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(54) **SUPPORT CUSHIONS INCLUDING A MIXED FILLING**

(57) A support cushion is provided that makes use of a blend of materials for providing comfort and support to the body of a user. The support cushion includes a filling comprised of a plurality of fibers and a plurality of

flexible foam fragments. A sleeve comprised of a flexible foam is also included in the support cushion and encapsulates the filling.

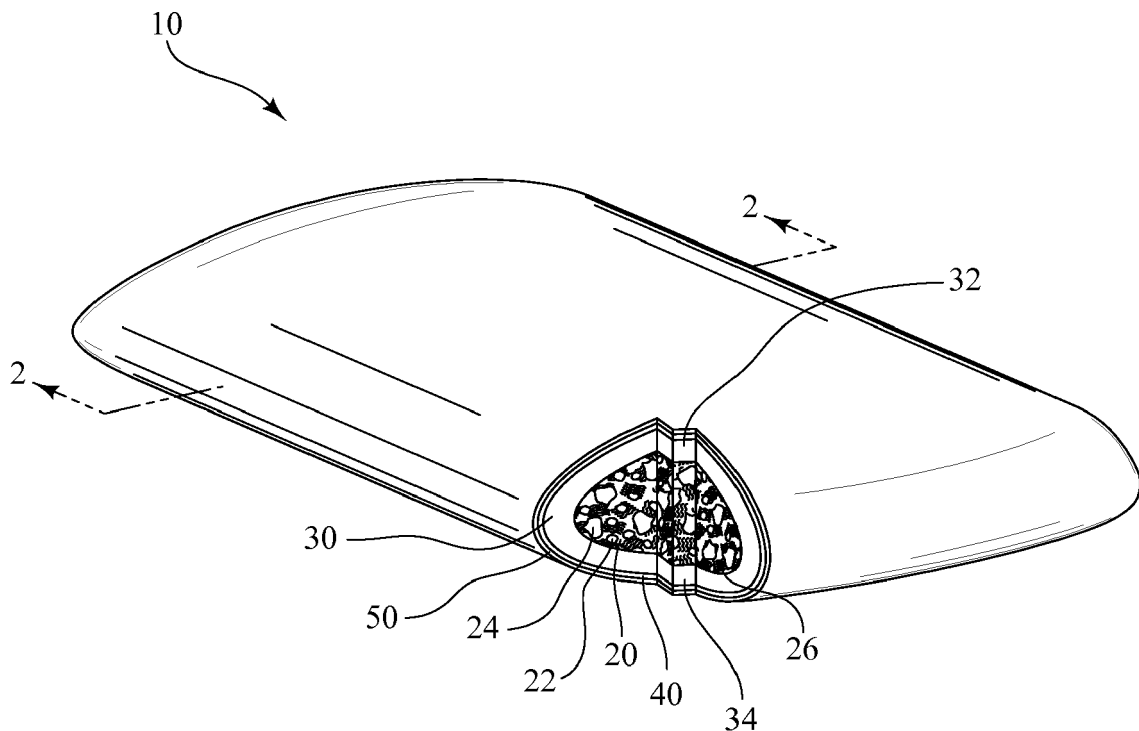


FIG. 1

Description

TECHNICAL FIELD

[0001] The present invention relates to support cushions including a mixed filling. In particular, the present invention relates to support cushions, such as pillows, that make use of a filling comprised of a plurality of fibers and a plurality of flexible foam fragments to provide comfort and support to the body of a user, or a portion thereof, resting on the support cushion.

BACKGROUND

[0002] As is generally the case with support cushions and, in particular, pillows, the effectiveness and desirability of the support cushion is partly a function of how well the support cushion supports the body of a user and partly a function of how well the support cushion conforms to the body of a user and provides a feeling of softness. In this regard, many users find support cushions that are filled with polyester fibers to be particularly desirable as such support cushions significantly deform and provide a feeling of softness when the body of a user, or a portion thereof, is placed on the support cushion. That deformation and feeling of softness, however, is often accompanied by a lack of support that, in turn, leaves many users looking for alternatives to traditional polyester fiber-filled support cushions.

[0003] One alternative to traditional polyester fiber-filled support cushions, and the lack of support provided by such support cushions, are support cushions comprised of temperature-sensitive flexible foam. For example, support cushions comprised of temperature-sensitive visco-elastic foam are often desirable as such support cushions are able to change shape and conform to the body of a user based, at least in part, upon the temperature of the supported body part. However, that conformance, while providing an increased amount of support, occasionally causes some users to find visco-elastic support cushions to be overly hard, and thus, undesirable for use as a pillow.

