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(54) **ITEM OF CLOTHING**

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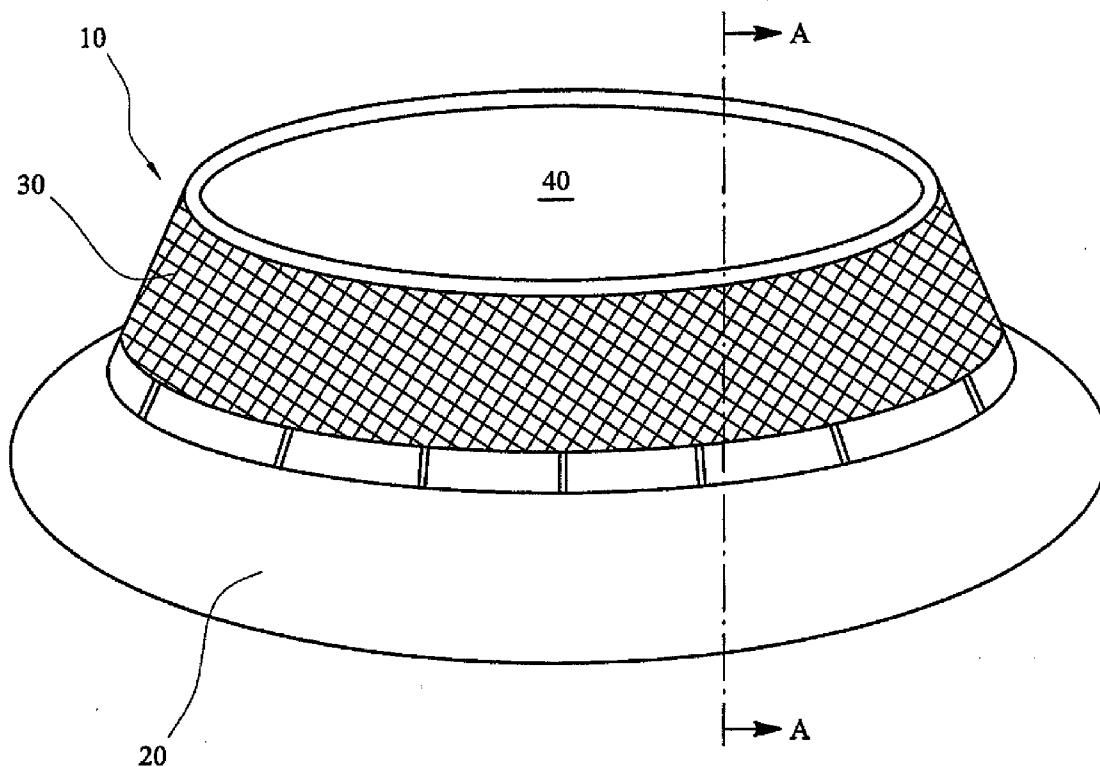
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(57) **ABSTRACT**

An item of clothing (in this case is shown as a hat) **10** comprises wall **30** having formed of netting **10**. There is also a silvered layer **50** in proximity to the wall **30**. In use, heat rays from the Sun are reflected from the wearer's body by the silvered layer **50** while walls **30** allow heat to be vented away from the wearer's body. Optionally, gel layer **60** is present which results in evaporation of liquid away from the body, so further cooling the wearer.



