A bedding apparatus including a first layer including a heat absorbing and releasing material, and a second layer coupled to the first layer, the second layer including a wicking material.
FIG. 1

FIG. 2
MAT FOR CONTROLLING HEAT AND EXCESS PERSPIRATION

RELATED APPLICATION

This document claims the benefit of U.S. Provisional Application Serial No. 60/624,415, filed Nov. 2, 2005 under 35 U.S.C. 119(e) and is incorporated herein by reference. This document also claims the benefit of U.S. Provisional Application Serial No. 60/624,420, filed Nov. 2, 2005 under 35 U.S.C. 119(e) and is incorporated herein by reference.

FIELD OF THE INVENTION

This document is related to mats used for bedding. More specifically, this document is related to a mat for controlling heat and excess perspiration used for living beings, such as humans and animals, such as pets.

BACKGROUND OF THE INVENTION

Bed mats have been produced in the past generally for urinary incontinence. There are also bed mats that use a poly stuffing which actually hold in body heat and do not have sweat absorbing capabilities. There is a pillow (Pat. No. 4,649,582) by Cheng-Hsiung Cho of gauze cloth or cotton cloth that does not have bacteria and odor control features.

Pet beds have also been produced in the past with both natural and synthetic materials.

BRIEF DESCRIPTION OF THE DRAWINGS

The invention is pointed out with particularity in the appended claims. However, a more complete understanding of the present invention may be derived by referring to the detailed description when considered in connection with the figures, wherein like reference numbers refer to similar items throughout the figures and:

FIG. 1 is an elevated front view of the bed mat, according to an embodiment.

FIG. 2 is an elevated back view of the bed mat, according to an embodiment.

FIG. 3 is another elevated front view showing the attached blanket and insertion of cold/lot packs or padded pouch, according to an embodiment.

FIG. 4 is an elevated view of the blanket, according to an embodiment.

FIG. 5 is an internal view of the bed mat, according to an embodiment.

FIG. 6 is a diagram of the fabric wicking moisture, according to an embodiment.

FIG. 7 is a diagram of the fabric absorbing and storing excess body heat, according to an embodiment.

FIG. 8 is a diagram of the fabric releasing the stored heat back to the body, according to an embodiment.

FIG. 9 is a diagram of the fabric in the bed mat pulling perspiration and excess body heat away from the skin, according to an embodiment.

FIG. 10 is a diagram of the fabric in the blanket pulling perspiration and excess body heat away from the skin, according to an embodiment.

FIG. 11 is a diagram of the bed mat and blanket working in combination together pulling perspiration and excess heat away from the skin, according to an embodiment.

FIG. 11A demonstrates the blanket releasing the stored heat back to the body, according to an embodiment.

FIG. 11B demonstrates the bed mat releasing the stored heat back to the body, according to an embodiment.

FIG. 12 is an elevated front view of the pet bed, according to an embodiment.

FIG. 13 shows both the outside and an internal view of the pet bed, according to an embodiment.

FIG. 14 is a diagram of the fabric absorbing the pet’s excess body heat and moisture, according to an embodiment.

FIG. 15 is a diagram of the fabric releasing the stored heat back to the pet, according to an embodiment.

The description set out herein illustrates the various embodiments of the invention and such description is not intended to be construed as limiting in any manner.

DETAILED DESCRIPTION

In the following detailed description of the example embodiments, reference is made to the accompanying drawings that form a part hereof, and in which are shown by way of illustrating specific example embodiments. The example embodiments illustrated are described in sufficient detail to enable those skilled in the art to practice the teachings disclosed herein. Other example embodiments can be utilized and derived therefrom, such that structural and logical substitutions and changes can be made without departing from the scope of the claims. The following detailed description, therefore, is not to be taken in a limiting sense, and the scope of various embodiments is defined only by the appended claims, along with the full range of equivalents to which such claims are entitled.

Now, referring to FIGS. 1-11B, a first set of embodiments will be described for a bed mat that controls head and excess perspiration for a human.

In order to use the bed mat set, the user places the bed mat on top of the bed’s bottom bed sheet. The bed’s top sheet and blankets may be placed over the bed mat set, if desired, for extra warmth.