SUMMARY

[0004] The present invention relates support cushions including a mixed filling. In particular, the present invention relates to support cushions, such as pillows, that make use of a filling comprised of a plurality of fibers and a plurality of flexible foam fragments to provide comfort and support to the body of a user, or a portion thereof, resting on the support cushion. Thus, the support cushions of the present invention allow a user to obtain the feeling of softness associated with a support cushion that includes a plurality of flexible fibers, but without the reduction in support that may be found in such fiber-filled support cushions.

[0005] In one exemplary embodiment of the present

invention, a support cushion is provided in the form a pillow that includes a filling comprised of a plurality of fibers and a first flexible foam in the form of a plurality of flexible foam fragments. The pillow also includes a sleeve comprised of a second flexible foam. The sleeve includes a first side and a second side opposite the first side that collectively encapsulate the filling.

[0006] Both the first flexible foam and the second flexible foam are generally comprised of flexible foam that is capable of suitably distributing the pressure from a user's body or portion thereof across the support cushion. In some embodiments, the flexible foam is a visco-elastic foam that has a desired density and hardness, and that allows pressure to be distributed uniformly across the support cushion. In some embodiments, both the first flexible foam included in the filling and the second flexible foam included in the sleeve are comprised of a visco-elastic foam. In certain embodiments, the visco-elastic foam comprising the sleeve can have a density less than that of the visco-elastic foam comprising the plurality of flexible foam fragments included in the filling, such that the visco-elastic foam comprising the sleeve provides a softer surface on which to rest, while the visco-elastic foam comprising the plurality of flexible foam fragments provides a desired amount of support.

[0007] With further respect to the visco-elastic foam included in the filling of the support cushion, the plurality of flexible foam fragments comprising the first flexible foam can also be configured to improve the comfort and support provided by the support cushion. For example, in some embodiments, the plurality of flexible foam fragments are comprised of a first portion of flexible foam fragments and a second portion of flexible foam fragments, where the densities of the first and second portion of flexible foam fragments are not the same. In this regard, in certain embodiments, the first portion of flexible foam fragments can have a density that is less than the density of the second portion of flexible foam fragments, such that the first portion of flexible foam fragments is configured to provide a soft surface on which to rest the body of a user, while the second portion of flexible foam fragments is configured to provide support to the body of a user.

[0008] With further respect to the filling, the plurality of fibers included in an exemplary support cushion can be comprised of natural fibers, synthetic fibers, or combinations thereof. In some embodiments, the plurality of fibers include only synthetic fibers, such as, in some embodiments, polyester fibers that are commonly used to fill pillows. Regardless of the types of fibers included in an exemplary support cushion, however, the plurality of fibers are generally evenly dispersed among the plurality of flexible foam fragments and are included in the filling in an amount sufficient to prevent the flexible foam fragments from clumping together and obstructing the movement of air through the support cushion. For example, in some embodiments, to provide for a sufficient amount of air movement through the sleeve, the plurality of poly-

ter fibers comprise about 50% of the volume of the filling, with the remaining 50% of the volume of the filling being comprised of the plurality of flexible foam fragments (e.g., about 25% of the first portion of flexible foam fragments and about 25% of the second portion of flexible foam fragments).

[0009] To protect the sleeve, the support cushion further includes a liner that surrounds the sleeve. In some embodiments, the liner is comprised of a netting that includes an amount of phase change material, such that the body of a user, or a portion thereof, resting on the pillow is provided with a cooling sensation. The liner can also incorporate one or more flame-retardant materials, such that a flame-retardant barrier surrounds the sleeve and filling of the support cushion.

[0010] In addition to providing a liner that protects the sleeve and the underlying filling, the support cushion can, in certain embodiments, also include an outer cover that surrounds and protects the liner. Such an outer cover is typically comprised of a textile having a sufficient amount of durability, but that also has a sufficient amount of "breathability" to allow air and heat to travel through the outer cover, and allow the phase change material, if included, in the liner to still provide a cooling effect to a user resting on the pillow. For instance, in some embodiments, the outer cover is comprised of one-hundred percent cotton.

[0011] Further features and advantages of the present invention will become evident to those of ordinary skill in the art after a study of the description, figures, and non-limiting examples in this document.

BRIEF DESCRIPTION OF THE DRAWINGS

[0012]

FIG. 1 is a perspective view of an exemplary support cushion, in the form of a pillow, made in accordance with the present invention and with a portion of the support cushion removed to show the filling and the sleeve of the support cushion;

FIG. 2 is a partial cross-sectional view of the exemplary support cushion of FIG. 1 taken along line 2-2 of FIG. 1;

FIG. 3 is a perspective view of another exemplary support cushion, in the form of a pillow, made in accordance with the present invention and with a portion of the support cushion removed to show the filling and the sleeve of the support cushion;

FIG. 4 is a partial cross-sectional view of the exemplary support cushion of FIG. 3 taken along line 4-4 of FIG. 3; and

FIG. 5 is a cross-sectional view of exemplary support cushions for use in a chair and made in accordance with the present invention.

