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A4G  
Selected US specifications from IPC sub-class A47G

(54) Sleeping bags

(57) A sleeping bag comprises a gas-inflatable mattress portion (1) comprising a body support portion (2) and a pillow portion (3), and a body covering portion (9), in the form of a quilt attached to the mattress portion by for instance a zip (4).

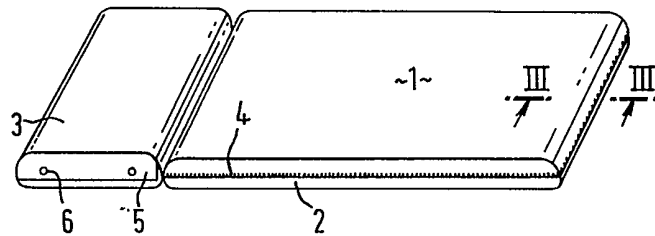


FIG. 1

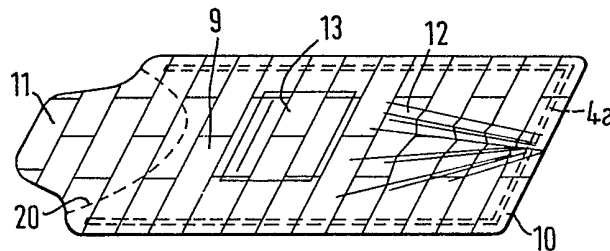


FIG. 2

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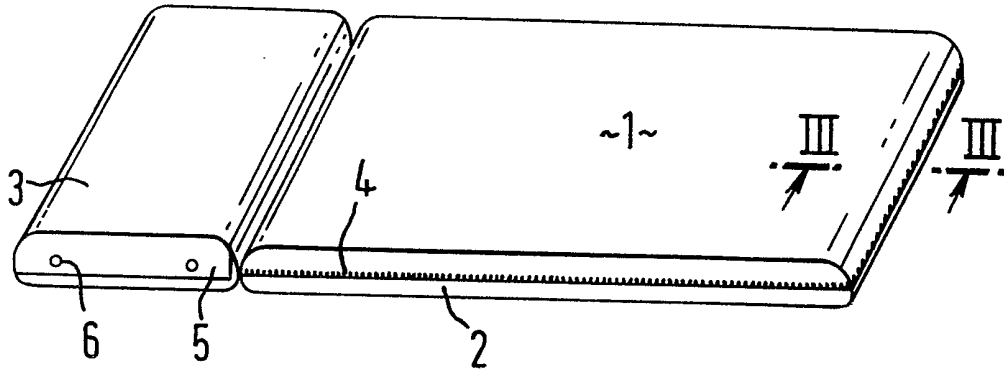