The bed mat is reversible and the side without the pockets may be a preference for some people. The reversed side with the four pockets can be used when either cold or hot packs are desired for comfort in the neck, shoulder, mid-lower back, thigh/leg areas. The pockets can also be used for extra padding for pressure point relief along the body.

The bed mat set achieves its results as follows:

The bed mat assembly is shown in perspective view in FIG. 1. The main bed mat 11 is constructed of a front cover 12 consisting of a layer of wicking material 42.
This wicking material 42, pulls off excess perspiration 38, away from the body/skin 36 to the other side of the material to dry or evaporate 44. Due to the pulling away of the perspiration from the skin 38, to the underside of the material, the layer of the wicking material against the skin stays dry 40. Four pockets are sewn on the front cover for insertion of cold/hot packs 32 or extra padding 34. The neck pocket 14C, the shoulder pocket 14D, the lower to mid back pocket 14E, and the thigh or lower leg pocket 14F. The pockets are constructed of phase change material 43 which acts as heat absorbing elements along the main areas of a person’s body. A length of hook-and-loop fastener 18 is placed along the seam so that the bed mat cover easily opens to remove for machine washing and drying. Two buttons 20 are sewn along the bottom edge of the bed mat for attachment of the blanket 26 so that the blanket hangs loosely but securely while sleeping.

[0030] This allows for movement while sleeping but keeps the blanket from coming off the body.

[0031] This blanket is made to the measurements that are comfortable for one person. Due to its smaller size it may slip off a person, so attachment 26 is provided in one example. The blanket is made smaller for two reasons. One is to transport easily when traveling such as hotel use, sleeping bag, and camper. The other reason is that the moisture and heat absorption qualities do not affect another person sleeping next to the individual. It can be easily washed without stripping the entire bed.

[0032] FIG. 2 shows the reverse side of the bed mat 16 is constructed of the same wicking material 42. Since this bed mat is simply reversed it still has the hook-and-loop fastener opening 18 along the length and the buttons 20 for attaching the blanket 26. This side is for smooth comfort if the pocket use is not desired.

[0033] The bed mat set FIG. 3, with the blanket 26 attached to buttons 20, with button slits 30. The reverse side of the blanket 28 lies against the person’s skin 36. FIG. 3 also shows the pockets 14C and 14D, in use. Hot/cold pack 32 is inserted in pocket 14C, and a filled pressure relieving comfort pack 34, is inserted in pocket 14D.

[0034] The blanket FIG. 4 is constructed with other materials. One side of the blanket is a phase change molecule fabric 26, which absorbs excess body heat 46, off the skin 36, and pulls it into molecules for storage 48. As the body cools, molecules 48 release the body heat 46 back to the skin 36. This eliminates the body overheating and cooling off creating body chills which make sleeping disturbing and uncomfortable. REM sleep is often affected when the body chills. The reverse side of the blanket is constructed of wicking material 28, which pulls moisture or perspiration 38 off the body so that the fabric layer against the skin stays dry 40. The perspiration is pulled to the reverse side of the fabric which then spreads it out to dry faster 44. It also provides odor and bacterial control within the fibers. This blanket is reversible so that a person can choose the side which is most effective for their situation. Two button holes/slots 30 are sewn so that the blanket can attach to the bed mat. Reasons as stated in the previous paragraph.

[0035] An internal cut out view of the bed mat is shown in FIG. 5. The cover 12 of wicking material encases, top and bottom, the inner foam mats. The top front cover contains the pockets 14. The inner top mat 22 is coated with phase change molecules 48, which faces up toward the body. These absorb, store and release excess body heat when the body cools down. This mat is effective in its purpose even compared to the fabric material that contains the same molecules/cells. Foam’s 6,100 ACR compared to fabric’s 2,000 ACR. The top mat provides soft comfort while absorbing excess heat. The bottom layer of foam 24 works to add additional comfort. It is lightweight to allow transport by rolling or folding the mat. It keeps its loft, by not matting down, even after this folding or traveling has occurred. This mat contributes to all of the other materials constructed in the bed mat by dissipating moisture, does not hold in body heat so it has breath ability. By eliminating body impressions it improves comfort for extra padding and body lift for sleeping ability.