DESCRIPTION OF EXEMPLARY EMBODIMENTS

[0013] The present invention relates to support cushions including a mixed filling. In particular, the present invention relates to support cushions, such as pillows, that make use of a filling comprised of a plurality of fibers and a plurality of flexible foam fragments to provide comfort and support to the body of a user, or a portion thereof, resting on the support cushion. Thus, the support cushions of the present invention allow a user to obtain the feeling of softness associated with a support cushion that includes a plurality of flexible fibers, but without the reduction in support that may be found in such fiber-filled support cushions.

[0014] Referring first to FIGS. 1-2, in one exemplary embodiment of the present invention, a support cushion is provided in the form of a pillow 10 that includes a loose filling 20 comprised of a plurality of fibers 26 and a first flexible foam. The first flexible foam is comprised of a first portion of flexible foam fragments 22 and a second portion of flexible foam fragments 24. The pillow 10 also includes a sleeve 30 that is comprised of a second flexible and that has a first side 32 and a second side 34 opposite the first side 32.

[0015] The first portion of flexible foam fragments 22, the second portion of flexible foam fragments 24, and the sleeve 30 are each generally comprised of flexible foam that is capable of suitably distributing the pressure from a user's body or portion thereof across the pillow 10. Such flexible foams include, but are not limited to, latex foam, reticulated or non-reticulated visco-elastic foam (sometimes referred to as memory foam or low-resilience foam), reticulated or non-reticulated non-visco-elastic foam, polyurethane high-resilience foam, expanded polymer foams (e.g., expanded ethylene vinyl acetate, polypropylene, polystyrene, or polyethylene), and the like. In the embodiment shown in FIGS. 1 and 2, the first portion of flexible foam fragments 22, the second portion of flexible foam fragments 24, and the sleeve 30 are each comprised of visco-elastic foam. Generally, such visco-elastic foam has a hardness of at least about 10 N to no greater than about 80 N, as measured by exerting pressure from a plate against a sample of the material to a compression of at least 40% of an original thickness of the material at approximately room temperature (i.e., 21°C to 23°C), where the 40% compression is held for a set period of time as established by the International Organization of Standardization (ISO) 2439 hardness measuring standard. In some embodiments, the visco-elastic foam comprising the first portion of flexible foam fragments 22, the second portion of flexible foam fragments 24, and the sleeve 30 has hardness of about 10 N, about 20 N, about 30 N, about 40 N, about 50 N, about 60 N, about 70N, or about 80 N to provide a desired degree of comfort and body-conforming qualities.

[0016] The visco-elastic foam comprising the first portion of flexible foam fragments 22, the second portion of flexible foam fragments 24, and the sleeve 30 can also

have a density that assists in providing a desired degree of comfort and body-conforming qualities, as well as an increased degree of material durability. In some embodiments, the density of the first portion of flexible foam fragments 22, the second portion of flexible foam fragments 24, and the sleeve 30 is no less than about 30 kg/m³ to no greater than about 150 kg/m³. In some embodiments, the density of the first portion of flexible foam fragments 22, the second portion of flexible foam fragments 24, and the sleeve 30 is about 30 kg/m³, about 40 kg/m³, about 50 kg/m³, about 60 kg/m³, about 70 kg/m³, about 80 kg/m³, about 90 kg/m³, about 100 kg/m³, about 110 kg/m³, about 120 kg/m³, about 130 kg/m³, about 140 kg/m³, or about 150 kg/m³. In one particularly preferred embodiment, to provide a soft surface on which to rest the body of a user, or a portion thereof, while also providing a sufficient amount of support to the body of the user, the density of the first portion of flexible foam fragments 22 and the second portion of flexible foam fragments 24 is not the same. For example, in certain embodiments, the first portion of flexible foam fragments 22 has a density less than the density of the second portion of flexible foam fragments 24, such that the first portion of flexible foam fragments 22 are configured to provide a soft surface on which to rest, while the denser second portion of flexible foam fragments 24 provides a desired amount of support. Of course, the selection of a visco-elastic foam having a particular density will affect other characteristics of the foam, including its hardness, the manner in which the foam responds to pressure, and the overall feel of the foam, but it is appreciated that a visco-elastic foam having a desired density and hardness can readily be selected for a particular application or support cushion as desired.

