, be fastened to their respective main surfaces in a variety of ways within the scope of the invention, but in a preferred embodiment at least one of the parts 110, 130 is made in a fabric material. Preferably, both the parts 110, 130 are made in fabric, which makes it possible to integrate the Velcro elements 115, 135 into the fabric.

For fixing the heating wire 120 in the desired position in the seat 100, the Velcro elements 115, 135 are used. In the finished seat 100, elements from both surfaces will combine to fix the wire 120, but in a manufacturing phase only Velcro elements belonging to one surface are initially used. This involves, in the manufacture or assembly of the seat 100, the heating wire 120 being pressed down against the Velcro surface 115, 135 so that the individual Velcro elements enclose the wire, and hold it on the main surface of the particular part 110, 130. Expediently but not necessarily, the heating wire 120 is placed or pressed onto the Velcro surface, which is constituted by hooks or the like, the latter clasping and encompassing the wire until the second main surface is applied.

This is shown in Fig. 2, in which the wire 120 has been clamped in the Velcro element 135 of the lower part 130, whereafter the upper part 110 is applied to the lower part and the Velcro surfaces 115, 135 mutually engage. When the upper and the lower part are mutually engaged, the Velcro elements from both surfaces will enclose the heating wire 120 and combine to fix it in the desired position in the seat 100.

By virtue of the invention, a heated seat for a vehicle seat has therefore been obtained, which is easy to take apart for recycling, which does not obstruct ventilation of a vehicle seat, since the principal elements can be made of fabric, and the securement of which is not dependent on temperature or age.

CLAIMS

1. A heated cushion (100) for a vehicle seat, comprising an upper part (110) having a first and a second main surface and a lower part (130) having a first and a second main surface, which parts (110, 130) are arranged with their first main surfaces facing each other, in which on one first main surface there is disposed a heating coil (120), characterized in that the upper part (110) and the lower part (130), on their respective first main surfaces, each have one half (115, 135) of a fastening system in Velcro material, and in that, when the upper (110) and the lower (130) part are mutually engaged, the Velcro elements from the respective main surfaces of the parts will enclose the heating coil (120) and contribute to fixing it on the cushion (100).

2. A heated cushion (100) according to claim 1, in which at least one part (110, 130) is made in a fabric material.

3. A method for producing a heated seat for a vehicle seat (100), which seat comprises an upper part (110) having a first and a second main surface and a lower part (130) having a first and a second main surface, in which the upper part (110) and the lower part (130), on their respective first main surfaces, each have one half (115, 135) of a fastening system in Velcro material, further comprising a heating wire (120), which method is characterized in that, in the manufacture of the seat, the heating wire (120) is first pressed down against the Velcro material on one of the said main surfaces so that the individual Velcro elements on the main surface enclose the wire (120) and hold it on the particular main surface.

4. The method according to claim 3, according to which the heating wire (120) is first pressed down onto the main surface, the Velcro elements of which are constituted by hooks or the like, the latter clasping and encompassing the wire, whereafter the second main surface is applied.