[0036] The diagram FIG. 6 demonstrates the process of wicking fabric pulling perspiration 38 off the skin 36. As the perspiration droplets leave the skin surface they attach onto the fibers in the wicking fabric. These treated fibers 42 pull the moisture quickly through the fabric onto the opposite side of the material. As it moves this moisture away, the surface of the fabric 40 next to the skin stays dry. When the moisture is pulled onto the opposite side of the fabric it spreads out 44 to decrease the drying time. This fabric is also treated for odor and bacteria control. This material covers the bed mat 12 and one side of the blanket 28.

[0037] The diagram FIG. 7 demonstrates the process of heat absorbing material 43 that has phase change molecules or cells. The skin surface of the person 36 experiences excess heat due to what is commonly referred as hot flashes. This heat 46 is pulled into the fabric or foam mat which contains microencapsulated molecules 48 where it is stored.

[0038] In FIG. 8 it shows that as the body cools down these molecules or cells within the fabric 48 releases this stored heat 46 back to the skin surface 36. This eliminates the heat and cooling cycle that creates body chills. The fabric works to keep the skin surface at a constant temperature by reducing excess heat and the resulting perspiration. This material is on the surface of the first top layer of foam 22. On the bed mat pockets 14C, 14D, 14E, and on one side of the blanket 26.

[0039] The diagram FIG. 9 demonstrates how bed mat 11 works for perspiration and heat control. The person is lying on top of the bed mat cover 12. The person’s skin 36 becomes hot 46 and perspires 38. The perspiration 38 is pulled thru the wicking layer 42 of the fabric cover that encases the bed mat. Once on the other side of the fabric it spreads out to dry 44. Since the perspiration has pulled through that leaves the surface of the fabric, the dry layer 40, touching the skin. Under the fabric cover is the inner top mat 22. This top mat has a layer of coating on the foam 43, which absorbs excess heat 46. This heat is pulled into the cell molecules 48, where it is stored until the body cools off. Once the body cools off, the cell molecules 48, release the heat back to the body or skin surface. The bottom mat 24, is a poly foam that provides comfort cushioning, keeps it loft and doesn’t mat down, and does not impact the heat absorption. Since it does not hold in heat, and has natural air ventilation properties, it maintains the effectiveness of the top mat.

[0040] FIG. 10 demonstrates how the reversible blanket 26 & 28, works by combining both sides of the blanket for
effective control of perspiration, odor, bacteria, mold, and excess heat. This blanket lies on top of the person next to their skin surface. The person’s skin becomes hot and perspires. The perspiration is pulled thru the wicking layer of the blanket fabric that lies against the skin. Once on the other side of the fabric it spreads out to dry. Since the perspiration has pulled through that leaves the surface of the fabric, the dry layer touching the skin. This side also controls odor and bacteria. On the reverse side of the blanket the second fabric is sewn so that the coated phase change molecules, which are coated on one side of the fabric, are facing inward toward the middle of both layers. The molecules or cells are effective in pulling excess heat from the body even though the other wicking side is against the skin. The heat is stored in the fabric micro-encapsulated molecules in the blanket. When the surface of the skin cools down then the molecules release the stored heat back to the body, demonstrated in FIG. 8.

Further embodiments are also contemplated. For example, a layer of foam, stuffing type material such as natural material or a poly may be inserted between the two adjacent fabrics 28, 26 of the blanket.

In another embodiment, the two inside foam materials in the bed mat may be reversed. Or may be the only inside foam. Two pieces may be used eliminating the foam placed back to back so that the phase change materials are placed upward so when the mat is reversed the molecules are next to the body on either reversed side.

In yet another embodiment, the entire cover on the bed mat may be constructed of phase change fabric instead of wicking style fabric 12.

In still another embodiment, the blanket may be attached to the bed mat, at different points along the bed mat. The buttons can also be sewn at the top of the blanket near the head area. It would keep the blanket from falling off the person around the head/neck area. Since it is a loose fit, it can be attached anywhere along the bed mat.

In one embodiment, the bed mat set that fits one person, and is simple to use by placing the bed mat on top of the existing bed sheets. A specialty blanket is attached to the end of the bed mat. They work in combination to control night sweats, hot flashes, body odor and bacteria control. This combination of materials pull moisture off the body, stores excessive heat inside the fabric, and releases the stored heat later when the body cools off. It is mobile, as it can be rolled for traveling, which can make a hotel bed more comfortable. It is versatile since it can also be used in regular and reclining chairs, wheelchairs, and in sleeping bags. Outdoor use is also contemplated when placing the mat, without the blanket attached, on top of a lawn chair. As the body heats up from the sun, the excess heat and body perspiration are absorbed into the mat. As the day progresses or clouds pass over obstructing the sun, then the absorbed heat will be released back to the body thus keeping the body at a comfortable heat level.