[0017] Referring still to FIGS. 1-2, in this exemplary embodiment, the sleeve 30 of the pillow 10 encapsulates the filling 20 of the pillow 10. As noted, the sleeve 30 is also comprised of a visco-elastic foam. However, the sleeve 30 is comprised of a continuous piece of visco-elastic foam, as opposed to visco-elastic foam fragments, and typically has a density, hardness, or both that is less than that of the first portion of flexible foam fragments 22 and/or the second portion of flexible foam fragments 24 included in the filling 20, such that the sleeve 30 provides an even softer surface on which to rest the body of a user or a portion thereof. For example, in certain embodiments, the pillow 10 includes a sleeve 30 that is comprised of a visco-elastic foam with a density of about 35 kg/m³ and a hardness of about 10 N, while the first portion of flexible foam fragments 22 and the second portion of flexible foam fragments 24 included in the filling 20 have a density of about 40 kg/m³ and a hardness of about 15 N.

[0018] With further respect to the filling of an exemplary support cushion of the present invention, the plurality of fibers included in a filling can include natural fibers, such as cotton or silk fibers, synthetic fibers, such as polyester fibers, or combinations thereof. In the embodiment shown in FIGS. 1-2, the plurality of fibers 26 in the pillow

10 are polyester fibers and are not only evenly dispersed among the first portion of flexible foam fragments 22 and the second portion of flexible foam fragments 24, but are included in the filling 20 in an amount sufficient to prevent the first portion of flexible foam fragments 22 and the second portion of flexible foam fragments 24 from clumping together and obstructing the movement of air through the pillow 10. In particular, in the pillow 10, the plurality of fibers 26 comprise about 50% of the volume of the filling 20. The remaining 50% of the volume of the filling 20 in the pillow 10 is then comprised of the first portion of flexible foam fragments 22 and the second portion of flexible foam fragments 24, with the first portion of flexible foam fragments 22 comprising about 25% of the volume of the filling and the second portion of flexible foam fragments 24 comprising about 25% of the volume of the filling. Of course, it is contemplated that the amount of fibers included in an exemplary support cushion, as well as the amount flexible foam fragments, can be adjusted and selected for a particular application or support cushion as desired, such that support cushions having different feels (e.g., soft, medium, or hard) can readily be produced by varying the amount or types of materials included in a filling.

[0019] Referring still to FIGS. 1-2, to protect the sleeve 30 of the pillow 10, the pillow 10 further includes a liner 40 that surrounds the sleeve 30 and is typically comprised of one or more flame-retardant materials, such that a flame retardant barrier surrounds the sleeve 30 and filling 20 of the pillow 10. The pillow 10 also includes an outer cover 50 that surrounds the liner 40. The outer cover 50 is typically comprised of a textile having a sufficient amount of durability to protect the underlying liner 40 and sleeve 30 of the pillow 10, but also having a sufficient amount of "breathability" to allow air and heat to travel through the sleeve 30 and liner 40, and through the outer cover 50. In the embodiment shown in FIGS. 1 and 2, the outer cover 50 is comprised of one-hundred percent cotton to allow for sufficient movement of air through the pillow 10. However, it is further contemplated that numerous other textiles, including silk and textiles having a lower percentage of cotton can also be readily used to produce an outer cover.

[0020] Referring now to FIGS. 3-4, in another exemplary embodiment of the present invention, an exemplary support cushion is provided in the form of a pillow 110 that includes a filling 120 comprised of a plurality of fibers 126 and a first flexible foam, which, in turn, is comprised of a first portion of flexible foam fragments 122 and a second portion of flexible foam fragments 124. Like the pillow 10 shown in FIGS. 1 and 2, the pillow 110 also includes a sleeve 130 that encapsulates the filling 120 and has a first side 132 and a second side 134, a liner 140 that surrounds the sleeve 130, and an outer cover 150. Unlike the pillow shown in FIGS. 1-2, however, the first side 132 and the second side 134 of the sleeve 130 are not identical to one another. Rather, in the pillow 110, the first side 132 of the sleeve 130 has a curved profile

that acts to align the head, neck and shoulders of a user lying on the first side 132. Additionally, in the pillow 110, the sleeve 130 and the liner 140 of the pillow 110 also include an amount of phase change material to provide a cooling sensation to the body of a user, or a portion thereof, resting on the pillow 110. In this regard, and as indicated by the stippled portions of the sleeve 130 and the liner 140 shown in FIGS. 3-4, the phase change material is generally positioned and configured to place the body of user resting on the pillow 110 in close proximity to the phase change material.

