ABSTRACT OF THE DISCLOSURE

A mattress having a plurality of similar air-tight compartments filled with a fluid under pressure with each compartment having a valve for inflation and compartments being detachably connected to each other at the side walls thereof between the upper and lower walls.

The present invention relates to inflatable mattresses and the like, more particularly, to such a mattress comprising a plurality of compartments which can be independently inflated to different pressures and which are detachably connected to each other.

Many forms of inflatable mattresses have been devised in order to provide greater sleeping comfort and to provide particular comfort for invalids or sick persons who must remain in bed for prolonged periods of time. One form of such an inflatable mattress comprises a plurality of air-tight compartments with each compartment being individually inflated to a particular pressure. Those compartments which support the heavier parts of the body are inflated to a greater pressure than the remaining compartments. On the other hand, it is possible to put a minimum of pressure in a compartment which supports a limb of the body wherein it is desired that a minimum of pressure be exerted against the limb by the mattress. The compartments may either be individual units which are connected to each other or a single mattress may be subdivided into a number of air-tight compartments. Numerous advantages are realized by forming such a mattress from a plurality of individual compartments which are detachably connected together. However, it has been difficult to achieve a satisfactory inflatable mattress wherein the individual compartments are detachably connected to each other and each compartment is individually inflatable.

It is therefore the principal object of the present invention to provide a novel and improved inflatable air mattress.

It is another object of the present invention to provide an air mattress having a plurality of similar air-tight compartments which are detachably connected and are individually inflatable.

According to one embodiment of the present invention, the mattress may comprise a plurality of similar compartments each of which has an upper wall and a lower wall interconnected by a peripheral wall. The walls are of a flexible material which is impervious to air so as to define air-tight compartments. Each compartment is substantially rectangular in shape with the peripheral wall defining a plurality of side walls. The compartments are arranged in a pattern in the form of a mattress preferably in pairs and each compartment has a valve on a side wall for inflating the compartment with a fluid under pressure. The compartments are detachably connected to each other by slide fasteners, zippers or other form of snap fasteners which are attached to the side walls of the compartments. All portions of the fastener structure is confined to the side walls and between the upper and lower walls of the respective compartments. The compartments may be inflated by air to different pressures with the greater pressure being in the compartment supporting the heavier parts of the body.

Other objects and advantages of the present invention will be apparent upon reference to the accompanying description when taken in conjunction with the following drawings, wherein:

FIGURE 1 is an overall perspective view of the compartmented air mattress of the present invention;

FIGURE 2 is an end elevational view of the mattress illustrated in FIGURE 1; and

FIGURE 3 is a sectional view taken along the line 3–3 of FIGURE 1.

Proceeding next to the drawings wherein like reference symbols indicate the same parts throughout the various views a specific embodiment of the present invention will be described in detail.

The air mattress according to the present invention is illustrated in FIGURE 1 and indicated generally at 10. The mattress comprises a plurality of similar air-tight compartments 11 which are rectangular or box-like in shape and formed of an impervious flexible material. Each compartment comprises an upper wall 12 and a lower wall 13 interconnected by a peripheral wall 14 defining a plurality of sides 15, 16, 17 and 18.

While in the present embodiment all of the compartments are similar and hence only one compartment is described in detail, it is to be understood that the compartments may be of different sizes depending upon the particular purpose for which the mattress is intended.

The compartments 11 are arranged in pairs substantially as illustrated in FIGURE 1 in the form of a mattress.

Each compartment is capable of being individually inflated or deflated by air under pressure through a valve 19 located in a side wall of the compartment.

Each compartment 11 is further provided on its side walls with a slide fastener in the form of a zipper as indicated at 20. Since each side wall is provided with a zipper, it is apparent that the compartments may be readily connected to each other regardless of their arrangement with respect to each other. The zipper may be metallic or plastic in structure. In place of the zipper there may be provided other detachable snap fasteners which are similarly mounted on the side walls of each compartment. The fastener structure is mounted entirely upon the side walls of its respective compartment so that no portion of the fastener structure extends beyond the upper or lower walls of the respective compartment.

The fastener structure is so mounted on the side walls so that there is a minimum of space between adjacent side walls of adjacent compartments so as to minimize the gaps formed in the upper surface of the mattress as indicated at 21 in FIGURE 1.

The mattress is preferably inflated with air under pressure but other fluids including liquids could be used for particular applications. It is also possible to fill the compartments with resilient solid material such as sponge rubber or foam plastics.

The compartments themselves may be formed of a suitable air-tight synthetic plastic material or any other flexible material which is impervious to air.

In using the mattress of the present invention the compartments are preferably arranged in pairs as illustrated in FIGURE 1. However, the arrangement will largely depend upon the shape of the compartments. The compartments may be inflated to different pressures wherein the compartments supporting the heavier parts of the body are inflated to greater pressures. As a result, a person will then lie substantially level on such a mattress and a continuous flexing of the compartments supporting the heavier portions of the body will be eliminated. Accordingly, the useful life of such a mattress will be considerably increased.

Where a limb or other part of the body is particularly sensitive, it will be possible to deflate almost completely
an appropriate compartment so as to virtually remove bodily contact with this portion of the mattress. Thus, the limb or other body part will in effect bridge itself between inflated compartments.

While the compartments have been described as each having an individual inflation valve, it is to be understood that the individual compartments may be separately inflated through a central control box which is individually connected to each compartment. Such an arrangement may be preferable for more permanent installation.

Thus it can be seen that the present invention provides a compartmented air mattress wherein individual compartments are detachably connected in such a manner as to provide ultimate comfort to a person lying on the mattress. Further, each compartment is inflatable to a desired pressure so as to give added or lessened support to particular parts of the body. In addition, the individual compartments making up the present mattress may be used as separate cushions if so desired.

It will be understood that this invention is susceptible to modifications in order to adapt it to different usages and conditions and, accordingly, it is desired to comprehend such modifications within this invention as may fall within the scope of the appended claims.

What is claimed is:

1. A mattress for supporting a body and comprising a plurality of similar compartments each having an upper wall and a lower wall interconnected by a peripheral wall, said walls being of a flexible material impervious to air so as to define air-tight compartments, said compartments being substantially rectangular with said peripheral wall defining a plurality of closely spaced side walls and arranged in a pattern in the form of a mattress, a valve on the peripheral side wall of each compartment for selectively inflating the compartment with a fluid under pressure, and means on the peripheral side walls of each compartment between the respective upper and lower walls for detachably connecting said arranged compartments together in said closely spaced pattern to form a mattress wherein said upper surfaces are bridged by and support the body of the user in a preselected manner.

2. A mattress as claimed in claim 1 wherein said connecting means comprise cooperating slide fastener means on each of the side walls of each compartment whereby said walls and compartments are removably connected in closely spaced relationship.

3. A mattress as claimed in claim 1 and comprising six compartments arranged in pairs.

4. A mattress as claimed in claim 1 wherein said fluid comprises air.

5. A mattress as claimed in claim 1 wherein the pressure of the fluid in the compartment is different with the greater pressures being in the compartments supporting the heavier part of the body.

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