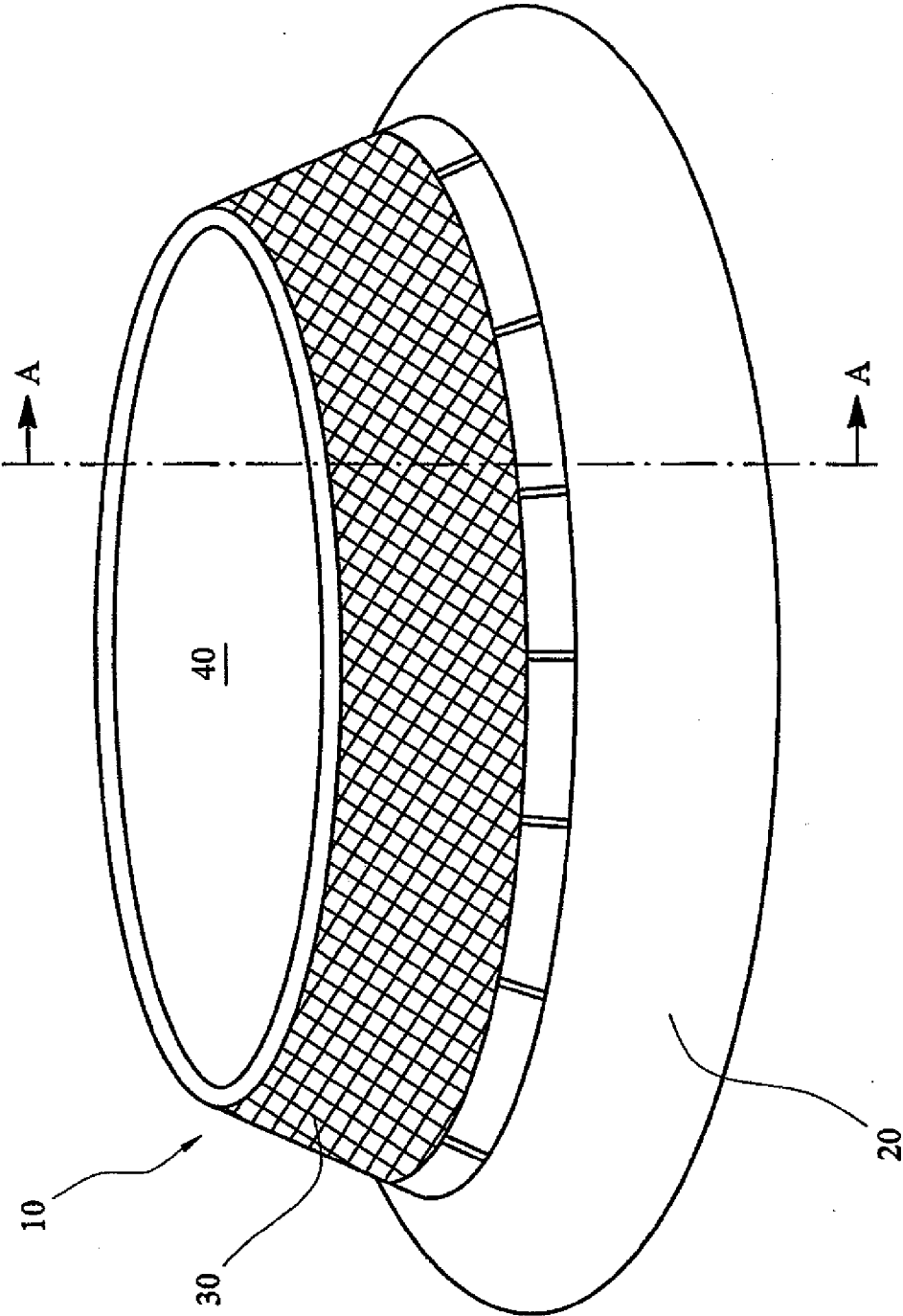


FIG. 1

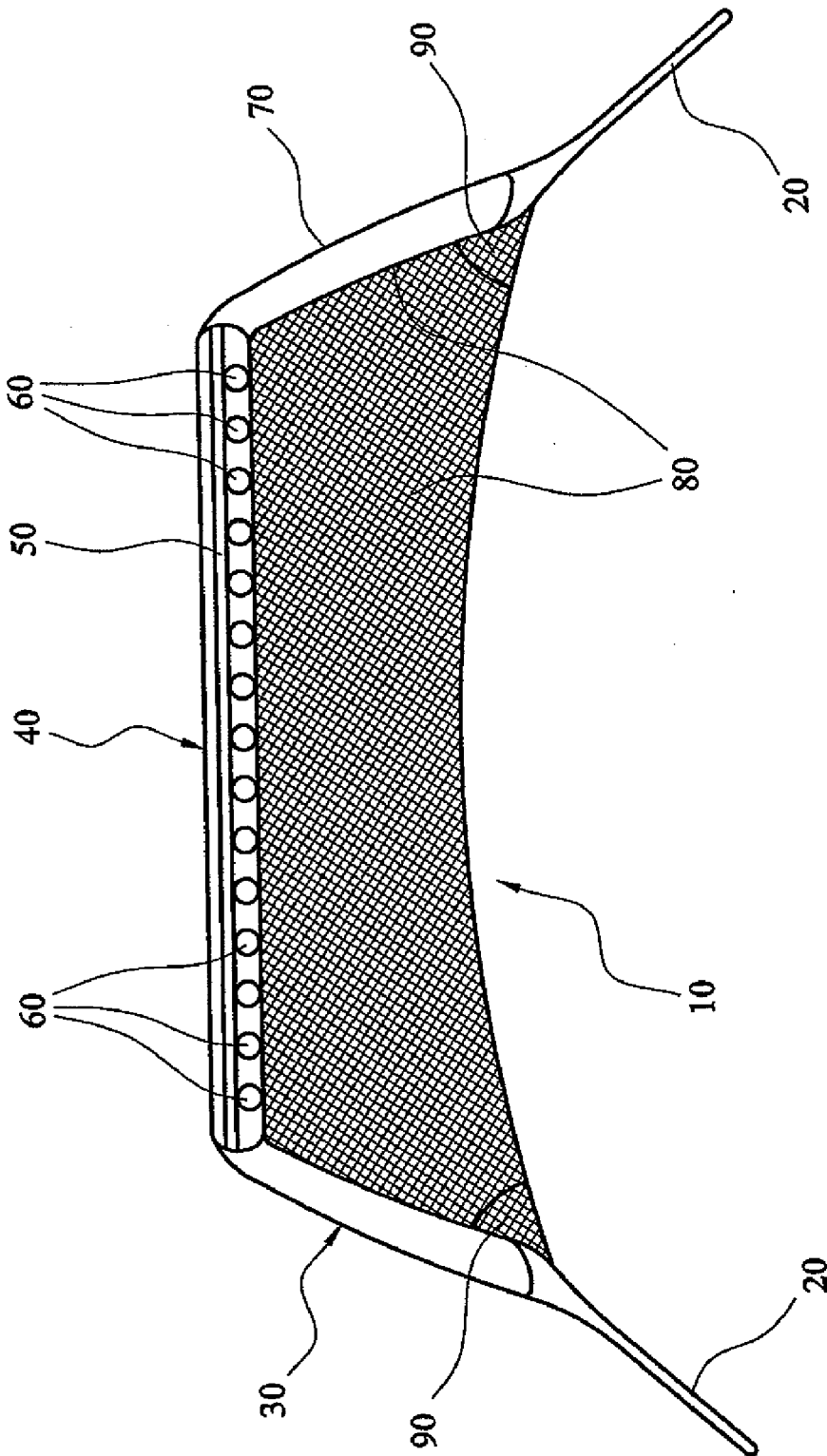


FIG. 2

### ITEM OF CLOTHING

[0001] U.K. Application Serial No. 0600937.7 filed on Jan. 18, 2006 and entitled An Item of Clothing, is hereby incorporated by reference in its entirety.

[0002] The present invention is concerned with an item of clothing and in particular but not exclusively to an item of clothing in the form of headgear for releasing heat from a wearers head to cool the wearer.

[0003] Wide brimmed hats are well known for preventing direct exposure of a person's head to the ill effects of the sun. However, wearing a hat in the hot midday sun often causes a person's head to become hot and the high levels of humidity which often accompanies summer weather, further creates the build up of sweat moisture within the area of a person's head enclosed by the hat. This can lead to uncomfortable conditions such as prickly heat.