[0021] The phase change material that is incorporated into the sleeve 130 and the liner 140 is typically comprised of microspheres that include substances having a high heat of fusion and that store or release heat as the substances oscillate between solid and liquid form (i.e., phase change materials). As the phase change material included in the sleeve 130 and the liner 140 changes from a solid to a liquid form (i.e., melts) as the result of heat generated by a user lying on the pillow 110, the phase change material continually absorbs heat and provides a cooling effect to the user until all of the phase change material has been transformed from a solid to a liquid form. In the sleeve 130 and the liner 140, the phase change material is incorporated into the sleeve 130 and the liner 140 by infusing and coating select areas of the sleeve 130 and the liner 140 with the microspheres of phase change material. However, it is also contemplated that phase change material may be similarly incorporated into a number of different portions of an exemplary sleeve and liner of a support cushion of the present invention, as well as into the filling of an exemplary support cushion without departing from the spirit and scope of the subject matter described herein.

[0022] With further respect to the liner 140 of the pillow 110, the liner 140 can be comprised of a number of different materials into which phase change material can be incorporated. In one preferred embodiment, the liner 140 is comprised of a netting that has been passed through a bath including phase change material, such that the phase change material adheres to and can subsequently be fixed to the netting (see, e.g., U.S. Patent Nos. 8,404,345; 8,329,223; 7,794,507; and 7,186,273, which are each incorporated herein by this reference in their entirety).

[0023] As yet another refinement to the present invention, although the support cushions shown in FIGS. 1-4 are in the form of pillows 10, 110 and are dimensionally sized to support the head of a user, it is contemplated that the features described herein are equally applicable to mattresses, seat cushions, seat backs, neck pillows, leg spacer pillows, mattress toppers, overlays, and the like. As such, the phrase "support cushion" is used herein to refer to any and all such objects having any size and shape, and that are capable of or are generally used to support the body of a user or a portion thereof. For example, as shown in FIG. 5, support cushions made in accordance with the present invention are incorporated

into a seat 312 and back 314 of a desk chair 310. Each support cushion of the desk chair 310 includes a filling 320 comprised of a plurality of fibers 326, a first portion of flexible foam fragments 322, and a second portion of flexible foam fragments 324. Each support cushion also includes a sleeve 330 having a first side 332 and a second side 334 opposite the first side 332 that collectively encapsulate the filling 320. The sleeve 330 is surrounded by a liner 340 and an outer cover 350, and is comprised of a continuous piece of visco-elastic foam, such that the sleeve 330, along with the filling 320, provides the body of a user resting on the desk chair 310 with a feeling of softness, but without the reduction in support found in support cushions comprised of only flexible fibers.

[0024] Throughout this document, various references are mentioned. All such references are incorporated herein by reference, including the references set forth in the following list:

REFERENCES

[0025]

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5. U.S. Patent No. 7,979,374 to Landvik, issued July 12, 2011, and entitled "Product Demonstration System and Method for Using the Same."
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7. U.S. Patent No. 7,735,169 to Wassilefsky, issued Jun. 15, 2010, and entitled "Comfort Pillow."
8. U.S. Patent No. 7,707,670 to Fogg, issued May 4, 2010, and entitled "Pillow top for a Cushion."
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24. U.S. Design Patent No. D456,660 to Landvik, issued May 7, 2002, and entitled "Contoured Head Pillow." 50
25. U.S. Patent Application Publication No. 2011/0252562 by Mikkelsen, et al., published Oct. 20, 2011, and entitled "Adjustable-Firmness Body Support and Method." 55
26. U.S. Patent Application Publication No. 2007/0094803 by Fogg, published May 3, 2007, and entitled "Pillow top for a Cushion."
27. U.S. Patent Application Publication No. 2006/0288490 by Mikkelsen, et al., published Dec. 28, 2006, and entitled "Reticulated Material Body Support and Method."
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30. U.S. Patent Application Publication No. US2005/0202214 by Landvik, published Sep. 15, 2005, and entitled "Cushion."
31. U.S. Patent Application Publication No. 2005/0084667 by Landvik, et al., published Apr. 21, 2005, and entitled "Laminated Visco-Elastic Support."
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35. U.S. Patent Application Publication No. 2003/0171954 by Guerin, et al., published Sep. 11, 2003, and entitled "Method of Managing the Provision of Healthcare and System for Effecting Same."
36. U.S. Patent Application Publication No. 2001/0021438 by Landvik, published Sep. 13, 2001, and entitled "Cushion."
- [0026]** One of ordinary skill in the art will recognize that additional embodiments or implementations are possible without departing from the teachings of the present invention or the scope of the claims which follow. This detailed description, and particularly the specific details of the exemplary embodiments and implementations disclosed herein, is given primarily for clarity of understanding, and no unnecessary limitations are to be understood therefrom, for modifications will become obvious to those skilled in the art upon reading this disclosure and may be made without departing from the spirit or scope of the claimed invention.

