FOAM CORE PILLOW OR MATTRESS ALLOWING ADJUSTMENT FOR REBOUND SPEED

Inventor: Martin Rawls-Meehan, Boston, MA (US)

Correspondence Address:
BROWDY AND NEIMARK, PLLC.
624 NINTH STREET, NW
SUITE 300
WASHINGTON, DC 20001-5303 (US)

Assignee: JTMD, LLC, Beverly Hills, MI

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ARFLOW-NS SEALING DEVICE

A foam core pillow or mattress comprising a breathable foam core in the shape of a pillow or mattress, an outer cover shaped to cover the foam core, formed of at least a layer of non-breathable material, a layer of breathable covering fabric, and an airflow device which can be selectively opened or closed to regulate airflow through the foam core.
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RELATED APPLICATIONS

[0001] The present application claims the benefit of U.S. Provisional Application No. 60/580,398, filed Jun. 18, 2004, which is incorporated by reference herein in its entirety.

FIELD

[0002] The present invention relates to a pillow or mattress that includes a foam core, which has the ability to rebound to its expanded shape quickly after pressure is released.

BACKGROUND

[0003] Memory foam pillows and mattresses are known. Called by the general names of visco-elastic foam or memory foam, this type of foam, originally developed for NASA, has been used with great effectiveness for over 20 years in the medical industry—mainly in the treatment of bed sores.

[0004] However, “memory foam” did not make its way into the consumer market until the manufacturers of Tempurpedic began marketing the foam to the public around 15 years ago. However, over the last few years memory foam has become extremely popular, and many brands have followed Tempurpedic’s lead by adding memory foam pillows and mattresses to their product lines.

[0005] Most memory foams are temperature sensitive, and their behavior, or rebound speed, can be influenced by the temperature of the environment around the foam. The rebound speed of memory foam is determined by the density of the foam itself.

[0006] Latex foam pillows are known. They are typically covered in with a cotton fabric and sold on the merits of their elasticity and resiliency. Latex foam is not temperature sensitive, but it rebounds faster than memory foam and changes in the density of the foam does not make much difference in terms of rebound speed.

[0007] These prior pillows and mattresses have rebound speeds that are fixed by the nature of the foam cores, thus the rebound speed cannot be adjusted by the user. Further, the visco-elastic foam cores have different behaviors in different temperatures. In particular, because the visco-elastic foam is temperature sensitive, it turns to a soft, putty-like material in really hot climates and it gets rock hard in cold climates. This can cause problems for the user.

[0008] U.S. Published Application No. U.S. 2004/0019972 to Schecter et al discloses a pillow or other cushioning device comprised in part of an upper pocket with a reception cavity for housing a loose or grouped non-integral filler such as down, fiberfill, or the like; an additional lower pocket for receiving an additional filler material; and a flexible core positioned therebetween. Both the first and second pockets may contain a filler material such as down, and the intermediate pocket may contain a core filler such as a visco-elastic foam core (see, for example, claims 40-42). The pillow cover may comprise any suitable material, such as polyester, and woven and unwoven materials.

Further, a zipper on one longitudinal end provides the consumer with easy access to the pillow interior. Additionally, different grade fabrics or different type material may be used, such as netting and cloth combination, for the outer cover layer and the upper bottom layer of the pillow.

[0009] Sharples, in U.S. Published Application No. U.S. 2003/0000020, discloses a permeable mattress pad or pillow comprised of a substantially rigid base of cross members, with holes between cross members so as to permit airflow through the mattress base. Cushioning supports attach to various cross members of the base, and a mesh overlays the cushioning members. A cover may also be provided atop the mesh, wherein the cover comprises at least one layer of permeable fabric, permeable foam, permeable fibers, or perforated rubber.

[0010] U.S. Pat. No. 6,230,347 to Alexander provides for an orthopedic comfort pillow comprised of a compliant overlay defining an exterior surface, wherein the overlay is formed of a plurality of partitioned chambers extending parallel to the front and rear edges; and a firmer, supporting core layer disposed beneath the compliant overlay, wherein the supporting core possesses a bulbous front section, a waisted midsection, and a back bolster. Additionally, the chambers of the compliant overlay are filled with compliant particulate material of differing densities, increasing in firmness and support from the front to rear. The firmer, supporting core layer may comprise either an inflatable material or a foam.

