Aug. 20, 1963 E. W. SIDEBOTHAM 3,100,900

BEDS

Filed April 30, 1962

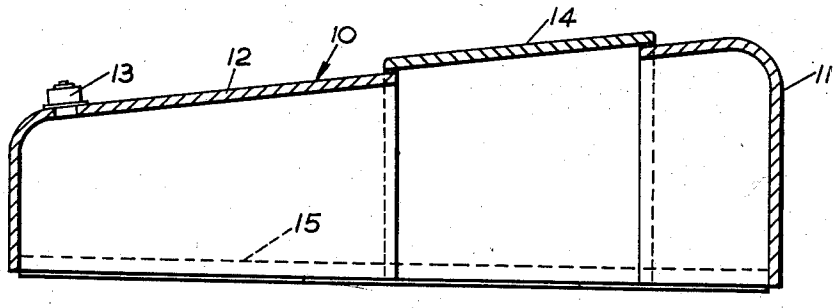


Fig. 1.

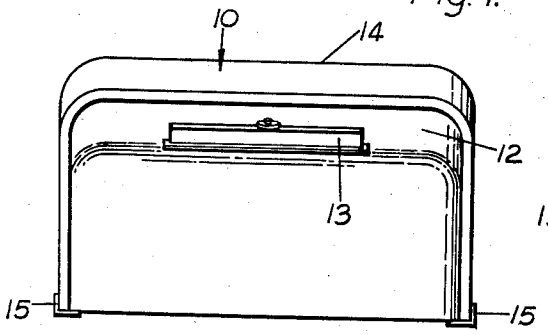


Fig. 1a.

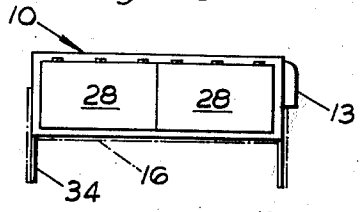


Fig. 3.

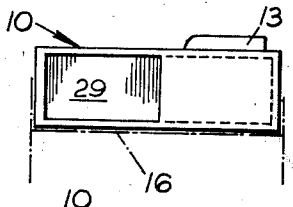


Fig. 4.

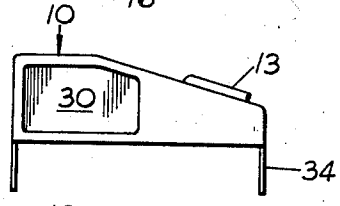


Fig. 5.

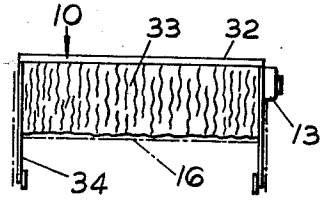


Fig. 6.

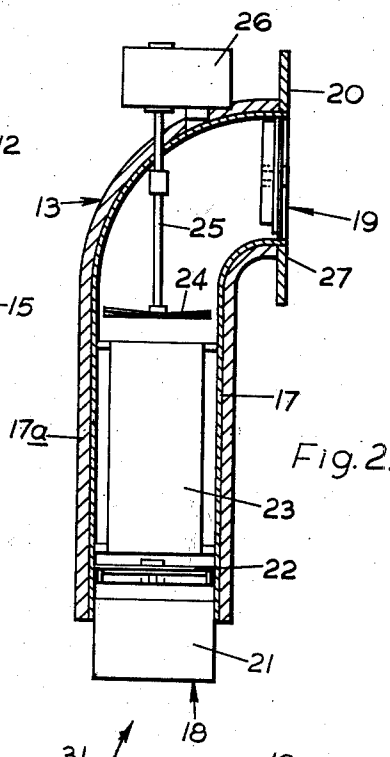


Fig. 2.

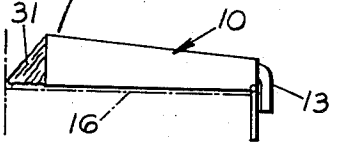


Fig. 7.

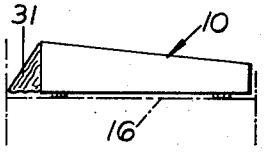


Fig. 8.