Claims

1. A support cushion, comprising:
- a filling including a plurality of fibers and a first flexible foam, the first flexible foam comprised of a plurality of flexible foam fragments; a sleeve encapsulating the filling, the sleeve comprised of a second flexible foam.
2. The support cushion of claim 1, wherein the first flexible foam, the second flexible foam, or both is a visco-elastic foam.
3. The support cushion of claim 2, wherein both the first flexible foam and the second flexible foam are visco-elastic foam, and wherein the first flexible foam has a density greater than the density of the second flexible foam.
4. The support cushion of claim 1, wherein the plurality of flexible foam fragments are comprised of a first portion of flexible foam fragments and a second portion of flexible foam fragments, the first portion of flexible foam fragments having a density greater than the density of the second portion of flexible foam fragments.
5. The support cushion of claim 1, wherein the plurality of fibers are comprised of natural fibers, synthetic fibers, or both, or wherein the plurality of fibers are comprised of synthetic fibers, or wherein the plurality of fibers are polyester fibers, and/or wherein the filling is comprised of about 50% of the plurality of fibers and about 50% of the first flexible foam.
6. The support cushion of claim 4, wherein the filling is comprised of about 25% of the first portion of flexible foam fragments, about 25% of the second portion of flexible foam fragments, and about 50% of the plurality of fibers.
7. The support cushion of claim 1, further comprising a first amount of phase change material incorporated into the sleeve.
8. The support cushion of claim 1, further comprising a liner surrounding the sleeve.
9. The support cushion of claim 8, wherein the liner includes a second amount of phase change material, or wherein the liner is comprised of netting, or wherein the liner is comprised of a flame-retardant material.
10. The support cushion of claim 8, further comprising an outer cover surrounding the liner.
11. The support cushion of claim 10, wherein the outer cover is comprised of a textile.
12. A pillow, comprising:
- a filling including a plurality of polyester fibers and a plurality of visco-elastic foam fragments; a sleeve comprised of a visco-elastic foam and encapsulating the filling; and a liner surrounding the sleeve.
13. The pillow of claim 12, further comprising an outer cover surrounding the liner, the outer cover being comprised of a textile.
14. A pillow, comprising:
- a filling having a plurality of fibers and a plurality of flexible foam fragments; and a sleeve encapsulating the filling, the sleeve having at least one surface configured to provide a cooling effect to a user lying on the pillow.
15. The pillow of claim 14, wherein the filling is comprised of about 50% of the plurality of fibers and about 50% of the plurality of flexible foam fragments.