The invention is preferable over previous mats due to the overall comfort level achieved by a combination of materials.

One example has two inner mats. The bottom mat is foam which dissipates moisture, offers greater breathability, and eliminates body impressions by retaining its loft for many years. 90% of loft is retained 10 years later. The top inner mat is made with phase change molecules. This coated foam is effective for heat control, compared to other alternative such as fabric 6,100 ACR compared to fabric’s 2,000 ACR. It absorbs excess body heat, such as hot flashes, stores it inside the micro-encapsulated molecules and releases this stored heat back to the body, after the person’s skin temperature has cooled down. It eliminates chilling of the body.
which normally happens when it is overheated and then cools down. The combination of these two mats working together offers padded, comfort and effectiveness for heat and moisture control.

[0051] A combination of fabrics makes one example of the outside of the mat and the blanket effective. The outside cover of the mat has wicking capabilities combined with odor and bacterial control within the fabric fibers. It pulls the moisture off the body, in the form of excess perspiration, thru the fibers so that it spreads out quickly to dissipate on the other side of the material. The skin stays dry since the moisture is pulled away from the body. This material is on the bed mat and on one side of the blanket. Odor and bacterial control are provided in perspiration areas. The bed mat has four pockets for two reasons. One reason that it allows the insertion of heat/cold packs for the neck, shoulder, lower back, thighs. They are constructed with extra heat control phase change materials. This makes a double layer of micro-encapsulated molecules. One on the main pocket area which is situated on general areas of the body and the other is the inner mat which also has heat control.

[0052] The adjacent side of the blanket has heat control with phase change materials. On the reversible side of the blanket it contains the wicking capabilities. It pulls the perspiration off the body and by spreading it on the other side of the blanket, it dries quickly. It also has the odor and bacteria control on this side of the blanket.

[0053] Now, referring to FIGS. 12-15, a second set of embodiments will be described for a pet or animal bed that controls heat and moisture.

[0054] The pet bed achieves its results as follows:

[0055] The pet bed assembly is shown in perspective view in FIG. 12. The pet bed 111 is constructed of a hemp fabric cover 112, including a top soft fleece upper layer of phase change material 118. This fleece is coverted on one side with heat absorbing molecules 144. The coated side faces away from the pet. The hemp fabric 112, is considered a strong natural fiber along with a comfortable fleece 118 that adjusts to the pet’s excess heat and moisture. A hemp cording or rope 116 is sewn between the hemp material 112 and the fleece material 118. This helps strengthen the cover and provides an area where a pet can chew on or sharpen claws. A zipper is sewn on the length of the cover 114 so that the cover can be removed for washing and drying.

[0056] An internal cutout view of the pet bed is shown in FIG. 13. The hemp cover 112 and a top soft fleece upper cover 118 and hemp cording 116 encase the inner mat 120. The inner mat 120 is covered in a cotton nylon twill covering 122 which is a strong inner strength for pets and also allows breathability features. There is a channel strip 150 sewn around the inside perimeter and filled with buckwheat hulls 126. These buckwheat hulls 126 add stability, natural air flow to the perimeter of the pet bed. They add a natural scent that the pet may enjoy. The inner mat 120 is filled with millet hulls 128 which provide natural comfort by conforming to the pet’s body and adjusts to their movements.

[0057] The diagram FIG. 14 demonstrates the process of a pet’s skin surface 146 lying on the heat and moisture absorbing material 118. The pet experiences excess moisture 134 and heat 148. The material 118 pulls the moisture 134 through the material’s wicking layer 138 keeping the top layer 136 of the fabric dry against the pet’s skin 146. The moisture spreads out to dry and evaporate 140. The excess pet’s heat is transferred through the material 148 and is absorbed into the fabric’s micro-encapsulated molecules 144 where it is stored.

[0058] The diagram FIG. 15 demonstrates how the molecules or cells 144 release the stored heat 148 back to the pet 146. This occurs after the pet has cooled down and needs the extra heat 148 to prevent the pet from getting chilled.