FIG. 1

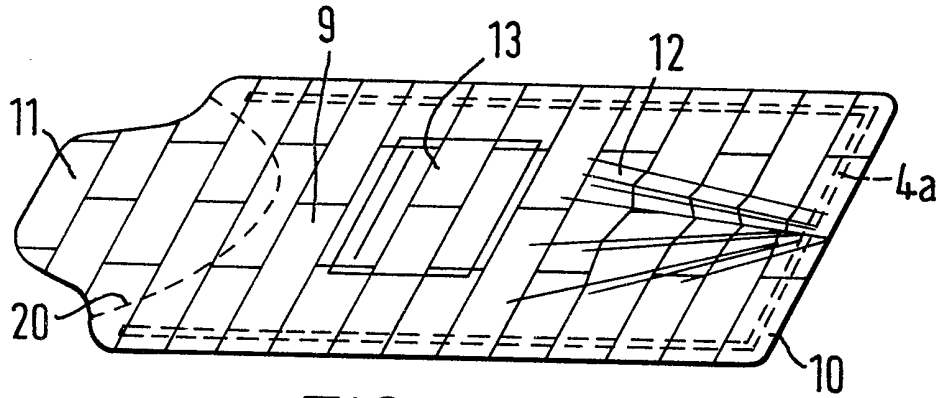


FIG. 2

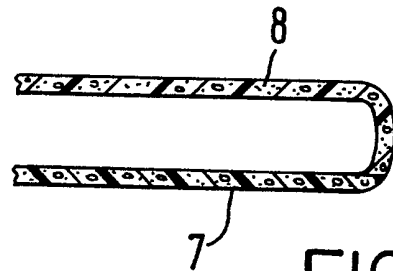


FIG. 3

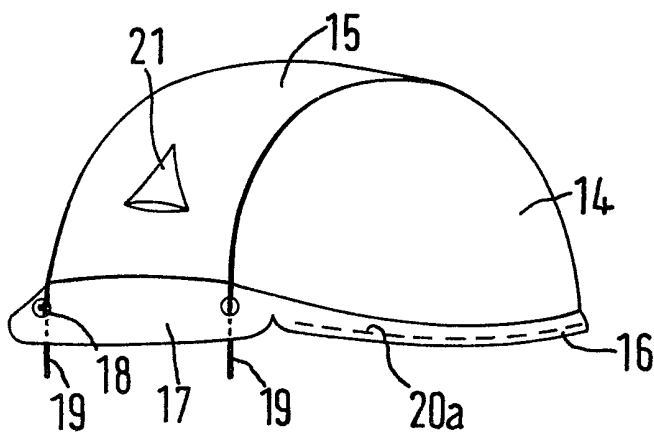


FIG. 4

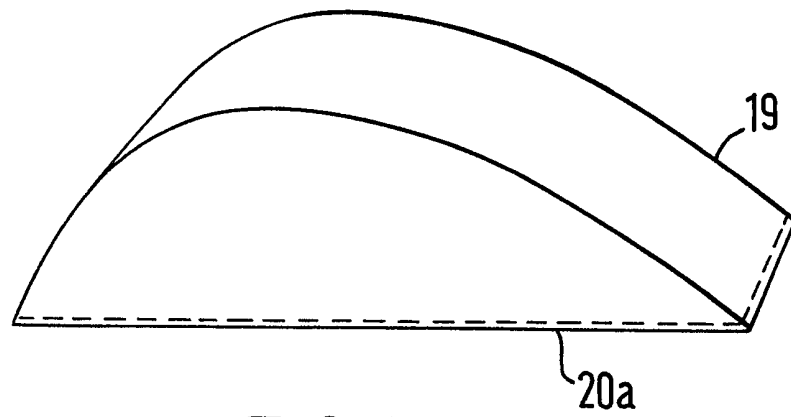


FIG. 5

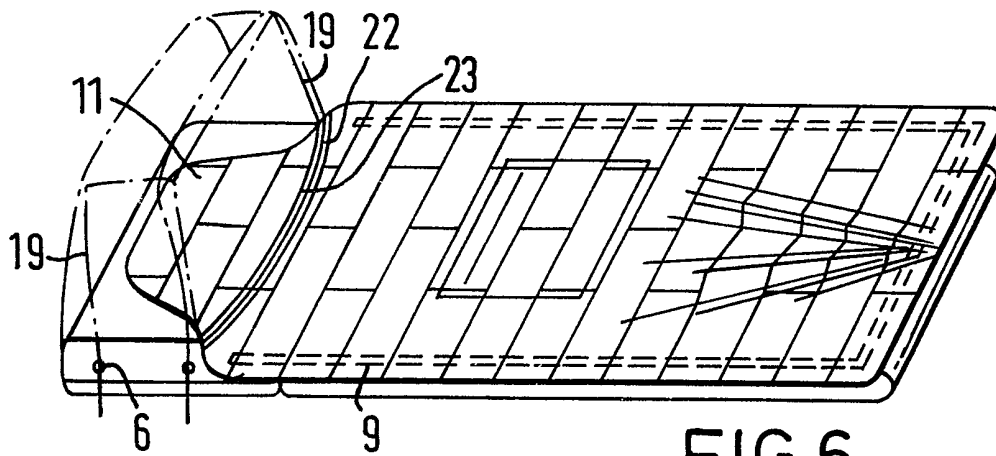


FIG. 6

## SPECIFICATION

## Sleeping bags

5 The present invention relates to sleeping bags.

Sleeping bags are often used for sleeping directly on the ground or on a relatively insubstantial ground covering such as a ground sheet. Sleeping bags are conventionally quilted and filled with an insulating material such as down or synthetic fibres. The weight of a sleeper tends to compress the insulating material in the base of the sleeping bag, thus lowering its insulative effect and causing the sleeper to become chilled by the cold ground upon which he sleeps.