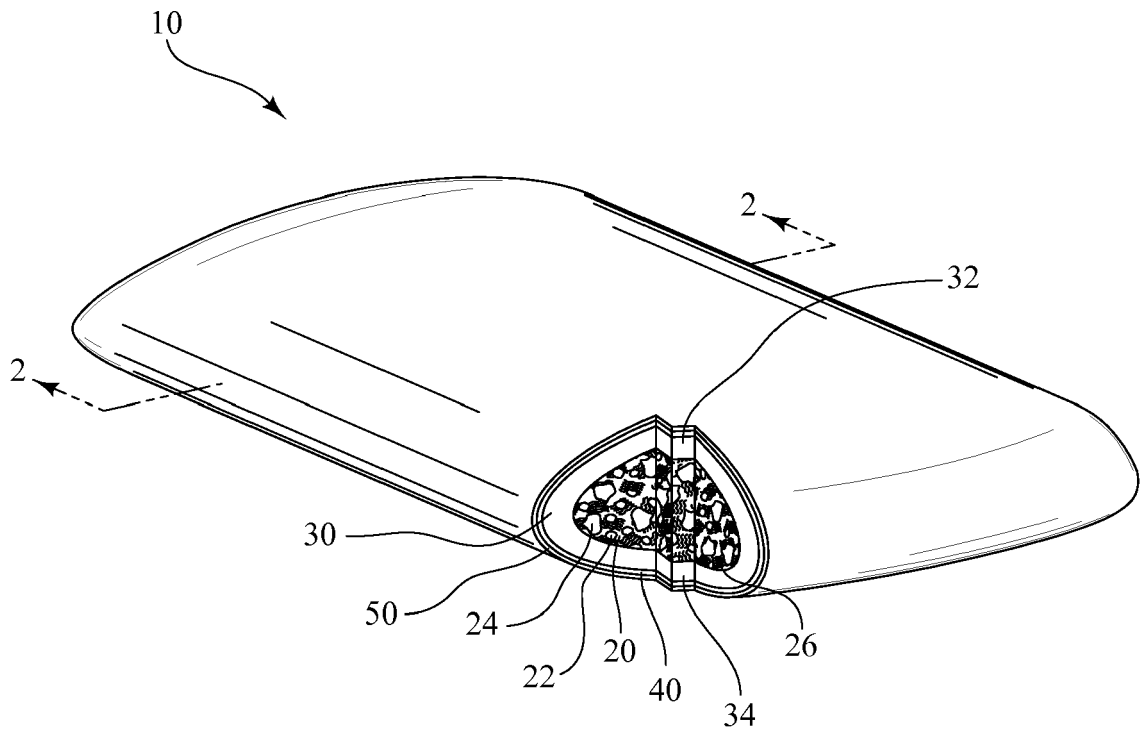


FIG. 1

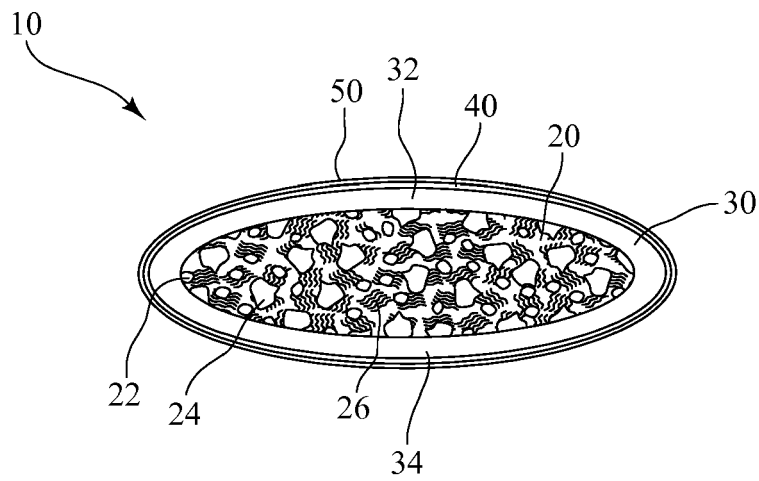


FIG. 2

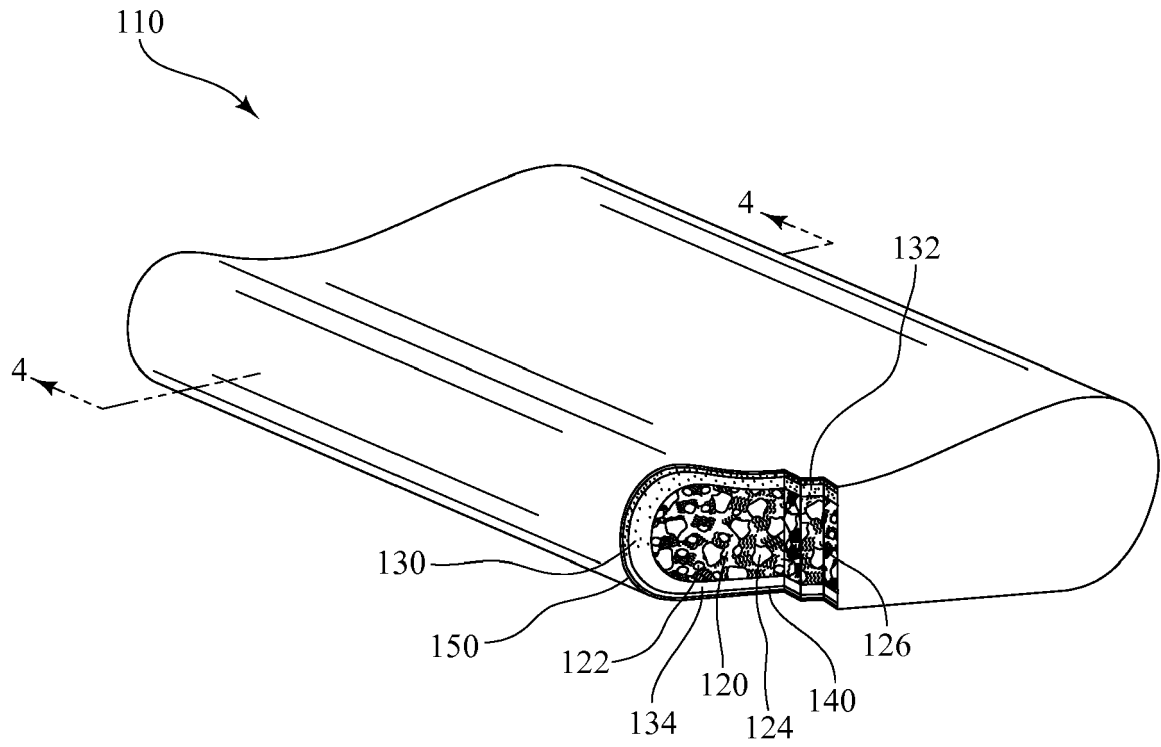


FIG. 3

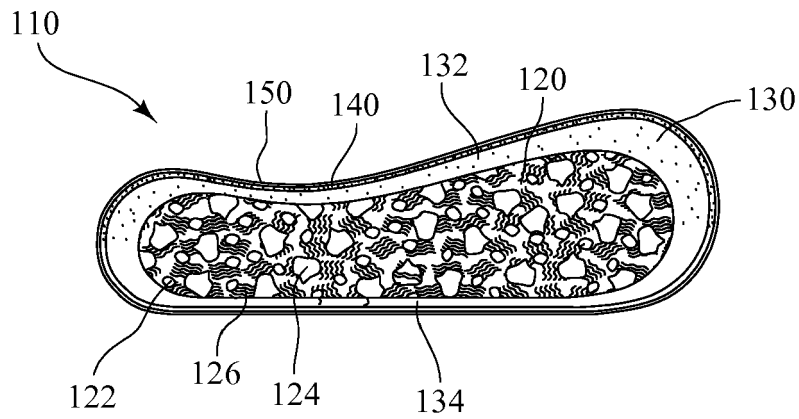


FIG. 4

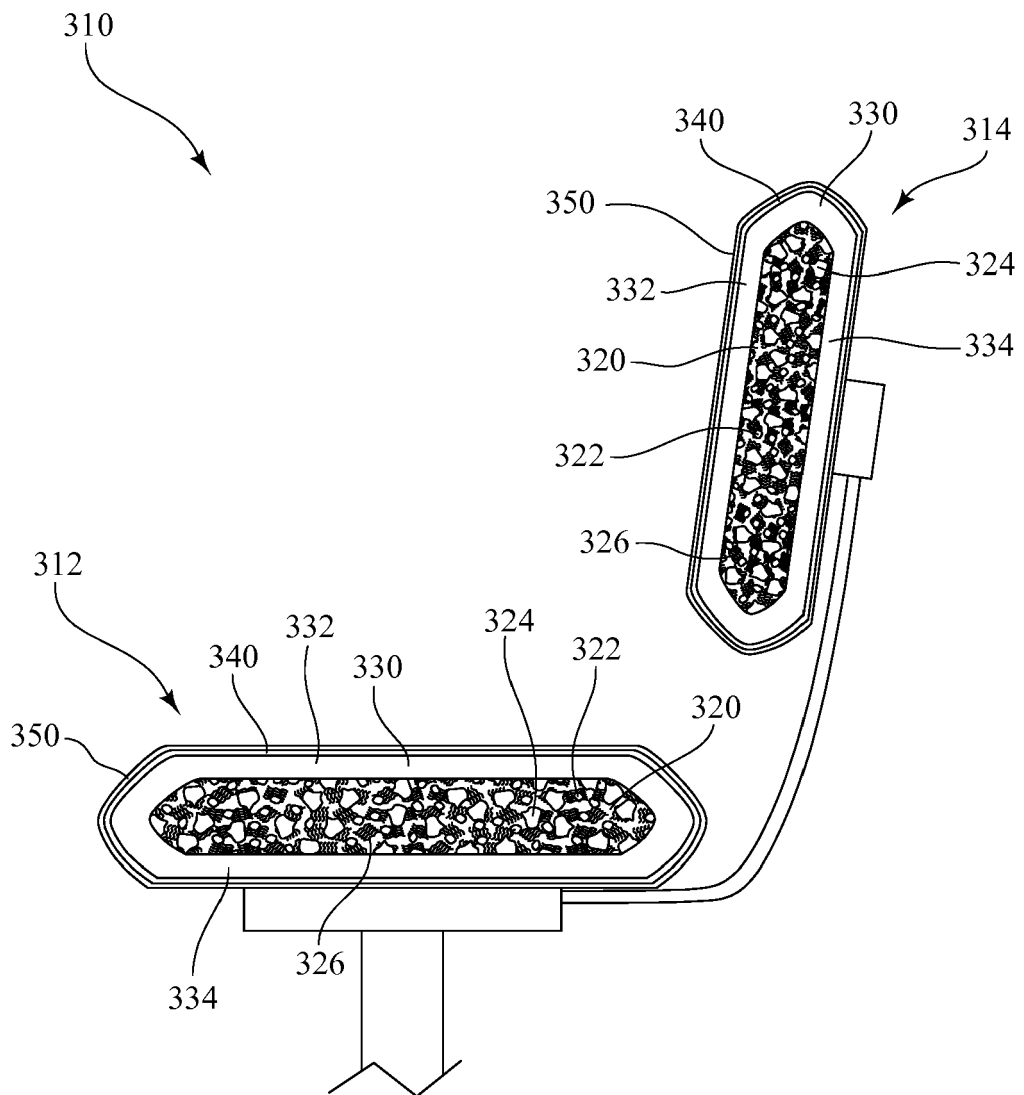


FIG. 5



EUROPEAN SEARCH REPORT

Application Number
EP 16 15 9386

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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)
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