[0011] U.S. Published Application No. 2001/0018777 to Walpin and U.S. Pat. No. 6,182,312 discloses an orthopedic pillow comprised of components of varying densities. More specifically, the pillow includes a compressible, resilient core body (e.g. foam) with top and bottom portions, and first and second rounded portions. The core includes at least one opening that extends across its length, with a resilient insert snugly fitting into the opening. A cover of softer foam surrounds the core, and a second opening formed in the cover is designed to receive a second resilient insert. This second insert may be of the same or different compressibility as the first insert, and may comprise down or fibrous material. See also Walpin U.S. Pat. No. 6,408,467.

[0012] Walpin U.S. Pat. No. 6,317,908 discloses an orthopedic support device comprised of a firm core with recesses at the top of the core to receive a memory foam layer. Atop the memory foam layer rests a cushioning layer. Additionally, a C-shaped boundary layer wraps around a first lengthwise edge of the core, a second surface of the core, and a second edge of the firm core. Finally, disposed within the firm core are one or more inflatable bladders. The firm core may comprise high density polyurethane foam, and the foam layer and C-shaped boundary layer both may be constructed of visco-elastic memory foam. The bladders may be inflated with either air or water.

SUMMARY

[0013] An object of the present invention is to provide a foam core pillow or mattress that has both a fast and a slow rebound speed.

[0014] It is a further object of the present invention to provide a foam core pillow or mattress that is comfortable.
It is a further object of the present invention to provide a pillow or mattress having a foam core that has a rebound speed that can be adjusted by the user to his or her liking.

It is a further object of the present invention to provide a pillow or mattress having a foam core that does not change behavior in different temperatures.

The scope and content of the present invention is not intended to be limited by or to the above mentioned objects.

BRIEF DESCRIPTION OF THE DRAWINGS

For better understanding of the invention and additional objects and advantages thereof, reference is made to the following detailed description and accompanying drawing of a preferred embodiment, wherein

FIG. 1 illustrates a pillow in accordance with one embodiment of the present invention;

FIG. 2 illustrates a cross sectional view of the pillow of FIG. 1, along the line 2-2, in accordance with one embodiment of the present invention;

FIG. 3 illustrates a cross sectional view of the outer cover of FIG. 2, along the line 3-3, in accordance with one embodiment of the present invention; and

FIG. 4 illustrates a partial cut-away view of a pillow in accordance with one embodiment of the present invention.

DETAILED DESCRIPTION

The invention will be described in general with reference to FIGS. 1 through 4. The same principles discussed at length here regarding a pillow embodiment of the invention also apply for a mattress embodiment, with the exception of minor design adjustments for the general shape and size of the mattress. So, from here on we refer to the invention as it relates to pillows, keeping in mind that the same general principles would apply to the mattress design.

The present invention is a complete airflow system for the pillow that allows the user to control the speed at which the pillow regains its original shape. The inventor sought to create a pillow that functions like memory foam, but allows the rebound speed to be controlled (which no “memory foam” pillow can do) and feels soft like down while still maintaining excellent rebounding and elasticity properties. The inventor believes that he has accomplished just that with the present design.

According to the present invention, when the pillow is set to rebound slowly, it feels firmer, and when it is set to rebound quickly, it is softer. That is, the feel and comfort of the pillow is improved by being able to set the rebound speed, because there is a direct correlation between rebound speed and softness/firmness. The airflow device actually allows the user to adjust the softness/firmness of the pillow. Thus, when the airflow device is closed or slightly open, the pillow will feel firmer, and when it is open the pillow will feel softer. The logic behind this is the same logic as the effect of rebound speed. The less air you release over a given period of time, the firmer the pillow feels and the slower it gets pressed down at a given force. Essentially, the speed with which it rebounds is directly related to the speed it is pressed down at said given force. If it rebounds slowly it means it takes more pressure to push it down, meaning it feels firmer. The opposite is true when the air-flow device is open.

