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Remarks:

Amended claims in accordance with Rule 137(2) EPC.

(54) **A lumbar cushion having gas bags with fixed air pressure**

(57) The present invention relates to products for daily use, and particularly relates to a lumbar cushion having a gas bag (2) with fixed air pressure, the lumbar cushion comprising a flattened enclosure (1) having a lumen formed inside the enclosure (1), a gas bag arranged and fixed within the lumen, an inner lumen with fixed air pressure arranged on the gas bag; the enclosure further comprising an upper portion forming a neck for connecting snap-fit connectors, and a lower portion forming a connector for connecting to a seat. A small amount of gas is

filled into the gas bag, i.e., the gas bag has a fixed air pressure. When a body of a user rest on the lumbar cushion, the gas in the gas bag will flow within the gas bag at the pressing of the external force, which can ensure the gas flow to the lumbar of the user in all directions and can adjust the amount in every direction automatically so that the gas lumbar cushion can perfectly support the lumbar section of the user. This may consequently conform the user and relieve fatigue to a great extent.

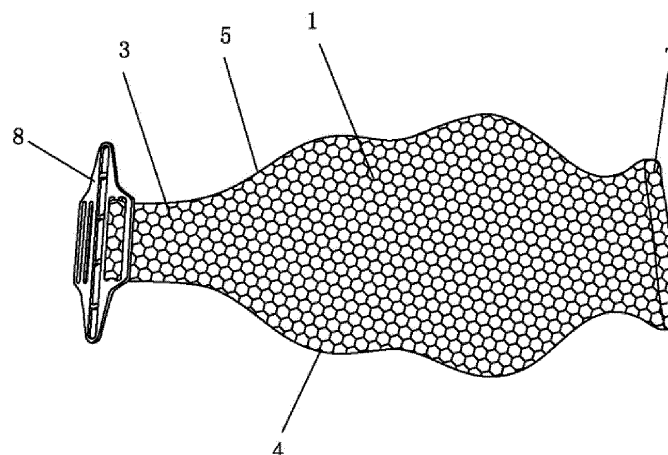


Fig.5

Description

Technical field

[0001] The present invention relates to products for daily use, and particularly relates to a lumbar cushion having a gas bag with fixed air pressure.

Background

[0002] In case of long time seating, a typical seat back normally cannot adaptively match the back profile of each person, for example, when driving a car, the lower back of a person normally cannot nestled onto the seat back and is therefore normally not supported by the seat back. This may result in strain of the lumbar muscles and may bring soreness and pain. In order to solve this problem, Lumbar cushions are widely used in the art. A typical lumbar cushion is disposed on the cushion of the seat, and is fastened to the seat back by fastening means. However, since users are different in body height, their lumbar are also in different elevations, which make it difficult for a fastened lumbar cushion to align precisely to the lumbar of a user. There are also gas lumbar cushions in the art. A typical gas lumbar cushion normally includes a gas bag which is fully inflated. However, if the gas bag is fully inflated, it will not prone to deform when being presses which may be less comfortable when being used, on the other hand, if the gas bag is not insufficiently inflated, it will not function as desired.

Summary of invention

[0003] The invention directs to a lumbar cushion having a gas bag with fixed air pressure, which can relieve fatigue. The lumbar cushion according to this invention has a simple structure, easy to be assembled, and comfortable in use.

the invention can be implemented by providing

A comfortable type lumbar cushion having a gas bag with fixed air pressure comprising, a flattened enclosure having a lumen formed inside the enclosure, a gas bag arranged and fixed within the lumen, an inner lumen with fixed air pressure arranged on the gas bag. The enclosure further comprising an upper portion forming a neck for connecting snap-fit connectors, and a lower portion forming a connector for connecting to a seat.

[0004] Both sides of the enclosure having a contour of curved line or polyline.

[0005] The enclosure can comprise a front piece and a rear piece, the front piece and the rear piece are connected to one another at the perimeters thereof to form a lumen between the front piece and the rear piece.

[0006] A connecting piece is provided on the inner side of the front piece and the rear piece. An upper end of the gas bag is fixedly attached to the connecting piece.

[0007] The gas bag is provided in a middle portion of the enclosure.

[0008] The connector at the lower portion of the enclosure is a protruding bar.