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BEDS

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1 Claim. (Cl. 5—284)

This invention concerns beds, divans, bunks, cots and the like (hereinafter referred to as "beds" for the sake of convenience) adapted for or arranged so as to support a reclining or recumbent person.

Hitherto, in general, beds, although considered a necessity, have been rather overlooked insofar as provisions for the comforts and health of a person thereon recumbent, are concerned.

It is still generally accepted that a bed should have a plurality of bedclothes or the like to provide thermal insulation and that initial warmth should be derived from such warming devices as warming pans, hot water bottles or, of more modern origin, electric blankets.

Warming devices are now becoming obsolete as central heating of houses (including bedrooms) becomes more popular, but still no account is taken of another factor conducive to health and that is the purity of the atmosphere.

It is an object of the present invention to provide a conditioned air "blanket," for use in conjunction with a bed, whereby air of a required temperature, humidity and/or purity may envelope a person reclining or recumbent on such bed without the need for bedclothes or warming devices as hereinbefore described.

According to the present invention there is provided a conditioned air blanket comprising a cover which is adapted to fit partly or wholly over a bed, said cover being of thermally insulating materials, having an air conditioning unit, and being arranged to define, between itself and the bed, an air chamber wherein a recumbent or reclining person may be accommodated.

The invention also provides a conditioned air blanket having a cover which is adapted to fit partly or wholly over a bed and which includes an air intake, heating or cooling means and means for drawing air through said air intake and over said heating or cooling means, into an air chamber defined between the cover and the bed. The arrangement is such that the temperature of air in the air chamber may be kept at a desired constant level and that such air is constantly refreshed.

Chemical (e.g. anti-acid) and/or gauze (e.g. anti-dust) filters may advantageously be provided through which the air is passed and, depending on climatic conditions, a humidifier or dehumidifier may also be provided.

Within the cover may also be fitted an electric light and automatic, thermostatic or manually operable controls for the various air conditioning apparatus or any other convenience which may improve the amenities.

In a first preferred embodiment, the cover is provided with legs and stands on such legs over a bed.

In a second preferred embodiment, the cover may be arranged to rest on a bed frame (or be secured thereto) peripherally thereof.

In a third preferred embodiment, the cover may be integral with the bed.

In a fourth embodiment, the cover may be retractable to the foot or to the head of the bed.

In all cases wherein it is impractical or not feasible for the cover to be moved to permit a person access to or egress from the air chamber, side walls of the cover may be provided with hinged or sliding doors or may be provided with preferably heavily curtained apertures.

The invention will be described further, by way of example, with reference to the accompanying drawings, in which:

FIG. 1 is a vertical section through one embodiment of a cover for providing a conditioned air blanket in accordance with the present invention;

FIG. 1*a* is an end elevation of the cover of FIG. 1;

FIG. 2 is a vertical section of one form of air conditioning apparatus for use with a cover; and

FIGS. 3 to 8 are each a side elevation of an embodiment of a cover mounted on a bed.

In the drawings, like reference numerals indicate similar parts.

As shown in FIGS. 1 and 1*a*, a conditioned air blanket is defined by a cover **10** comprising a translucent or transparent head cover **11**, a foot cover **12** incorporating an air conditioning unit **13**, and a sliding middle portion **14**. The covers **11** and **12** and the middle portion **14** are each of a thermally insulating material such as resin-bonded glass fibres or a like material. A runner **15** is secured to each side of the head and foot covers **11** and **12** on which runners the middle portion **12** slides. The cover **10** is supported on a bed frame (not shown in FIGS. 1 and 1*a* but referenced **16** where appropriate on FIGS. 3 to 8) and defines thereabove a chamber of sufficient size to accommodate a mattress (not shown) and to provide for unimpeded movement of a recumbent or reclining person on said mattress.