[0004] In situations where a person is required to be active in hot weather, it is vital that the person does not overheat as this can lead to heat exhaustion, heat stroke and a variety of other heat related effects. Thus, there is a desire for clothing such as a hat which prevents direct exposure of the sun to a person's head and which maintains a cool environment within the clothing.

[0005] In accordance with a first aspect of this invention there is provided an item of clothing comprising a first area of clothing material associated with a reflective material to reflect heat incident on the item of clothing when worn by a person, away from the person, wherein said item of clothing also includes a second area of clothing material having vents through which air can pass towards the person and into proximity with the first area, said air being reflected towards the person by the reflective material.

[0006] Preferably the item of clothing also includes a cooling member in proximity to the vents.

[0007] It is preferred that the cooling member is provided as a layer of material between the reflective material and a layer of clothing material in proximity to the body of the person.

[0008] The cooling member preferably comprises gel polymer crystals, such as silica gel crystals. It is envisaged that these crystals are held in a layer between the reflective layer and the person's body. This layer may be in the form a bag which can be removed from the item of clothing should the silica gel need to be replaced. The bag can be removed by opening a flap or pocket in the item of clothing. The polycrystals are provided in a dehydrated state. However, when immersed in a liquid such as water, the crystals absorb the liquid and retain it. When liquid is absorbed, the crystals form a gel which provides a cooling effect when in proximity to the skin.

[0009] It is envisaged that the cooling member is positioned in a layer between the person's body and the reflective material.

[0010] It is envisaged that the reflective material is provided as a layer beneath an outer layer of clothing material.

[0011] In a preferred arrangement the reflective material is a sheet of silvered material.

[0012] Preferably, said item of clothing further comprises moisture absorbing means for absorbing sweat released from a person's body within the confines of the item of clothing.

[0013] Further it is envisaged that the moisture absorbing means may include odour-absorbing particles such as char-

coal. It is preferred that there may also be antibacterial material to prevent the build up of odour causing and/or infection causing microbes such as fungi or bacteria. The antibacterial may be in the form of a powder included with the gel or it may be in the form of material having antibacterial material in the fibres making up the support material such as cloth surrounding the gel.

[0014] Preferably, said vents comprise an area of material having apertures to form a net.

[0015] It is envisaged that the vents comprise a double layer of netting.

[0016] Preferably, said double layer of netting comprises an outer coarse netting and an inner fine netting.

[0017] Preferably, said fine netting of said double layer prevents the ingress of mosquitoes and reduces the direct exposure of a persons body to the sun.

[0018] In a preferred arrangement, the item of clothing is an item of headgear, such as a hat, a helmet or a cap. However, the item of clothing may cover other items such as jackets or shirts which are exposed to the sun. In particular, the parts of an item of clothing such as the shoulder area or back of a shirt may include features of the invention.

[0019] In the case of an item of headgear, the vents are formed as part of the side wall of the headgear. The vents may take the form of a continuous layer of netting extending around the circumference of the headgear. Alternatively, the vents or vent material may be provided as discrete areas in the side wall of the item of headgear.

[0020] It is preferred that the headgear also includes an extension from the rear of the cap which extends over the neck region of the wearer to further reduce the risk of exposure to and damage by the sun.

[0021] It is envisaged that the gel material is positioned in proximity to or as a layer above the vents. The gel and vents are positioned in layers below the reflective material.

[0022] A preferred embodiment of the present invention will now be described by way of example only and with reference to the accompanying drawings, in which:

[0023] FIG. 1 is a perspective view of the hat of the present invention; and,

[0024] FIG. 2 is a cross section of the hat shown in FIG. 1 along line A-A.