The pillow is composed of three main components: 1) a breathable foam core (ideally latex foam), 2) two layers of fabric covering, the inner-most of which is non-breathable (see FIGS. 1-4), and 3) one or more airflow devices strategically placed on the side(s) of the pillow to allow the user to regulate/adjust the flow of air in and out of the foam core section of the pillow. The outermost layer of fabric A (again, see FIGS. 1-4), the one everyone will see from the outside, may be made of a standard cotton or polyester material, or any other suitable material. The layer C under the fabric layer A is made of a non-woven material that is not permeable to air (any non-breathable material will do here, however). In between the outer fabric layer A and the inner, non-breathable layer C, soft material B, such as goose down (or duck down, synthetic down, silk, shredded latex, shredded polyurethane (PU), cotton fiber-fill, synthetic fiber-fill, any combination therefore, and/or other similar materials) may be included, but are not required. The placement of these filling materials between the outer layer A and the inner non-breathable layer C is not necessary to the functioning of the invention, but it can enhance the feel of softness and comfort. This will all be discussed in more detail below.

To make one embodiment of this invention, one could surround a breathable foam material (in this case, latex, but any standard, highly breathable PU foam would work) with a cover that is not breathable, leaving only an airflow device on the side to allow air to flow in and out of the pillow. This airflow device (to be discussed in more detail below) can be opened and closed to various points to control the speed of the airflow in and out of the pillow. The airflow device makes the breathable foam material behave like a memory foam, providing the advantages of memory foam, without the disadvantages discussed above. The key to this effect is that latex foam, and other highly breathable foams, get their elasticity (rebounding properties) by releasing air from the pillow and sucking air back into the pillow. By controlling the amount of air that is allowed to flow in and out of the pillow, one can control the elasticity of the foam core, thereby controlling the rebound speed of the pillow as a whole. A fast speed (one where the airflow device was opened to a great degree) would make the pillow feel almost like a normal latex pillow in a normal cover. A slow speed (one where the device was opened to a small degree) would make the pillow feel like a very slow reacting memory foam; it would sink slowly and rise very slowly. Latex foam is frequently identified by name here because it is the most resilient and elastic of the highly breathable foams, and thus would have the greatest functionality in this embodiment of the invention. However, other highly breathable foams would work as well and are intended to be within the scope of the claimed invention.

To provide the user with control over the rebound speed of the pillow, one must make sure that (excluding the outer cotton or polyester cover A) the airflow device E (described below) is the only breathable part of the pillow. For this, we use a material that has a very fine plastic coating to make it non-permeable to air for the inner-most layer C,
which is the layer that encases the foam directly. The main function of the layer C is to make the pillow cover such that it is not breathable. So, whether it is plastic or a material coated in plastic, or any other non-breathable material, the important point is that the function remains the same; it is not breathable. It is also ideal, but not necessary, that the material be soft and not crinkle when pressure is applied to the pillow. The material that we intend to use for mass production is a coated piece of synthetic fabric that is often used as an inner lining in down clothing. It is considered within the skill or the ordinary artisan to find alternative, non-breathable suitable materials.

[0029] The layer of filling B that can be provided between the non-breathable layer C (mentioned above) and the outer cover A adds a layer of cushioning to the pillow, as well as enhances the memory feel of the pillow. This layer could be made from, for example down, synthetic down, silk, shredded latex, shredded polyurethane foam, cotton fiber-fill, or synthetic fiber-fill, or any combination thereof. For example, if down were used as the filling material, the down would suck in air from the top layer (the cotton outer layer), and recover slowly like the foam beneath it. The rebound of the down is enhanced by the rebound of the foam, so that unlike a regular down pillow, it always regains its shape. So, the main function of the down is to enhance the soft “feel” of the pillow. However, the layer of down is not crucial to the invention either. The pillow can function without the layer of down. The same is true of the other filling materials noted above. Thus, if there is only the plastic coated non-breathable layer of fabric above the foam, and then the layer of cotton above that non-breathable layer, the pillow still has a unique slow rebounding effect that can be controlled to various speeds by the airflow device (described below). Now, the down layer is, of course, a possible feature of the invention, but the invention is characterized by surrounding breathable latex foam with a non-breathable cover (with the exception of the air flow device) such that the rebounding speed of the latex foam can be controlled by the user.

[0030] As mentioned above, the latex foam itself is breathable. It is an elastic foam because it is rubber based, and it gets its elasticity by releasing and absorbing air. Latex foam pillows are often designed with pin-holes throughout the pillow to help this airflow throughout the foam. Pillows according to the present invention can be designed with more pin-holes (over 1000 on a 26x20x7 standard size pillow) than many other latex pillows to make them even more “breathable,” so to speak. However, even without the pin-holes, the latex foam remains breathable enough for the device to work, but the more pin-holes there are in the pillow the more breathable it is, and the more breathable it is the higher the degree of functionality in the invention. Nonetheless, if one wanted to achieve the best results, one would make the foam material (ideally latex foam) with a lot of pinholes and make it in a low density (in other words, make it soft) to maximize airflow throughout the foam, and therefore maximize the functionality of being able to control the amount of air flowing into and out of the foam core.

