

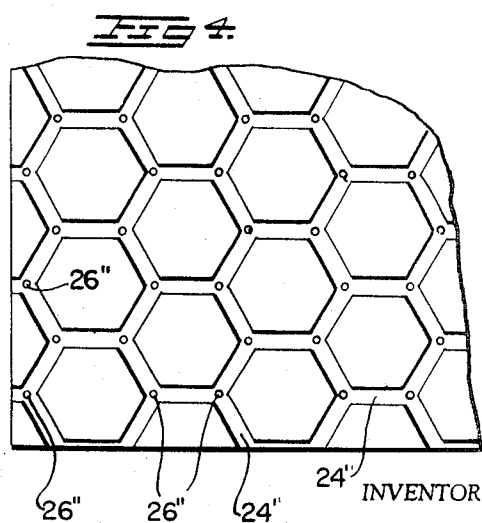
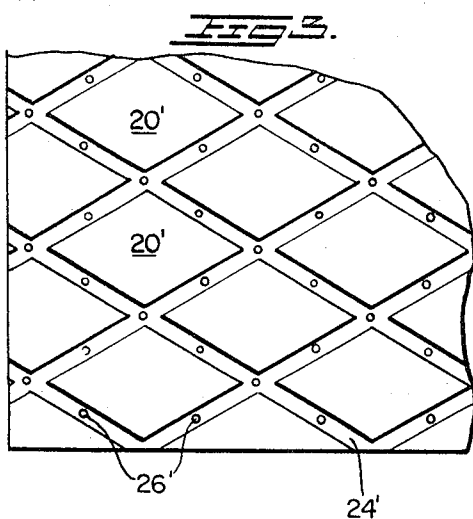
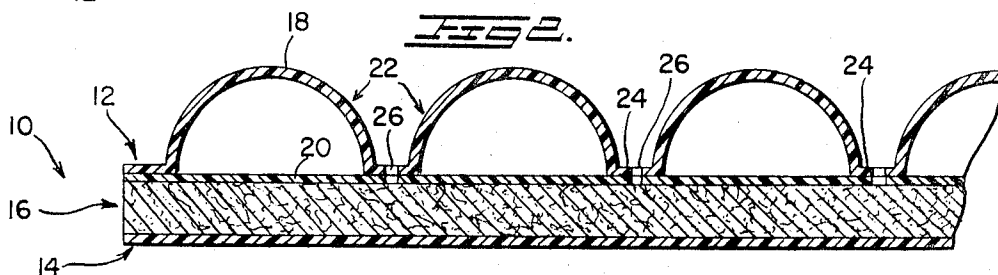
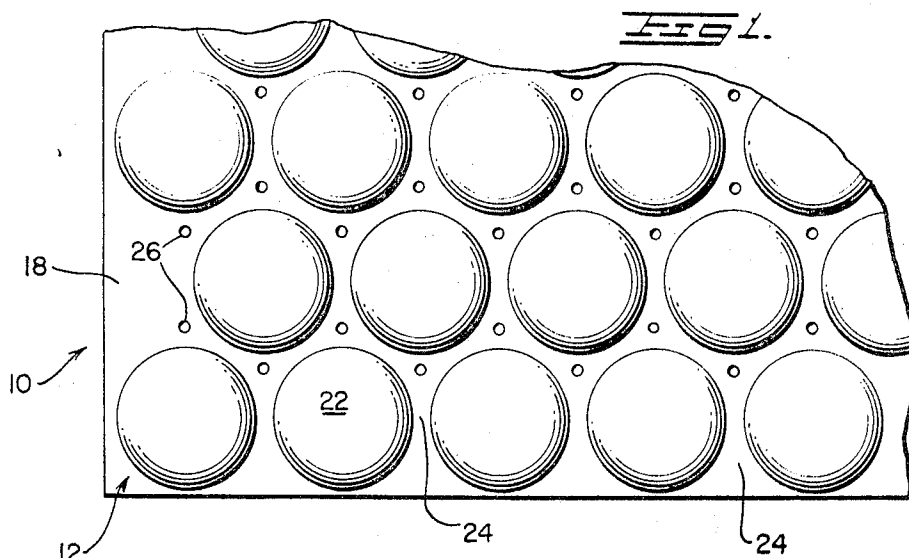
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ABSORBENT PAD

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ABSORBENT PAD

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3 Claims

ABSTRACT OF THE DISCLOSURE

An absorbent pad comprising a pneumatic cellular cushion top layer, a liquid absorbent layer and a bottom liquid impervious layer.

This invention relates to an improved absorbent pad having particular utility in hospitals, convalescent homes and the like.

It is a principle object of the present invention to provide an absorbent pad comprising a plurality of discreet layers each having an independent function which functions cooperate to provide an absorbent pad that is very comfortable, highly absorbent, and will retain fluids between an upper cushion layer and a lower liquid impervious layer.

It is a further object of the present invention to provide such an absorbent pad wherein the cushion layer consists of air cells separated from each other by partition walls which partition walls are provided with a plurality of liquid permeable perforations to thereby provide an extremely comfortable cushion zone that will permit the passage of body fluids to a lower highly absorbent layer and the circulation of air to the patient sitting or reclining on the pad.

A further object is to provide such a structure wherein a liquid impervious layer is secured to or formed on the lower surface of the highly absorbent layer to prevent the passage of body fluids from the absorbent layer to a supporting structure.