[0009] The front piece of the enclosure can be made from breathable material suitable for the summer, the rear piece can be made from thermal insulating material suitable for winter time. Alternatively, the front piece can be made from thermal insulating material suitable for winter time, the rear piece can be made from breathable material suitable for summer time. Alternatively, the front piece and the rear piece can both be made from thermal insulating material suitable for winter time; or the front piece and the rear piece can both be made from breathable material suitable for summer time.

[0010] The breathable material suitable for summer time can be sandwiched mesh fabric, three-dimensional breathable mesh fabric, or viscose fiber fabric. The thermal insulating material suitable for winter time can be suede nap, genuine leather, or shearling.

[0011] Compared with the gas lumbar cushion in the art, the seat covers having a gas lumbar cushion in this invention are advantageous in that:

1. A small amount of gas is filled into the gas bag, i.e., the gas bag has a fixed air pressure. When a body of a user rest on the lumbar cushion, the gas in the gas bag will flow within the gas bag at the pressing of the external force, which can ensure the gas flow to the lumbar of the user in all directions and can adjust the amount in every direction automatically so that the gas lumbar cushion can perfectly support the lumbar section of the user. This may consequently conform the user and relieve fatigue to a great extent.

2. The upper end of the lumbar cushion can be fixed to the upper half of the seat via snap-fit connectors, the lower half can be fixed connected to the corner of the seat back. No displacement will incur during use and the position of the a bag can be adjusted vertically to fit the height of different users.

3. The front piece and the rear piece are made from different materials, such as, the front piece is made from material that can keep warm in winter time and the rear piece is made from ventilating material that suitable for summer time. therefore the cushion can be sued in both winter and summer time.

BRIEF DESCRIPTION OF THE DRAWINGS

[0012]

Fig. 1 is a schematic illustration of the lumbar cushion according to the invention;

Fig. 2 is a schematic illustration of the gas bag according to the invention;

Fig. 3 is a schematic illustration of the connecting piece arranged on the inner side of the front piece and the rear piece;

Fig. 4 is an enlarged illustration of the lumbar cushion with a protrusion in the lower portion; and

Fig. 5 is a schematic illustration of lumbar according to the invention connected with a dedicated snap-fit connector.

DETAILED DESCRIPTION

[0013] Detailed description of the embodiments of the invention is elaborated below with reference to figures 1 to 5.

[0014] A lumbar cushion with fixed air pressure gas bag that can relieve fatigue is provided. The lumbar cushion comprises an enclosure 1 of a flattened shape, a lumen formed within the enclosure 1. The enclosure is made from flexible material. A gas bag 2 is provided inside the lumen. The gas bag is provided with an inner cavity that is filled with gas of fixed air pressure. To ensure the lumbar section can feel comfortable in all directions, the gas bag is filled with a small amount of gas. The gas bag 2 is fixedly connected in the lumen, so that the contour of the lumen changes with the gas bag 2. An upper portion of the enclosure forms a neck 3 for connecting to a snap-fit connector, and a lower portion of the enclosure forms a connector for connecting to a seat.

[0015] Both sides 4, 5 of the enclosure have a contour of curved line or polyline. The enclosure can also be configured to other shapes, such as cucurbit shape, or reversed cucurbit shape, according to actual design requirements.

[0016] The enclosure 1 comprises a front piece and a rear piece, the front piece and the rear piece are connected to one another at the perimeters to form a lumen between the front piece and the rear piece. The front piece and the rear piece are normally attached to one another via concealed seam processes, but they can also be connected via zippers, snap-buttons or regular buttons.

[0017] A connecting piece 6 is provided on the inner side of the front piece and the rear piece. An upper end of the gas bag 2 is fixedly attached to the connecting piece 6. Normally, the gas bag is attached to the connecting piece by sewing. However, zippers, snap-buttons, and regular buttons can also be used for attaching the gas bag to the connecting piece.

[0018] The gas bag 2 is provided in a middle portion of the enclosure. In use, the gas bag is arranged in the lumbar section to ensure the lumbar section of the body can feel the comfortable automated adjustment function from all directions.

[0019] The connector at the lower portion of the enclosure 1 is a protruding bar 7. The lower portion of the enclosure 1 is disposed in the seam between the seat

bottom and the seat back of the seat. The protruding bar 7 extends through the seam between the bottom portion and the back portion, that is, the low portion of the cushion can be fixedly connected to the corner of the seat back to facilitate attachment.