[0059] These are not the only embodiments of the invention. Alternatively:

[0060] The pet bed 111 may have a shape other than a rectangle, such as an oval.

[0061] The pet bed 111 can have an opening 114 in different areas around the pet bed for easy removal of the cover 112.

[0062] Different materials, sizes, and interconnections can be used for all components. In lieu of the cover zipper 114 along the length of the pet bed, may include other components such as snaps, hook-and-loop.

[0063] The inner mat does not currently open for filling of extra buckwheat or millet hulls. The entire inner mat can be replaced in a timely manner, instead of filling, for better hygiene. An opening may be provided in one example.

[0064] The phase change material 118 may be sewn on additional parts of the pet bed.

[0065] The position in the inner mat 120 of the buckwheat hulls 126 and millet hulls 128 may be different in various examples. For example, the outer perimeter can contain millet hulls 128 and the inner area contain buckwheat hulls 126. Alternatively, the buckwheat hulls 126 can be mixed with the millet hulls 128.

[0066] Catnip and other enhancing materials, including bells that jingle, may be mixed in the inner mat filling.

[0067] The pet bed that combines three natural products with the latest fabric technology that controls heat and moisture. They work in combination to provide pet comfort and also appeal to an animal’s sense of smell. The top portion of the cover contains a soft fleece material that has phase change molecules embedded in the fabric’s fiber. These molecules pull excess heat from the pet’s body and store it within these micro-encapsulated molecules or cells. It releases the stored heat back to the pet, after the pet’s skin temperature has cooled down. It stops the cycle of heating up and getting chilled as the body cools. Often pets will move around from a cooler area to a warmer area, and visa versa, to keep their body temperature comfortable. This pet bed will eliminate that need to move. The moisture is controlled partially from this molecular fabric and also from hemp fabric. Moisture chills the pet after experiencing rain, snow from the outside elements and then coming back inside the home, or doghouse and experiencing temperature change. The pet bed material will minimize or eliminate this body chilling cycle. Both the molecular fabric and the hemp fabric wick away excess moisture.

[0068] The present invention may be preferable over previous pet beds due to the overall comfort level achieved by a combination of materials.
One example of the pet bed cover is constructed with three different materials. The upper portion where the pet lays is the soft fleece phase change molecular material. A natural hemp rope divides this fleece material from the hemp covering. This natural hemp material is the remaining portion of the cover. Hemp has a natural anti-bacterial quality that helps prevent odor. It helps to keep the pet fresh with the anti-mold and anti-fungal properties which are inherent to hemp. It is strong and durable natural fiber which can withstand a cat or dog’s paws and nails. Hemp is grown and treated without herbicides, fungicides or pesticides, so it is considered a natural organic product. This cover has a zipper so that it is convenient to pull off to wash and dry.

The pet bed inner portion is covered in cotton nylon twill for strength and breath ability. It has a channel strip sewn around the inside perimeter that is filled with buckwheat hulls. Buckwheat hulls are a crop that is 100% organic. They are a little heavier than millet hulls, so they will add a small amount of reinforcement around the inside perimeter. They do not hold in body heat and therefore allows natural airflow so that they keep the pet bed fresher. This offers another natural scent that pets may enjoy. The inside of the bag is filled with 100% organic, pesticide free millet hulls. This natural material containing thousands of hulls conforms to the pet’s body and adjusts to their movements. It satisfies a dog’s natural characteristic of circling around an area until they find a comfortable spot. They can move the hulls around for their own comfort level and again this crop adds an additional natural scent. Three natural products contribute to this pet bed. Hemp material, millet and buckwheat hulls, along with a material that is manufactured to regulate the heat and moisture levels of a pet.

The foregoing description of the specific embodiments reveals the general nature of the invention sufficiently that others can, by applying current knowledge, readily modify and/or adapt it for various applications without departing from the generic concept, and therefore such adaptations and modifications 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. Accordingly, the invention is intended to embrace all such alternatives, modifications, equivalents and variations as fall within the spirit and broad scope of the appended claims.

What I claim is:

1. A bedding apparatus comprising:
   a first layer including a heat absorbing and releasing material; and
   a second layer coupled to the first layer, the second layer including a wicking material.

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