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SUPPORTING PAD WITH MASSAGING MEANS

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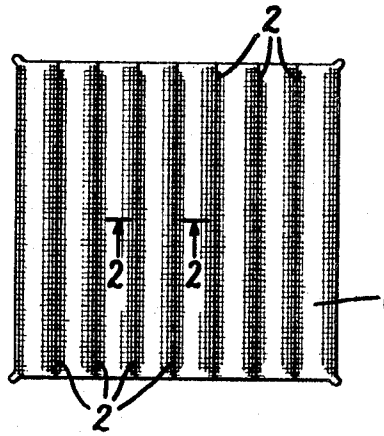


FIG. 1

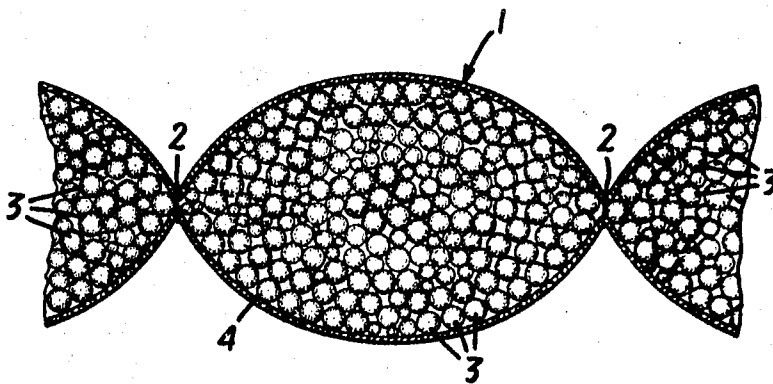


FIG. 2

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**SUPPORTING PAD WITH MASSAGING MEANS**  
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9 Claims

## ABSTRACT OF THE DISCLOSURE

A supporting pad is provided which is filled with plastic beads. The pad is useful for supporting elderly people, and chronically ill patients and may also be used for particular parts of the body. The free-rolling characteristic of the bead filling causes the shape of the pad to adapt itself readily to the shape of the object being supported and to provide a massaging action during the movement of the beads.

This invention relates to a cushion, pillow, mattress or like supporting pad comprising a soft case filled with a loose material.

The term "pad" used herein is intended to include cushions, pillows, mattresses and like supporting pads.

Persons who must lie in the same position for long periods are in danger of becoming afflicted with bed-sores, which are amongst other things caused by deficient circulation of the blood in the region where the body or part of it is resting on a bed and possibly also by insufficient ventilation and profuse perspiration. There is therefore a potential risk of infection. This is especially true of old people who cannot move very much and may not be quite continent and thus will often be resting on soiled bedding.

Nevertheless, old people and chronic patients in hospitals and rest homes still lie on bedding stuffed with chaff or straw or with millet, kapok, feathers, down or similar materials. These fillings absorb liquid and are frequently compressed so as to lose their resilience. They may be serious sources of infection as they can become readily infected with germs and thus they tend to further the staphylococcal infections dreaded in hospitals and rest homes.

The apparently more sanitary air cushions of rubber or plastics material are also not to be commended as they are inclined to fit too tightly to the skin and also because they are not readily available in a shape which will mould itself properly to the contour of the body to be supported. Moreover they do not permit ventilation and draining of liquid. Such air cushions cannot therefore adequately prevent the development of bed-sores.

Also, pads have been produced which are filled with foam rubber, but such pads are not suitable for the purpose intended as they are inclined to produce high temperatures with consequent perspiration and bed-sores.

Cushions and mattresses with a filling of polystyrene foam comminuted to flakes, granulates, or powder and not-absorbing or retaining moisture, nor being heat-insulating, have been proposed.

The object of the present invention is to provide a special effect beyond the just mentioned effects, said special effect being a massaging effect on the surface of the part of the body supported by the pad.

The invention provides a pad comprising a soft case containing a filling of loose non-absorbent small solid plastic particles having rounded outlines, the size, nature and number (filling degree in the pad) of the particles being such as to permit free rolling of said particles over and among themselves in the case, so that the shape of

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said pad will all the time be adapted to the supported part of the body, while at the same time the particles will, by their movement, exert a massaging action on the surface of said part.

The figures illustrate a pad of the present invention. FIGURE 1 is a plan view of a seat cushion and FIGURE 2 is a cross-section of the seat cushion of FIGURE 1, taken along the lines 2—2.

By the term "soft case" is meant a bag of soft flexible and breathable material which may, for example, be a porous fabric.

Conveniently the particles are of globular shape.

With a pad constructed in accordance with the present invention even a slight movement of a patient will, as already indicated, induce a slight rolling massage of the skin which brings about improved circulation of the blood and reduces the risk of bed-sores. Moreover it will tend to increase the chance of existing bed-sores healing.

According to a further aspect of the present invention the particles are preferably of different sizes. An advantage of this is that the particles of smaller size tend to pack between the particles of larger size and thereby provide a pad which tends to more readily and quickly adapt the support to the various contours of the patient's body, particularly during movements thereof.

In practice, it has been found that the size of the particles can conveniently be between 1.5 and 5.0 millimetres in diameter. This ensures to a high degree the desired adaptation to the shape of the body, an efficient massaging action and suitable ventilation.