A further object of the present invention is to provide such an absorbent pad which is relatively inexpensive to manufacture and which is disposable thereby eliminating the laundry problems heretofore associated with absorbent pads.

These and other objects and advantages are provided by an absorbent pad comprising a plurality of layers and including at least a pneumatic cellular layer, a liquid absorbent layer and a bottom liquid impervious layer, said pneumatic cellular layer comprising a pair of plastic sheets having a plurality of air cells extending between opposed surfaces thereof, a portion of the opposed surfaces of the sheets being sealed to each other to form partition walls between adjacent cells and a liquid permeable perforations extending through the sheets in the partition walls.

The invention will be more particularly described in reference to the accompanying drawings wherein:

FIGURE 1 is a top plan view of an absorbent pad constructed in accordance with the teachings of the present invention;

FIGURE 2 is a sectional view of the structure illustrated in FIGURE 1;

FIGURE 3 is a top plan view of a modified form of the present invention; and

FIGURE 4 is a view like a FIGURE 1 of a further form of the present invention.

Referring to the drawings, the improved absorbent pad 10 comprises at least three layers. The uppermost layer generally designated 12 comprises a pneumatic cellular cushion layer; 14 represents a bottom layer comprising a liquid impervious plastic sheet or the like; and 16 gen-

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erally designates a highly absorbent layer sandwiched between the cushion layer and the liquid impervious layer.

The topmost layer comprises a pair of plastic sheets 18 and 20 assembled to provide a plurality of air or other gaseous or fluid filled cells 22, which cells are spaced from each other by partition zones or walls 24 formed by sealing the opposed surfaces of the plastic sheets 18 and 20 together.

In general the cells 22 are uniformly spaced about the top layer 12 and provide the primary cushioning feature of the invention. Between the cells 22 and in the partition walls 24 are a plurality of perforations 26 which perforations are large enough to permit generally unrestricted flow of body fluids from the top surface 18 of the cushion layer 12 into the absorbent layer 16. Further, the number of the perforations 26 is such that uncontrolled bladder emptying of a human may readily pass through the perforations 26 to the absorbent layer 16 without flooding over the marginal side edges of the pad when the dimensions of the pad are approximately 24 by 36 inches.

The absorbent layer 16 may comprise substantially any of the highly absorbent natural or synthetic fibers, woven, non-woven or porous members. Very satisfactory results may have been provided by the use of mats or batts of synthetic fibers, mixtures of synthetic fibers, non-woven cellulosic batts or open cell sponge-like sheets. In a specific embodiment of the present invention the absorbent layer 16 comprising a batt of cotton linters or slivers which have been treated with a conventional wetting agent to assist in drawing body fluids from the exposed surface of the air cushion element 12 into the fibrous batts.

The absorbent layer may comprise a mat or mass of hydrophobic fibers wherein the liquid retaining function of the batt takes place along the large surface area of the fibers. Non-water wetting fibers such as Dacron and nylon have the characteristic property of being non-water absorbent from the standpoint that water generally does not penetrate the fibers, however, such fibers have the characteristic of permitting fluids to wick along their surface and in this manner a batt of such fibrous material will retain or hold a large quantity of liquid upon its large surface area when disposed in batt arrangement.

The lowermost layer of the composite pad preferably consists of a thin layer of water impervious plastic such as polyethylene, polypropylene and the like. The primary function of the layer 14 is to provide a barrier for body liquids contained in the liquid holding or storage zone 16.

In FIGURE 1 the air cells 22 are generally spheroidal in transverse section; however, the shape of the cells is not critical and the cells 20' and 20'' may be diamond shaped as shown in FIGURE 3, or hexagonal as shown in FIGURE 4. The actual shape of the air cells should be such that the body of a person may be retained by the air cells in generally spaced relation to the partition zones 24, 24', 24'' which contain the perforations 26, 26', etc. By supporting the body of the patient spaced from the partition walls 24, 24' insures rapid drainage of body fluids into the absorbent batt-like layer 16 and prevents wicking of fluids from the batt to the body of the patient.

From the foregoing description, it will be seen that the present invention fully accomplishes the aims and objects hereinbefore set forth. For example, the top surface 28 of the pneumatic cellular cushion layer 12 may be covered with a soft woven or non-woven fabric-like material; short soft fibers or flocking, etc. to provide a comfort layer between the plastic and the patient. Further, it will be recognized that the plastic film or sheet 14 may be formed by spray coating the under surface of the batt or mat 16.

I claim:

1. An absorbent pad comprising a plurality of layers and including at least a pneumatic cellular layer, a liquid absorbent and a bottom liquid impervious layer, said pneumatic cellular layer comprising a pair of plastic sheets having a plurality of air cells extending between opposed surfaces thereof, portions of the opposed surfaces of these sheets being sealed to each other to form partition walls between adjacent cells and liquid permeable perforations extending through the sheet in the partition walls.

2. The invention defined in claim 1 wherein the liquid absorbent layer comprises a fibrous batt.

3. The invention defined in claim 2 wherein the liquid impervious layer comprises a sheet of polyethylene.

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References Cited

UNITED STATES PATENTS

2,269,342	1/1942	Johnson	5—350
3,156,242	11/1964	Crowe	128—296
3,308,488	3/1967	Schoonman	128—296 X
3,392,081	7/1968	Chavannes	5—348
3,394,415	7/1968	Parker	5—348

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5—350