[0031] Up until now latex foam pillows have simply been covered in a cotton cover and sold based upon their elasticity; they have excellent rebound, and the breathable cotton covers do nothing to inhibit this. Other foam pillows, like memory foam pillows, are often covered in a cotton fabric and sold on the merits of the foam’s ability to relieve pressure by adjusting to the contours of your head and neck. The present invention has a completely different functionality to standard latex foam (and other foams, like memory foam) pillows. By controlling the amount of air that can flow in and out of the pillow we are changing the way the latex foam behaves. By understanding that latex foam gets its excellent elasticity from air flow in and out of the pillow (it literally naturally sucks air back and returns to the same shape every time at a high speed), we can alter the pillow’s behavior by regulating the amount of air that flows in and out of the pillow. Thus, by making a non-breathable cover with a device to control airflow we create a pillow that behaves almost nothing like an ordinary latex pillow: firstly, only when the airflow device (described below) is opened to at least the full width of the pillow (not all pillows will have airflow devices this long, but we can make them that way if we desire) does the rebound resemble the fast rebound of a latex pillow in any way; secondly, when the device is almost closed the pillow behaves almost exactly like a slow rebounding memory foam pillow; thirdly, by controlling how open the air flow device is the pillow’s rebound speed can be controlled, something that has never been done before with latex foam (or, to the best of the inventor’s knowledge, any other open-celled foam) or memory foam. Therefore, by combining latex foam with the cover described above we get a “pillow” that can be controlled to behave similar to a standard latex foam pillow (but not quite the same), controlled to behave almost exactly like slow memory foam, fast memory foam, medium speed memory foam, and a variety of different feels in between all of the above. (In contrast, the speed of memory foam is controlled by the density of the foam, and this is fixed in each product; in other words, unlike ours, it cannot be controlled by the user.) All this comes in one pillow. Essentially, the invention is the combination of materials (latex foam core, non-breathable layer encompassing the core, device that regulates air flow in and out of the pillow) to create this special “pillow,” or a system, that provides the user with the ability to control rebound speed.

[0032] It should be noted again that the same general principle would apply to standard, highly breathable, PU foams as well (not including visco-elastic foams, which can have a polyurethane base), except that because it is not rubber based, it would not have as good an effect overall.

[0033] It is the function of the airflow device mentioned above to provide the user with the ability to regulate, with a wide degree of variation, the speed of air that flows into the pillow cavity (where the foam is held) by altering the degree of openness of the device. So, for example, if one wished the pillow to fill with air more slowly one would close the airflow device to a degree where there was only a slight opening. As discussed above, this allows the user to adjust the softness or firmness of the pillow: when the airflow device is closed or slightly open, the pillow will feel firmer, and when it is open, the pillow will feel softer.

[0034] There are a few basic options for the construction of the airflow device E. The first is a zipper-based construction. The zipper can be plastic or metallic. The zipper head must be able to open and close to specific points without sliding back and forth along the zipper when air pressure is applied. This is important because the opening will be the source of some degree of air pressure from the air flowing in and out, and if the zipper slides easily the size of the
opening will alter and the feel of the pillow will change without the user intending that it do so.

[0035] According the invention, a pillow, regardless of the composition of its layers (in other words, whether there is down, shredded foam, silk, or some other filling material between the non-breathable layer and the outer cover) the pillow usually have one or two zippers (one on either longitudinal side when there are two); a large zipper (large referring to length, not zipper head size) that may be used to take the foam core in and out of the cover and as a airflow device, and/or, on another side of the pillow, a slightly smaller (smaller referring to length, not zipper head size) zipper (typically about half to two-thirds the width of the pillow) that can be used as an airflow device only. One example of a pillow including a full-length zipper on one end, and an airflow device on the other end, the latter not extending the full length of the pillow, is shown in FIG. 1. Though not shown in the drawings, the airflow device may extend along the entire side. Further, the airflow device and the zipper may be one and the same, so that there is only one zipper in the pillow. Alternatively, the airflow device and a separate zipper may both be large enough to serve as holes that one may use to take the foam core out of the pillow or put it back in.