One embodiment of pad constructed in accordance with the present invention will now be described. A case formed from a somewhat loosely woven fabric which is almost gauze-like is filled to 80 to 90% of its volume with expanded polystyrene beads having diameters between 1.5 and 5.0 millimetres.

Such beads can be formed by well-known means, such as by processing solid polystyrene beads of a suitable composition by means of steam, hot or boiling water or hot air. Such beads are, to a certain degree, elastic and will, therefore, not feel hard, whilst, on the other hand, they are so rigid that they can exert the desired massaging action.

The beads may most suitably be expanded to an extent such that one litre thereof weighs from 35 to 40 grammes. Further expansion is possible but tends to make the product too soft and deformable. If the beads are flattened under the patient's weight, they will no longer be able to act as aimed at. If the beads are too hard, the pad will become less comfortable.

The pad formed by the filling of the case with the beads can be placed around or underneath certain portions of a patient's body or alternatively can be used as a mattress.

In the latter case, it would be convenient to pocket or quilt the mattress, that is to say, to form a number of sections therein which do not communicate with other sections.

In pads constructed in accordance with the present invention the particles therein do not agglomerate and thus the pad substantially retains its original supporting shape and effect, even after prolonged use.

The particles are easily disposable by incineration and a pad can be cleansed by rinsing with a disinfectant if desired.

Since expanded polystyrene does not constitute a breeding ground for germs or other micro-organisms, there will be no conditions of growth in the pads.

Such pads need not necessarily only be used in the case of patients who are required to lie down but can be used as pads to be provided adjacent damaged bones and the like or other parts of the body wherein skin massage

through movement of the person to which the pad is applied provides a desired massing effect.

Particularly in the case that the pad is to be used as a cushion for the back of the head, it may be a drawback that the movement of the particles in the pad over and among themselves is generally accompanied by a creaking or squeaking which may be disagreeable to the patient, and disturb or prevent his sleep, make him nervous etc.

It has been found that this drawback can be remedied by the use of a solid lubricant such as magnesium stearate.

According to this feature of the invention, preferably 0.1–0.2 percent by weight of magnesium stearate calculated on the weight of the polystyrene beads is applied to beads.

Preferably, the magnesium stearate is added to the beads in a plastic bag, and the mixture is shaken and rubbed vigorously in said bag, until the magnesium stearate is uniformly distributed over the beads, after which it is found as a thin film on the beads, where it remains. When the beads have been treated in this manner, they will not creak.

The use of amounts above 0.2 percent by weight of magnesium stearate will not have a substantially higher effect.

Talcum can also be used but is less suitable, because larger amounts of this substance would have to be used.

The invention will be further described with reference to the accompanying drawings. A seat cushion is illustrated in plan view in FIGURE 1 on a scale of 1:10. The cushion is covered with a gauze-type fabric 1 which is quilted by means of seams 2. The cushion which is illustrated in cross-section in FIGURE 2 is filled with expanded polystyrene beads 3 coated with solid lubricant 4 of magnesium stearate. It is preferred but not essential that the polystyrene beads 3 be of varying sizes as illustrated.

What I claim is:

1. A supporting pad comprising a soft case containing a filling of loose non-absorbent small expanded polystyrene beads, the expanding degree, size and number (filling degree in the pad) of said beads being such as to permit free rolling of said beads over and among themselves in the case, so that said beads always adapt the shape of said pad to the supported part of a body and at the same time by their movement exert a massaging action on the surface of said part.

2. A pad as claimed in claim 1, in which said beads are of different sizes.

3. A pad as claimed in claim 2, in which the average diameter of said beads is between 1.5 and 5.0 millimetres.

4. A pad as claimed in claim 1, in which said poly-

styrene beads have been expanded to an extent such that one litre thereof weighs between 35 and 40 grammes.

5. A supporting pad comprising a soft case of gauze-like fabric containing a filling of expanded polystyrene beads having been expanded to an extent such that one litre thereof weighs between 35 and 40 grammes, said beads having an average diameter between 1.5 and 5.0 millimetres, said case being filled to between 80 and 90% of its volume with said expanded polystyrene beads.

6. A pad comprising a soft case containing a filling of loose non-absorbent small, solid plastic particles having rounded outlines, the nature, size and number (filling degree in the pad) of said particles being such as to permit free rolling of said particles over and among themselves in the case, so that said particles always adapt the shape of said pad to the supported part of a body and at the same time by their movement exert a massaging action on the surface of said part, said particles being coated with a thin film of a solid lubricant so as to eliminate the occurrence of creaking due to the movement of said particles over and among themselves.

7. A pad as claimed in claim 6, in which said solid lubricant is magnesium stearate.

8. A pad as claimed in claim 7, in which the proportion of magnesium stearate is 0.1–0.2 percent by weight of the plastic particles.

9. A supporting pad comprising a soft case of gauze-like fabric containing a filling of expanded polystyrene beads having been expanded to an extent such that one litre thereof weighs between 35 and 40 grammes, said beads having an average diameter between 1.5 and 5.0 millimetres, said case being filled to between 80 and 90% of its volume with said expanded polystyrene beads, said polystyrene beads being coated with 0.1–0.2 percent by weight of magnesium stearate based on the weight of said beads so as to eliminate the occurrence of creaking due to the movement of said particles over and among themselves.

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LAWRENCE W. TRAPP, Primary Examiner

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