In an attempt to overcome this problem, those sleeping outdoors often employ a form of thin foam mattress composed of closed cell foam which provides substantial insulation from the ground.

Whilst such mattresses can provide good insulation, they are somewhat bulky to transport. Also, because they are generally not very thick, they do not greatly mask the hardness of the ground and so, apart from their insulation properties, do not greatly enhance the comfort of the user.

Inflatable air beds are known and are used in camping in conjunction with conventional sleeping bags. Such air beds are however an additional item to transport. Also, since sleeping bags are intended to be usable without an air bed beneath them, the insulation value provided in the lower part of the sleeping bag will to a large extent be unnecessary when the sleeping bag is used in conjunction with an air bed and this will represent both an unnecessary weight to transport as well as an unnecessary expense.

The present invention provides a sleeping bag comprising a gas inflatable mattress portion and a body covering portion attached thereto.

Preferably, the body covering portion is a quilt containing a filling of insulative material such as down, fibres or a synthetic substitute therefor.

Quilts may be made in various weights to provide various degrees of insulation for different climates. Alternatively, the body covering portion may be composed of a sheet type fabric or a blanket type fabric depending upon the conditions in which the sleeping bag is to be used.

It may be desirable to provide ventilation, e.g. by airholes, in the covering portion. Preferably, the body covering portion is detachable from the mattress portion. For instance, the body covering portion may be attached by a zip-fastener, e.g. an open-ended zip-fastener.

Preferably, the body covering portion is attached to the mattress portion over the greater part of its periphery, preferably leaving only a relatively small opening similar to the mouth of a conventional sleeping bag.

Preferably, the body covering portion is of greater width than the mattress portion to provide a roomy sleeping volume therebetween.

Preferably, the body covering portion at its "head" end is formed as a flap or tongue which

the user may pull over his head and/or shoulders, the sides of the tongue not being attached to the mattress portion.

Preferably, the body covering portion is provided with pockets. Such pockets may be provided on the outer surface of the body covering portion and may be provided with suitable closure means such as zip-fasteners. Such pockets may be used for the storing of personal articles or may be used to receive clothing, for instance to increase the warmth of the bag.

Preferably, the mattress portion is divided into separately inflatable body and pillow portions.

Preferably, at least one major wall of the mattress portion is composed of or includes a layer of a foam material, for instance a closed cell foam. Preferably, each of the two opposed major walls of the mattress portion is composed of or includes a layer of a foam material. Preferably, the lower of the major walls of the mattress portion is composed of or includes a layer of foam which is harder than that of the upper major wall of the mattress portion.

The foam should in each case be chosen such that the bag is not excessively bulky when rolled up and not excessively heavy.

The sleeping bag may include a hood member attachable to the mattress portion, typically to a pillow-portion thereof. The hood may be such as to provide weather protection or may be such as to provide protection from insects. The hood may if desired extend down the length of the sleeping bag from the head-end by a substantial amount and may even extend over the full length of the sleeping bag.

Preferably, the hood comprises one or more support members causing the hood to stand clear of the head of an occupant of the sleeping bag. The lower periphery of the hood is preferably secured to the body covering portion of the sleeping bag by suitable means such as a "Velcro" (RTM) seal.