[0036] The advantage to creating two airflow devices is that the air can flow more evenly through the pillow, creating a more even rebound effect, and the variation in rebound speeds will be greater because there is more “opening” to work with; the greater the size of the opening the greater the amount of air that flows into the pillow the faster the rebound speed. The zippers can be coated with plastic on the inside to ensure that only where the zipper is open can the airflow in and out of the pillow. Further, a Ziploc® zipper device, similar to the ones used on Ziploc® bags, can also be used but would not be as reliable over time as a standard zipper. Other airflow regulation devices of different compositions can be used, the only requirement is that one can regulate the size of the opening to control the airflow in and out of the pillow. However, we find that a zipper works best because with a high degree of facility it allows one to create everything from a very small opening to a very large opening, offering a high degree of variability in rebound speed. Other devices one can envision, such as a plastic tube whose size can be regulated in some fashion, would work to some extent but could not offer the wide range of flexibility in rebound speed that the zipper style airflow device offers.

[0037] The difference between the zipper(s) that we use as our airflow device(s) and standard zippers or standard pillows is that the express purpose of having this type of zipper is to allow one to control the amount of air flowing into the pillow, not to take the pillow out of its case. It just so happens that because we want to allow for a high degree of rebound adjustability, in some cases we will make a zipper the full-length of the pillow side, and therefore the zipper can double as an opening for taking the pillow in and out of the case. Thus, the airflow zipper can also be made smaller than a standard zipper for removing a foam pillow from its case (about half the size), and we can locate to such zippers, one on each side, to create a high degree of rebound variation for the user. The variety of zipper sizes and locations is great; the main point is that the function of the zippers is different from that of a standard pillow, and while some embodiments of the invention may give the appearance that the zipper is being used in the same way that standard pillow zippers are used (to take the pillow in and out of the case), this is really not the case. The main purpose of zippers on any embodiment of this invention should always be the regulation of airflow in and out of the pillow. The idea is to allow one to change the feel of the pillow as far as the speed it recovers back to normal shape after pressure is released (by controlling the amount of air flowing in) to suit the preferences of individual users.

[0038] Although the invention claims that embodiments will usually have one or two zippers, the invention is not limited to two zippers only. One could place zippers, or any other suitable airflow device at strategic points on both the latitudinal and longitudinal sides of the pillow. The greater the amount of possible adjustable “airflow” the greater the range of rebound speed variation and feel the pillow will have. While the marginal utility of the amount of adjustable airflow might plateau at a certain point (our contention is it more or less does this at the point where both latitudinal sides zippers along their full length), one could achieve a slightly higher degree of rebound and feel variation by increasing the “area” of the possible adjustable airflow.

[0039] According to the present invention, what the inventors have done is taken latex foam, a highly elastic and resilient foam, and completely changed its behavior and reaction to pressure by putting it in a non-breathable or, because we have the airflow device, semi-non breathable environment.

[0040] The new behavior is extremely similar to memory foam (a foam developed by NASA that reacts similarly to the invention described here—it is not rubber-based, and the reaction is achieved by the chemical composition of the foam itself, not by placing the foam in any kind of cover—it is a temperature sensitive foam). However, there are at least three extremely important advantages over memory foam; 1) the speed of the memory, or reaction, can be adjusted by the user to the user’s liking; 2) it does not change behavior in different temperatures (because the foam is temperature sensitive it can often become soft like putty in really hot environments, and rock hard in cold environments); and 3) the construction allows the user to adjust the softness or firmness of the pillow: when the airflow device is closed or slightly open, the pillow will feel firmer, and when it is open, the pillow will feel softer.

[0041] In addition, by using latex foam we make the entire pillow, from core to cover, hypo-allergenic and anti-bacterial, because these are natural properties of latex foam. Memory foam, and every other foam for that matter, is not. Our pillow core and cover function together as one unit, and the parts to this whole also bring their individual advantages in as the advantages of the whole (in the case of the hypo-allergenic properties of the foam). If one were to use a standard, highly breathable PU foam in place of the latex foam this point would not apply unless we added special chemicals to the PU foam to make them anti-bacterial and hypo-allergenic.

[0042] To repeat: the principles described above work for mattresses, only on a larger scale. They will also work with highly breathable PU foam (not including visco-elastic PU foam), or any other highly breathable foam, in place of the latex foam.