[0025] Referring to the drawings, there is shown an item of clothing, which in this case is shown as a hat 10 comprising a brim 20, a side wall 30 and a top section 40. The side wall 30 further comprises a fine inner netting 80 and a coarse outer netting 70. The top section 40, as shown in FIG. 2, comprises a silvered layer 50 situated above a cooling member which is provided by a polycrystalline gel layer 60. Typically in an item such as a hat, 10 grams of polycrystalline gel is used and the gel lies across the surface area to be cooled to a depth of typically 2 cm. Ideally enough polycrystalline gel is provided to substantially cover the surface area to be cooled.

[0026] In use, heat rays from the sun incident upon the top section 40 are reflected from the hat due to the silvered section 50. This reduces the warming of the environment, within the hat, by radiation. The fine netting 80, in addition to preventing the ingress of mosquitoes, also reduces the direct exposure of the wearers' head to the sun.

[0027] The side walls 30 allow heat generated by the wearer within the confines of the hat to pass out through the

vented side walls 30 preventing the build up of heat. The side walls 30 also allow for the free passage of air through the hat.

[0028] Furthermore, the polycrystalline gel 60 may be soaked in a liquid such as water and this liquid evaporates to cool the wearer's head. The positioning of the gel 60 adjacent the side walls 30 allows for the easy escape of the moisture as it is slowly released by evaporation. Thus, from the foregoing it is evident that a hat of the present invention reduces the build-up of heat within the environment defined by the hat and facilitates an improved removal of heat from within the environment defined by the hat.

[0029] As a further feature, the hat may incorporate moisture absorbing means 90 to absorb sweat from the wearer. Such means can be provided near the headband of the hat to substantially prevent perspiration from trickling down the face of the wearer.

[0030] It is envisaged that the invention not only covers individual features discussed but also covers combinations of features.

What is claimed is:

1. An item of clothing comprising a first area of clothing material associated with a reflective material to reflect heat incident on the item of clothing when worn by a person, away from the person, wherein said item of clothing also includes a second area of clothing material having vents through which air can pass towards the person and into proximity with the first area, said air being reflected towards the person by the reflective material.

2. An item of clothing according to claim 1, including an area of cooling material in proximity to said vents.

3. An item of clothing according to claim 1, wherein a cooling member is provided as a layer of material between the reflective material and a layer of clothing material in proximity to the body of the person.

4. An item of clothing according to claim 3, wherein the cooling member comprises gel polymer crystals which when in contact with water absorbs said water and releases said water by evaporation thereby cooling a wearer of the item of clothing.

5. An item of clothing according to claim 4, wherein the cooling member is provided in a bag, incorporated in the item of clothing.

6. An item of clothing according to claim 5, including a flap, through which the bag can be removed.

7. An item of clothing according to claim 1, wherein the reflective material is provided as a layer beneath an outer layer of clothing material.

8. An item of clothing according to claim 7, wherein the reflective material is a sheet of silvered material.

9. An item of clothing according to claim 1, further including moisture absorbing means for absorbing sweat released from a person's body within the confines of the item of clothing.

10. An item of clothing according to claim 9, wherein the moisture absorbing means includes odour-absorbing particles.

11. An item of clothing according to claim 9, wherein the moisture absorbing means includes an antibacterial material.

12. An item of clothing according to claim 1, wherein the vents comprise an area of material having apertures to form a net.

13. An item of clothing according to claim 12, wherein the vents comprise a double layer of netting.

14. An item of clothing according to claim 13, wherein said double layer of netting comprises an outer coarse netting and an inner fine netting.

15. An item of clothing according to claim 1, in a form of an item of headgear.

16. An item of clothing according to claim 15, wherein, when the item of clothing is headgear, the vents are formed as part of a side wall of the headgear.

17. An item of clothing according to claim 16, wherein the vents are a continuous layer of netting extending around a circumference of the headgear.

18. An item of clothing according to claim 16, wherein the vents are provided as discrete areas in the side wall of the item of headgear.

19. An item of clothing according to claim 9, wherein the moisture absorbing means is located in proximity to the vents and under the reflective material.

20. An item of clothing according to claim 2, wherein a cooling member is provided as a layer of material between the reflective material and a layer of clothing material in proximity to the body of the person

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