The invention will be further illustrated by the following description of a specific embodiment thereof with reference to the accompanying drawing in which:-

*Figure 1* is a perspective view of a mattress portion of a sleeping bag according to the present invention;

*Figure 2* is a perspective view of a body covering portion of the same sleeping bag;

*Figure 3* is a cross-sectional view through the mattress portion of *Figure 1* on the line iii-iii;

*Figure 4* is a perspective view of a hood for a sleeping bag of the invention;

*Figure 5* shows an alternative form of hood; and  
*Figure 6* is a perspective view of an assembled sleeping bag with a hood.

As shown in *Figure 1*, a sleeping bag according to the invention comprises a mattress portion (1) comprising a body support portion (2) and a pillow portion (3). The body support body portion (2) and the pillow portion (3) are each provided with a suitable air inlet valve by means of which they may be inflated.

One-half of an open ended zip (4) extends

around the two long sides and the bottom short side of the body support portion (2) of the mattress portion (1).

A flap of material (5) is provided upon each side of the pillow portion (3) and provides a pair of holes (6) the function of which will be explained later in connection with the description of Figure 4.

As shown in Figure 3, the material of which the mattress portion is composed is a closed cell foam material. The base (7) of the mattress portion is composed of a closed cell foam which is harder and less easily compressed than is the top part (8) of the mattress portion. Such a construction provides good resistance to puncturing of the mattress by sharp objects on the ground, very high insulation against cold ground and a comfortable sleeping support.

The foam material of the mattress portion is preferably covered with a cover of fabric to increase comfort in use.

As shown in Figure 2, a body covering portion (9) of the sleeping bag is provided in the form of a quilt of fabric material divided into pockets stuffed with an insulation material such as down. Around the lower edge and the two longer edges of the quilt runs the other half (4a) of the open ended zip. This is engagable with its counterpart (4) on the mattress portion to join the body covering portion to the mattress portion of the sleeping bag. The half of the zip (4a) is secured to the underside of the body covering portion adjacent the edge but leaving an overhang portion (10) to increase the degree of insulation against heat loss through the zip.

At the head end of the body covering portion, the quilt is formed into a protruding tongue of material (11) which the user may pull up over his shoulders and head.

The weight and insulation value of the body covering portion may be selected according to the conditions in which the sleeping bag is intended to be used. For use in relatively warm situations, the quilt shown in Figure 2 may be replaced by a blanket or sheet provided with suitable means for attachment such as the half zip (4a).

The width of the body covering portion when flat is substantially greater than that of the mattress portion so as to provide a roomy pocket between the two to increase the comfort of the user. Accordingly, a gusset arrangement (12) is conveniently provided in the lower part of the body covering portion so that the transverse run of the half zip (4a) can correspond in width to that of the half zip (4).

A pocket (13) closable by zip is provided in the upper surface of the quilt (9) into which may be placed personal possessions such as clothes either for convenience or to increase the warmth of the quilt. More than one pocket (13) may be provided.

As an optional but preferred feature, the sleeping bag according to the invention may also comprise one or more hoods as shown in Figure 4. The hood as shown in Figure 4 is intended for providing weather proof cover for the head of a sleeper when the sleeping bag is used out of doors with-

out making use of a shelter such as a tent. In such a situation the quilt should preferably be water proof. The hood is composed of water proof material and has a transparent forward section (14) and an opaque rear section (15). Optionally, the entire hood may be of transparent material. Alternatively, the hood may be opaque except for a window extending across the front of the hood. The hood has a skirt (16) by means of which it may be attached over the remainder of the sleeping bag. The skirt (16) has a pair of side flaps (17) containing holes (18) corresponding in spacing to the holes (6) of the pillow portion of the mattress portion. A pair of plastic coated steel wires (19) pass through the holes (6), through the holes (18), through tubes formed in the material of the hood and down through corresponding holes (18) and (6) on the other side of the sleeping bag. The wires may then be pushed into the ground on either side to fix the hood. The wires constitute a supporting frame work for the hood to keep it clear of the sleepers face. A velcro seal (20) (20a) is provided on the surface of the quilt and the underside of the forward portion of the skirt (16).

A ventilation opening (21) is provided in the hood.