[0020] The front piece of the enclosure can be made from breathable material suitable for the summer, the rear piece can be made from thermal insulating material suitable for winter time. Alternatively, the front piece can be made from thermal insulating material suitable for winter time, the rear piece can be made from breathable material suitable for summer time. Alternatively, the front piece and the rear piece can both be made from thermal insulating material suitable for winter time; or the front piece and the rear piece can both be made from breathable material suitable for summer time.

[0021] The breathable material suitable for summer time can be sandwiched mesh fabric, three-dimensional breathable mesh fabric, or viscose fiber fabric. The thermal insulating material suitable for winter time can be suede nap, genuine leather, or shearling, or other thermal insulating materials.

[0022] The cushion can be used in both winter and summer. Thus, in addition to the convenience and comfortableness brought by the cushion, the total cost can be lowered as preparation of separate cushions for different seasons may not be necessary.

[0023] In use, the neck 3 of the enclosure 1 is connected with a dedicated snap-fit connector 8, the dedicated snap-fit connector 8 is hung on the steel rods of the head rest, the protrusion bar in the lower portion is fixedly connected to the corner of the seat back. The connection between the neck portion and the snap-fit connector 8 is adjustable so that the vertical position of the gas bag 2 is adjustable. The gas contained within the gas bags can travel within the gas bag in response to the external force applied thereon as it has a fixed air pressure. Thus when human body rests on the lumbar cushion, the gas may flow freely within the gas bag 2 so as to fit the lumbar section of the human body to bring comfortableness and to relieve fatigue.

[0024] The above embodiments described above are only preferred embodiment of the invention, and are not intended for limiting the scope of implementation of the invention. Therefore, any equivalent variation on shape, structure, principle made to the invention shall all covered within the protection scope of the invention.

Claims

1. A comfortable type lumbar cushion having a gas bag with fixed air pressure comprising a flattened enclosure having a lumen formed inside the enclosure, a gas bag arranged and fixed within the lumen, an inner lumen with fixed air pressure arranged on the gas bag; the enclosure further comprising an upper portion forming a neck for connecting snap-fit con-

nectors, and a lower portion forming a connector for connecting to a seat.

2. The lumbar cushion of claim 1 wherein both sides of the enclosure having a contour of curved line or polyline. 5
3. The lumbar cushion of claim 1 wherein the enclosure comprises a front piece and a rear piece, the front piece and the rear piece are connected to one another at the perimeters thereof to form a lumen between the front piece and the rear piece. 10
4. The lumbar cushion of claim 3 further comprising a connecting piece provided on the inner side of the front piece and the rear piece; an upper end of the gas bag is fixedly attached to the connecting piece. 15
5. The lumbar cushion of claim 1 wherein the gas bag is provided in a middle portion of the enclosure. 20
6. The lumbar cushion of claim 1 wherein the connector at the lower portion of the enclosure is a protruding bar. 25
7. The lumbar cushion of claim 1 wherein the front piece of the enclosure can be made from breathable material suitable for the summer, the rear piece can be made from thermal insulating material suitable for winter time; or the front piece can be made from thermal insulating material suitable for winter time, the rear piece can be made from breathable material suitable for summer time; or the front piece and the rear piece can both be made from thermal insulating material suitable for winter time; or the front piece and the rear piece can both be made from breathable material suitable for summer time. 30
8. The lumbar cushion of claim 7 wherein the breathable material suitable for summer time can be sandwiched mesh fabric, three-dimensional breathable mesh fabric, or viscose fiber fabric; the thermal insulating material suitable for winter time can be suede nap, genuine leather, or shearling. 35

Amended claims in accordance with Rule 137(2) EPC.

1. A comfortable type lumbar cushion having a gas bag with fixed air pressure, the lumbar cushion comprising a flattened enclosure (1) having an inner lumen formed inside the enclosure (1), a gas bag (2) arranged and fixed within the inner lumen, the inner lumen with fixed air pressure arranged on the gas bag (2); the enclosure (1) further comprising an upper portion forming a neck (3) for connecting snap-fit connectors (8), and a lower portion forming a con- 50

necter (8) for connecting to a seat,

characterized in that

the front piece of the enclosure (1) is made from breathable material suitable for the summer, wherein the rear piece is made from thermal insulating material suitable for winter time; or wherein the front piece is made from thermal insulating material suitable for winter time, wherein the rear piece is made from breathable material suitable for summer time; or wherein the front piece and the rear piece are both made from thermal insulating material suitable for winter time; or wherein the front piece and the rear piece are both made from breathable material suitable for summer time.