The air conditioning unit may be in the form shown in FIG. 2 from which it will be seen that it comprises an air duct **17** having a thermally insulating outer casing **17***a* and having an inlet **18** and an outlet **19**. The outlet **19** has a peripheral mounted flange **20** whereby the unit may be secured to the cover **10**. An air filter **21** is secured in the inlet **18** and serves to purify air drawn therethrough by means of chemical (e.g. anti-acid) and/or gauze (e.g. anti-dust) filters.

A variable opening in the duct **17** for controlling the volume or air drawn through the duct, is shown at **22** and a plurality of electrical heating elements are indicated diagrammatically at **23** and, through these, air, after being purified, is drawn.

The air is drawn through the duct **17** by means of a fan **24** mounted on a spindle **25** of a motor **26** which may be, as is shown, mounted outside the duct **17**.

Adjacent the outlet **19**, there is a grill **27** and a thermostat to control the temperature of the air as it enters the chamber defined by the cover **10**. A second thermostat (not shown) may be provided in the interior of the chambers, for example, adjacent the head portion of the cover which thermostat would be sensitive to the temperature of the air within the chamber to ensure that this temperature remained substantially constant at a desired level. This second thermostat is preferably manually set.

In use, the sliding middle portion **14** is slid forwardly to enable a person to enter the chamber and is then moved rearwardly.

Either previous or subsequent to the entry of the person into the chamber, the air conditioning unit is switched on. This feeds warm or cold purified air to the chamber which serves to displace air between the cover as a whole and the bed.

Thus, it will be appreciated, the use of bedclothes is eliminated, other than perhaps a sheets for an occupant of the chamber to lie on. Moreover, a person recumbent or reclining within the chamber breathes conditioned air so that the arrangement is conductive to health.

The invention is not confined to the precise details of the foregoing example and variations may be made thereto. For instance the cover **10** may be secured to the bed frame or may merely rest thereon. The cover

10 may be provided with its own legs 34 (FIGS. 3, 5 and 6).

The cover 10 may have hinged doors 28 (FIG. 3) or sliding doors 29 (FIG. 4) in the side walls or merely apertures covered with preferably heavy curtains 30 (FIG. 5) to avoid draughts.

The cover 10 may cover the whole of the bed (FIGS. 1, 1*a*, 3, 4 and 5) or only part (FIGS. 7 and 8) and, in such latter instance, the remainder of the bed may be covered with a loose fabric 31, appropriately hinging arrangements, bottom or side respectively, being made to permit access to the chamber. The cover 10 may be made of a flexible material secured to a collapsible or removable frame which may be collapsed to the head or to the foot of the bed or otherwise removed from the bed.

As shown in FIG. 6, the cover 10 may comprise a top 32 and curtains 33 (preferably of heavy material) may comprise the side walls.

A humidifier or de-humidifier, if required, may be provided in the duct 17.

The interior of the cover may also be provided with an electric light and a shelf or cupboard for small articles.

It will be appreciated that the air conditioning apparatus employed in the conditioned air blanket will be dependent upon the climatic conditions wherein the conditioned air blanket is to be used. For example, in a hot dry climate, a humidifier but not a dehumidifier would be required whereas, in arctic or sub-arctic conditions, all that is essential is a heater and fan.

The filters are not necessary in rural areas but are advantageously included in industrial areas where the air is heavily polluted.

The conditioned air blanket may include such items as a radio, fitments wherein articles of clothing may be placed, and, for example, for use in hospitals, ultra-violet or infra-red radiators and also a bell push for summoning aid.

A conditioned air blanket, in accordance with the present invention, eliminates the need for bedclothes, warming devices and the like and eliminates draughts and changes in temperature whilst simultaneously ensuring a supply of clean air at a desired temperature to a recumbent or reclining person within the cover.

I claim:

A bed structure comprising, a bed frame, an apertured canopy fitting over said bed frame and defining thereover a sleeping space for accommodating a recumbent person, a thermally insulating lining to said canopy, an aperture in said canopy, and a unitary air-conditioning unit removably fitting in the aperture of said canopy to supply conditioned air directly into the sleeping space, said air-conditioning unit including an air duct and a variable opening into said air duct and heating elements arranged in said air duct and impeller means for drawing air into said air duct and displacing it over said heating elements and into the sleeping space.

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