An alternative or additional hood may be provided which instead of providing water proofing provides an anti-insect netting. If desired both portions (15) and (14) of such a hood may be of netting material. In other respects the hood may be of similar construction to that shown in Figure 4.

In an alternative type of hood, shown in Figure 5, the hood extends over the entire length of the mattress portion and is attached around the entire periphery by a suitable means such as poppers or a velcro seal (20a). Once again, the hood is supported by support wires (19), this time extending longitudinally of the hood on either side.

A hood as shown in Figure 5 provides more air inside the hood to increase the comfort of the user. This will be of greater relevance where the hood is a waterproof hood than where it is of a netting material.

The hood may be made integral with the upper portion of the body covering portion rather than being a separate item.

A pocket may be provided across the body covering in which the hood, whether separate or integral may be stored.

An arrangement of this kind is shown in Figure 6.

As shown in Figure 6 a netting hood is supported on a pair of support wire hoops 19 and is secured to the quilt 9 by a strip 22 of velcro extending across the quilt just at the base of the tongue 11 and extending at the sides and back of the pillow 3. Strip 22 extends along one edge of the opening of a hood receiving pocket 23.

Alternative hoods, such as water proof hoods may be provided.

The sleeping bag according to the invention may be provided with one or more hoods and one or more body covering portions for use in different conditions.

The sleeping bag may also be provided with a carrying case in the form of a rucksack particularly adapted to packing the bag according to the invention.

5 Whilst the invention has been described with reference to a specific embodiment thereof, it should be appreciated that many modifications and variations are possible without departing from the scope of the invention. For instance, the body covering portion may be secured to the mattress portion by means other than an open ended zip, for instance by poppers, velcro or ties. However, it is desirable to provide a continuous form of connection such as a zip in order to maintain insulation  
10 across the join.

As illustrated, the sleeping bag described is capable of allowing a user to sleep in comfort out of doors without using a tent and represents an increase in comfort and a saving in weight over the  
20 corresponding number of different pieces of equipment conventionally used which it replaces.

#### CLAIMS

- 25 1. A sleeping bag comprising a gas inflatable mattress portion and a body covering portion attached thereto.
2. A sleeping bag as claimed in claim 1, wherein the body covering portion is a quilt containing a filling of insulative material.
- 30 3. A sleeping bag as claimed in claim 1 or claim 2, wherein the body covering portion is detachable from the mattress portion.
4. A sleeping bag as claimed in claim 3 wherein  
35 the body covering portion is attached to the mattress portion over the greater part of its periphery.
5. A sleeping bag as claimed in any preceding claim, wherein the body covering portion is of greater width than the mattress portion to provide  
40 a roomy sleeping volume therebetween.
6. A sleeping bag as claimed in any preceding claim, wherein the body covering portion at its "head" end is formed as a flap or tongue which the user may pull over his head and/or shoulders,  
45 the sides of the tongue not being attached to the mattress portion.
7. A sleeping bag as claimed in any preceding claim, wherein the body covering portion is provided with pockets.
- 50 8. A sleeping bag as claimed in any preceding claim, wherein the mattress portion is divided into separately inflatable body and pillow portions.
9. A sleeping bag as claimed in any preceding claim, wherein at least one major wall of the mattress portion is composed of or includes a layer of  
55 a foam material.
10. A sleeping bag as claimed in claim 9, wherein each of the two opposed major walls of the mattress portion is composed of or includes a  
60 layer of a foam material.
11. A sleeping bag as claimed in claim 10, wherein the lower of the major walls of the mattress portion is composed of or includes a layer of a foam which is harder than that of the upper major  
65 wall of the mattress portion.

12. A sleeping bag as claimed in any preceding claim including a hood member attachable to the mattress portion and comprising one or more support members causing the hood to stand clear of the head of an occupant of the sleeping bag in use.

13. A sleeping bag substantially hereinbefore described with reference to and as illustrated in Figures 1 to 4 and Figure 6, or Figures 1 to 3 in combination with Figure 5, of the accompanying drawing.

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