ABSTRACT
A cover material for the body-supporting portion of a chair, couch, or the like is formed with a number of internal ducts connected either to a source of pressurized air or to a source of vacuum. Apertures extend between the surface of the cover and the ducts for the intake and discharge of air therefrom to cool the body of a person sitting in the chair.

10 Claims, 10 Drawing Figures
COVER MATERIALS FOR BODY-SUPPORTING ARTICLES

FIELD OF THE INVENTION

The invention relates to a cover material for the body-supporting portion of a chair, couch, or the like.

SUMMARY OF THE INVENTION

According to the invention, there is provided a cover material for use with a body-supporting article, said material having ducts for the flow of gas, which ducts communicate with apertures in a surface of the material, and said ducts being arranged for communication with gas-flow generating means.

BRIEF DESCRIPTION OF THE DRAWINGS

Embodiments of the invention will now be described, by way of example only, with reference to the accompanying diagrammatic drawings in which, FIGS. 1 to 10 are fragmentary perspective views of various forms of cover material in accordance with the invention.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

FIG. 1 shows a cover material 5 containing groups of internally extending ducts, A to D, in communication with groups of apertures 1 to 4, extending through the upper surface of the material.

The ducts A to D are arranged for connection to gas-flow generating means, for example a source of pressurized gas such as air, or a vacuum source. All the ducts may be connected to the source of pressurized gas or to the vacuum source, or one group of alternate ducts may be connected to the source of pressurized gas, while the other group of alternate ducts is connected to the vacuum source, this connection, for example being periodically reversed.

In the embodiment shown in FIG. 2, the apertures 1 to 4 are formed in projections 5a to 5c extending above the upper surface of the material 5. The projections 5a are pyramidal, the projections 5b are frusto-conical and the projections 5c are in the form of ribs.

The embodiment shown in FIG. 3 differs from the previous embodiment in that apertures 6 to 8 are formed in the upper surface of the material 5 in the areas between the projections 5a to 5c. The apertures 6 to 8 communicate with ducts E, F and G. As in the previous embodiments the ducts E, F and G are connected to the source of pressurized gas or to the vacuum source.

The embodiment shown in FIG. 4 differs from that shown in FIG. 3 in that the areas between the projections 5b are filled with a woven fabric 9, the apertures 1 to 4 remaining unobstructed.

The embodiment illustrated in FIG. 5 differs from that shown in FIG. 1 in that at least some of the apertures 1 to 4, communicate with sealed chambers 10 formed on the upper surface of the material 5. The apertures 6 to 8, however, remain open to the atmosphere. Each chamber 10 is defined by a layer of material 13 in the form of a raised cushion.

In the embodiment shown in FIG. 6, the side walls of the chambers 10 are integral with the layer of material 5 and are closed by a layer of resilient material 11.

In the embodiment shown in FIG. 7, the chambers 10 are formed by a layer 12 of an elastic material, so that when pressurized fluid is passed into the chambers 10, inflated cushions are formed. Apertures 6 and 7 for the admission or removal of air to or from the atmosphere are provided where the layers 5 and 12 are joined together.

FIG. 8 shows the manner in which the ducts A to D and F of the embodiment shown in FIG. 6 can be connected to the pressurized gas or vacuum source, which has been omitted from the figures for the sake of clarity. The connection comprises passages 14 to 18, which communicate with the respective ducts A to D and F — and with the other ducts E and G, if any — through branch passages for example 19. In the interest of clarity, only the branch passages 19, representing the connection between passage 14 and duct A, have been shown in the figure. There are similar branch passages for placing the passages 15 to 18 in communication with the corresponding ducts B to D and E to G.

FIG. 8 shows clearly that the supply passages 14 to 18 are formed in the material 5 and that the chambers 10 are covered by the layer 11. Alternatively, the passages 14 to 18 can be covered by means other than the layer 11 and can also lie in the opposite surface of the material 5 to the chambers 10.

In the embodiment shown in FIG. 9, the supply passages 14 to 18 are defined by raised cushions in the layer 13 and by the layer 5. Alternatively passages can be formed on the other surface of the cover.

The layers 11 to 13 can be porous, so that when pressurized fluid is fed into the chambers 10, it escapes through the layers 11 to 13 or, when suction is applied to the chambers 10, air is drawn into the chambers through the layers 11 to 13 from the atmosphere.

In the embodiment illustrated in FIG. 10, the material 5 containing the ducts A to F is made in two parts, one of which has the form of a flat sheet with upstanding ribs while the other is a continuous flat covering sheet.

The cover material can be of such a nature that it can be shaped, to conform to the chair, or couch, with which it is to be used.

The cover material described provides a high degree of comfort for the person sitting or reclining in the chair or couch, since the air warmed by the body and laden with water vapor is removed and is replaced by cool air. Further the body is not supported the whole time by the same portion of the cover material. The manner in which the body is supported on the cover can be determined according to which group of apertures discharges the pressurized gas and which group provides the suction. In this way, parts of the body can be temporarily relieved of pressure, so that uniform surface blood circulation is ensured.

What is claimed is:

1. A cover material for use with a body-supporting article, said material having groups of ducts for the flow of gas, which ducts communicate with apertures in a surface of the material, supply passages extending transversely to said ducts and each supply passage communicating with all of the ducts of a respective one of said group of ducts, and said supply passages being arranged for communication with gas-flow generating means.
2. A material according to claim 1 further comprising projections extending from the said surface of the material, said apertures extending through said projections.

3. A material according to claim 2 further comprising a woven fabric interposed in the space defined between the projections.

4. A material according to claim 1 further comprising means defining a plurality of chambers on the said surface of said material, some of said apertures being in communication with said chambers.

5. A material according to claim 4 wherein the said means defining a plurality of chambers comprises a layer of elastic material, said layer of elastic material defining, with the said surface, a plurality of sealed chambers.

6. A material according to claim 1 wherein said supply passages are formed within said material.

7. A material according to claim 1 wherein the said means defining said supply passages, comprises a surface of said material, and a layer of a resilient material.

8. A material according to claim 5 wherein said elastic material is porous.

9. A material according to claim 7 wherein said layer of resilient material is porous.

10. A material according to claim 1, said material comprising a flat sheet having ribs upstanding therefrom, and a flat covering sheet.

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