[0043] The foregoing description of the specific embodiments will so fully reveal the general nature of the invention
that others can, by applying current knowledge, readily modify and/or adapt for various applications such specific embodiments without undue experimentation and without departing from the generic concept, and, therefore, such adaptations and modifications should and are intended to be comprehended within the meaning and range of equivalents of the disclosed embodiments. It is to be understood that the phraseology or terminology employed herein is for the purpose of description and not of limitation. The means, materials, and steps for carrying out various disclosed functions may take a variety of alternative forms without departing from the invention.

[0044] Thus the expressions “means to . . . ” and “means for . . .”, or any method step language, as may be found in the specification above and/or in the claims below, followed by a functional statement, are intended to define and cover whatever structural, physical, chemical or electrical element or structure, or whatever method step, which may now or in the future exist which carries out the recited function, whether or not precisely equivalent to the embodiment or embodiments disclosed in the specification above, i.e., other means or steps for carrying out the same functions can be used; and it is intended that such expressions be given their broadest interpretation.

What is claimed is:

1. A foam core pillow or mattress comprising:
   a breathable foam core in the shape of a pillow or mattress;
   an outer cover shaped to cover the foam core;
   an inner layer of non-breathable material adjacent the foam core;
   at least one airflow device which can be selectively opened or closed to regulate airflow through the foam core.

2. The foam core pillow or mattress according to claim 1, wherein the breathable foam core is made from a foam that is inherently highly permeable to air.

3. The foam core pillow or mattress according to claim 2, wherein the breathable foam can be any breathable foam, including one of the following materials: latex foam, a PU-based foam or a non-PU-based foam.

4. The foam core pillow or mattress according to claim 1, wherein the layer of non-breathable material comprises a closed cell polymer material layer and a thin layer of synthetic material.

5. The foam core pillow or mattress according to claim 1, further comprising a layer of soft material between the outer cover and the inner layer of breathable covering fabric.

6. The foam core pillow or mattress according to claim 5, wherein the layer of soft material comprises a material selected from the group of duck down, goose down, synthetic down, silk, shredded latex, shredded polyurethane-based foams, cotton fiber-fill, synthetic fiber-fill, other similar materials that produce a similar effect or any combination thereof.

7. The foam core pillow or mattress according to claim 1, wherein the airflow device comprises a zipper sewn into one end of the outer cover.

8. A cover for covering a breathable foam core pillow or mattress comprising:
   an inner layer of non-breathable material;
   an outer layer of breathable covering fabric adjacent the inner layer; and
   an airflow device for regulating airflow through the breathable foam core.

9. The cover according to claim 8, wherein the inner layer of non-breathable material comprises a closed cell polymer material layer and a thin layer of synthetic material.

10. The cover according to claim 9, further comprising a layer of soft material between the layer of non-breathable material and the layer of breathable covering fabric.

11. The cover according to claim 10, wherein the layer of soft material comprises a material selected from the group of duck down, goose down, synthetic down, silk, shredded latex, shredded polyurethane-based foams, cotton fiber-fill, synthetic fiber-fill, other similar materials that produce a similar effect or any combination thereof.

12. The cover according to claim 8, wherein the foam core is in the shape of a pillow or mattress, and the cover is shaped to cover the foam core, wherein the airflow device comprises a zipper sewn into one side of the outer cover.

13. The cover according to claim 12, wherein the zipper extends only partially across the one side of the cover.

14. A pillow or mattress comprising:
   a breathable core in the shape of a pillow or mattress;
   an outer cover shaped to cover the core, comprising:
   a layer of non-breathable material;
   a layer of breathable covering fabric;
   a zipper sewn into a first side of the outer cover for closing the core within the outer cover, and
   an airflow device which can be selectively opened or closed to regulate airflow through the core.

15. The cover according to claim 14, further comprising a layer of soft material between the layer of non-breathable material and the layer of breathable covering fabric.

16. The cover according to claim 15, wherein the layer of soft material comprises a material selected from the group of duck down, goose down, synthetic down, silk, shredded latex, shredded polyurethane-based foams, cotton fiber-fill, synthetic fiber-fill, other similar materials that produce a similar effect or any combination thereof.

17. The foam core pillow or mattress according to claim 1, wherein the airflow device comprises a zipper sewn into a second side of the outer cover.

18. The foam core pillow or mattress according to claim 17, wherein the zipper extends only partially across the second side of the outer cover.

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