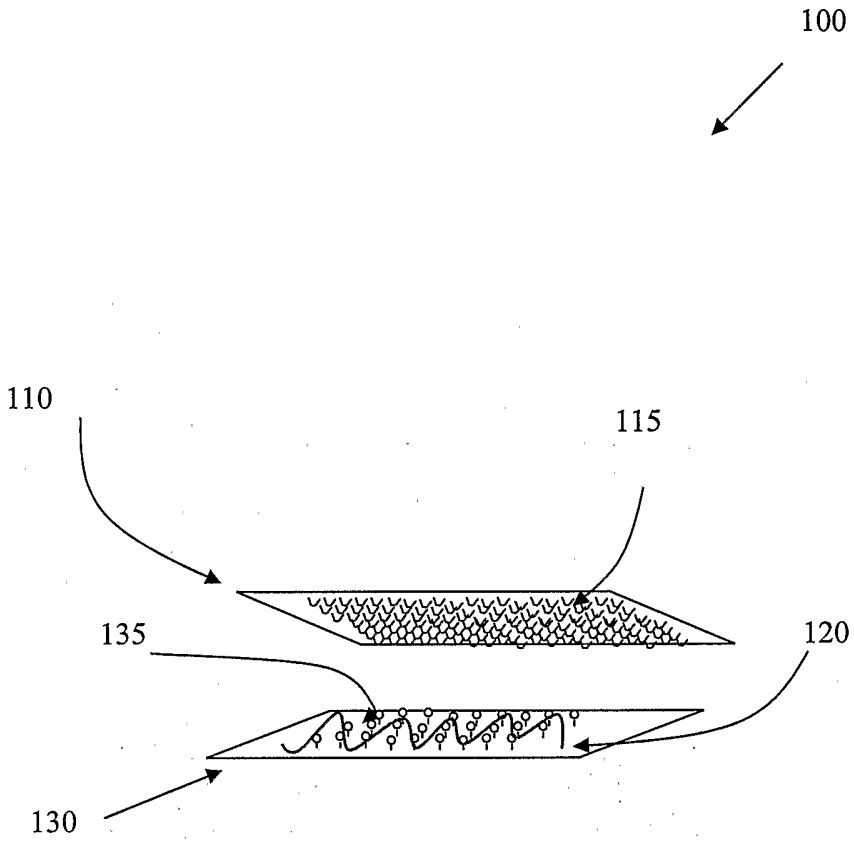

Fig 2

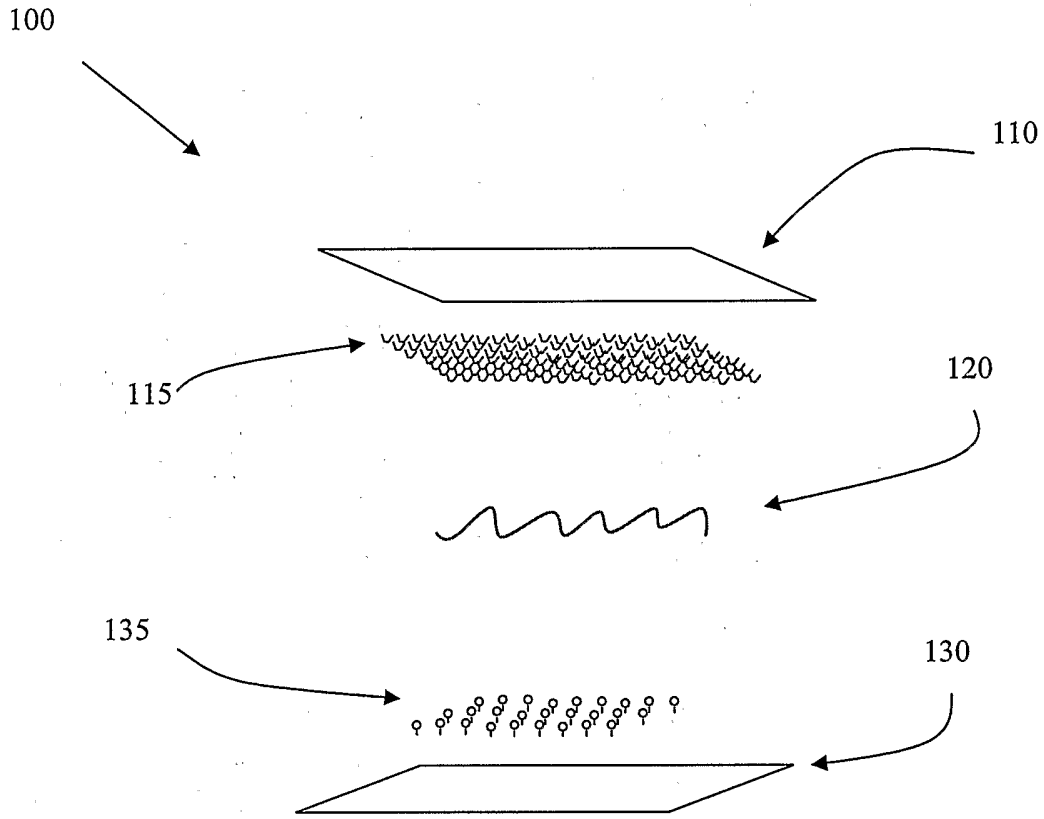

Fig 1

INTERNATIONAL SEARCH REPORT

International application No.
PCT/SE 2005/001320

A. CLASSIFICATION OF SUBJECT MATTER

IPC: see extra sheet
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC: B60N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPO-INTERNAL, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2004041585 A2 (WITCHIE, RONALD), 21 May 2004 (21.05.2004), page 3, line 9 - line 14; page 7, line 15 - line 21, figures 1,4, abstract ---	1-4
A	KR 010061863 A (HYUNDAI MOTOR COMPANY), 7 July 2001 (07.07.2001), abstract ---	
A	DE 4432497 A1 (FICHTEL & SACHS AG), 14 March 1996 (14.03.1996), column 5, line 47 - line 50 ---	
A	DE 9319026 U1 (FABRITZ, GERHARD), 21 April 1994 (21.04.1994) --- --------	

☐ Further documents are listed in the continuation of Box C. ☒ See patent family annex.

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"X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
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WO	2004041585	A2	21/05/2004	AU	2003290662	A	00/00/0000
KR	010061863	A	07/07/2001	NONE			
DE	4432497	A1	14/03/1996	NONE			
DE	9319026	U1	21/04/1994	NONE			