2. The lumbar cushion of claim 1 wherein both sides (4, 5) of the enclosure (1) having a contour of curved line or polyline.
3. The lumbar cushion of claim 1 wherein the enclosure (1) comprises a front piece and a rear piece, wherein the front piece and the rear piece are connected to one another at the perimeters thereof to form the inner lumen between the front piece and the rear piece.
4. The lumbar cushion of claim 3 further comprising a connecting piece (6) provided on the inner side of the front piece and the rear piece; wherein an upper end of the gas bag (2) is fixedly attached to the connecting piece (6).
5. The lumbar cushion of claim 1 wherein the gas bag (2) is provided in a middle portion of the enclosure (1).
6. The lumbar cushion of claim 1 wherein the connector (8) at the lower portion of the enclosure (1) is a protruding bar (7).
7. The lumbar cushion of claim 1 wherein the breathable material suitable for summer time is sandwiched mesh fabric, three-dimensional breathable mesh fabric, or viscose fiber fabric; wherein the thermal insulating material suitable for winter time is suede nap, genuine leather, or shearling. 45

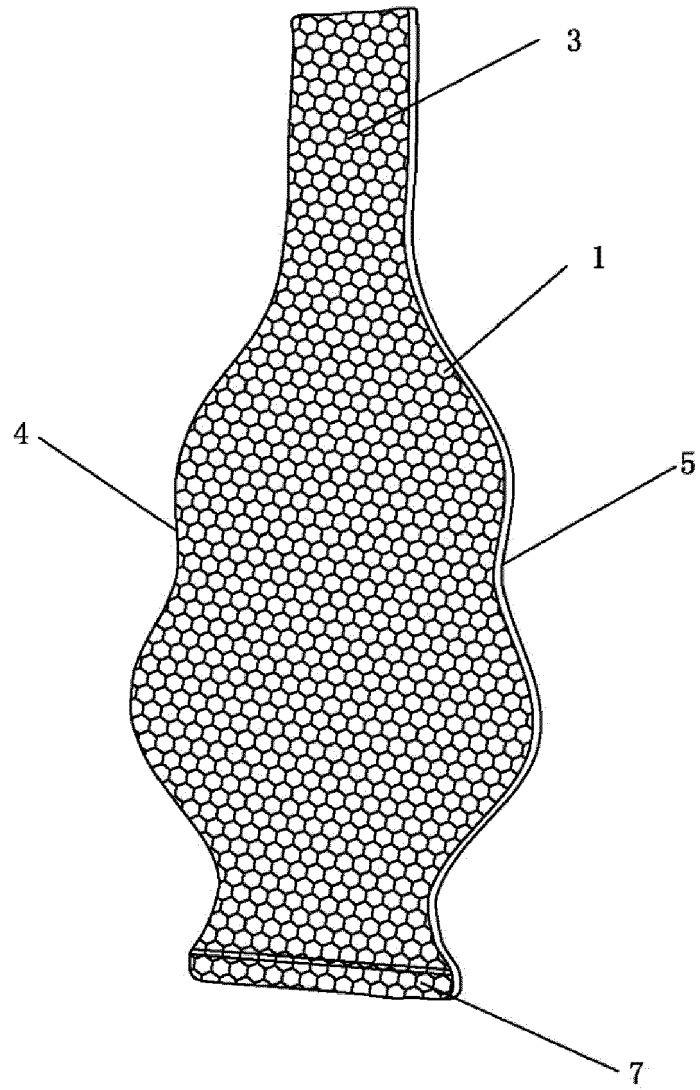


Fig.1

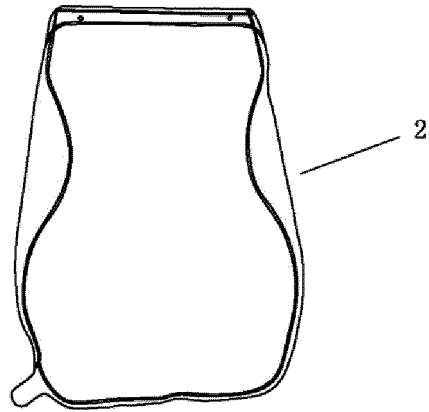


Fig.2

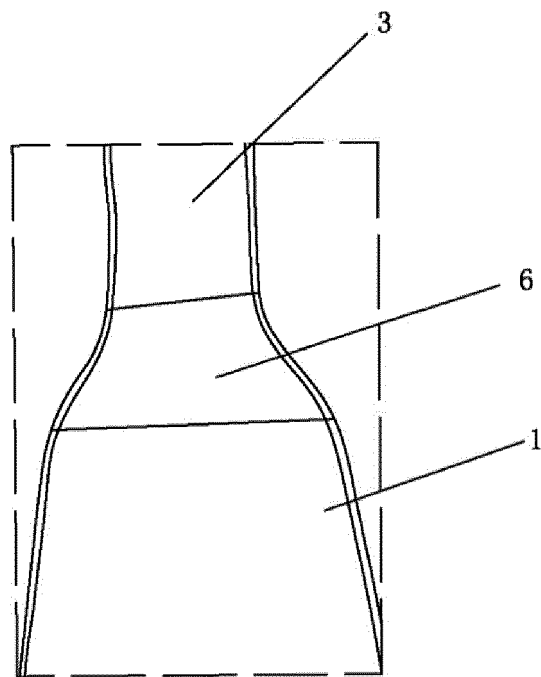


Fig.3

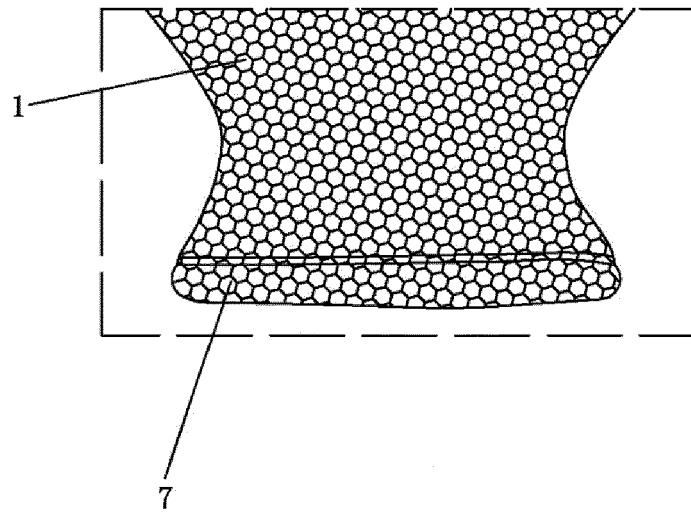


Fig.4

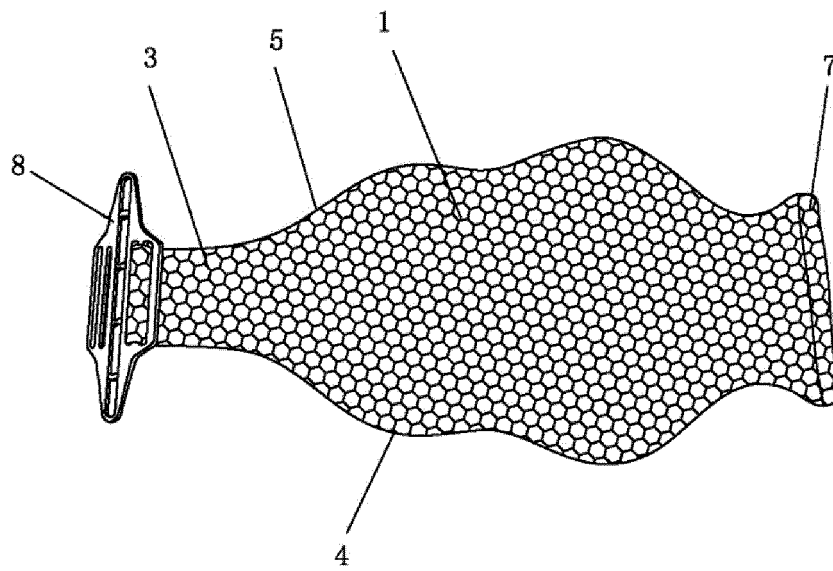


Fig.5



EUROPEAN SEARCH REPORT

Application Number
EP 15 15 2624

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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	US 2013/076091 A1 (LIMPAITON THONGCHAI [TH] LIMPAITON TONGCHAI [TH]) 28 March 2013 (2013-03-28) * claims 1,10; figures *	1-6	INV. A47C7/46 A47C27/08
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The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (IPC)
			A47C
Place of search		Date of completion of the search	Examiner
The Hague		17 June 2015	Amghar, Norddin
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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17-06-2015

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