No. 620,923. Patented Mar. 14, 1899.

J. A. HILL.

MATTRESS.

(Application filed Apr. 19, 1897.)

(No Model.)

Fig. 1.

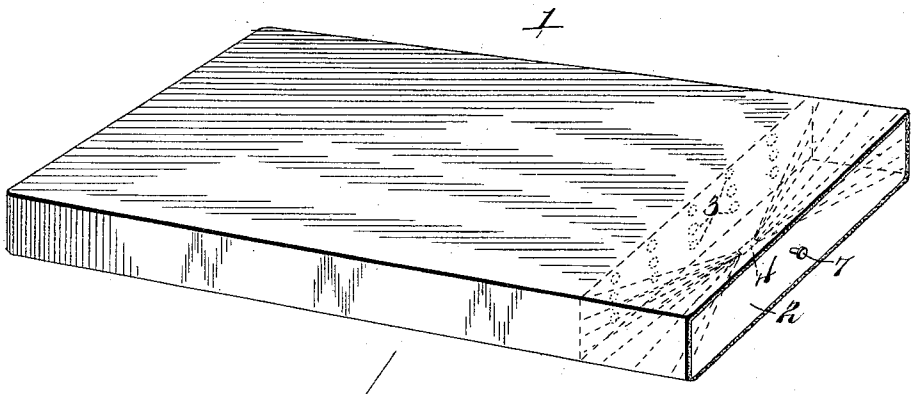


Fig. 2.

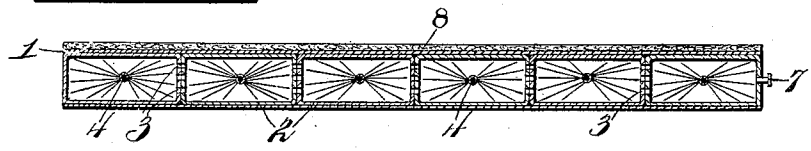
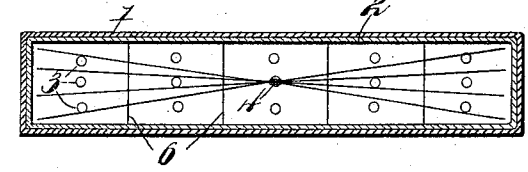


Fig. 3.



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MATTRESS.

SPECIFICATION forming part of Letters Patent No. 620,923, dated March 14, 1899.

Application filed April 19, 1897. Serial No. 632,895. (No model.)

To all whom it may concern:

Be it known that I, JAMES A. HILL, a citizen of the United States, residing at Ravenswood, in the county of Jackson and State of West Virginia, have invented a new and useful Mattress, of which the following is a specification.

The present invention relates to those pneumatic mattresses embodying a plurality of simultaneously-inflatable compartments or cells. Mattresses of this kind as heretofore generally constructed have consisted of either a plurallty of integral communicating cells or compartments or independent cells having pipe connections between them to insure the inflation of all. The objection to mattresses of the former class is that the usefulness of the entire mattress is destroyed should any one of the cells become damaged or ruptured and that of the latter class being the general clumsiness and weight of the parts and owing to the imperfect arrangement of the pipe connections the lack of even distribution of the air among the cells when the mattress is in use.

It has been proposed to equip pneumatic mattresses when constructed as a single large cell with braces to insure their proper and even distention even when under a greater pressure in one part than another; but so far as I am aware braces or stays have been provided for mattresses formed in a single cell only.

My object is the provision of a pneumatic mattress of the simultaneously-inflatable multicell type of such improved construction that any cell or compartment can be removed with facility if ruptured or damaged and replaced by another cell, so that the usefulness of the device is only impaired during the time consumed to make the change.

A further object is to provide an improved multicell pneumatic mattress in which the cells communicate in such a novel manner that the air crowded from the cell or cells receiving the greater part of the weight of the person into the other cells acts as a cushion for the weight.

Another object is to provide a multicell pneumatic mattress in which each cell is braced or stayed independently of its companions in a novel manner, thereby insuring the even distention of each cell at all times regardless of the condition of the remaining cells and facilitating the removal and replacement of the cells when necessary.

A still further object is the provision of an improved pneumatic mattress which will be cool and comfortable and light, strong, and durable, as well as being capable of production at small cost.

The foregoing and other objects of the invention are accomplished, first, by the provision of an improved pneumatic mattress composed of a plurality of independent and removable cells or compartments which are assembled side by side and when so assembled are in air communication and adapted for simultaneous inflation; second, by bracing each cell independently of its companion cells in a novel manner, whereby each cell constitutes an independent unit, and, third, by constructing and retaining the several cells in an improved manner, whereby they are adapted for coaction in a novel way.

The invention will be described in detail hereinafter and the novel features embodied in the appended claim.

In the drawings, Figure 1 is a perspective view showing one of the compartments in dotted lines. Fig. 2 is a longitudinal sectional view thereof. Fig. 3 is an enlarged detail sectional view of one of the compartments.

Corresponding parts in the several figures are denoted by like numerals of reference.

Referring to the drawings, 1 designates a rectangular or other shaped tick or casing of thin rubber, rubber-cloth, or other flexible material.

2 designates a series of oblong or other shaped air compartments or cells which are composed of strong pliable paper, being glued at the top and bottom, as well as at each end, within and to the tick or casing 1. As will be readily understood, this tick or casing 1 serves to hold the several air compartments or cells together in such manner that they constitute a regularly-formed and complete mattress and is left open at its opposite ends, as clearly illustrated, whereby any one or

more of the compartments may be readily removed therefrom independently of the other compartments for purposes of repair, &c. The contiguous walls of the several compartments are provided with holes or perforations 3, which register one with the other and permit of the passage of air from the first compartment throughout the others when the mattress is to be inflated and also allow the air to escape to the several compartments from those compartments which receive the direct weight of the person, thus providing the necessary give or spring to the mattress without the employment of supplementary springs, such as are usual with the ordinary hair or husk mattress. These compartments or cells extend the entire width from side to side and from top to bottom of the outer casing, and while they are shown in the drawings as running in a transverse direction they may be located longitudinally, if so desired.

To prevent bulging of the sides of the mattress when weight is brought to bear upon it, I provide each of the compartments with a series of flexible stays 4, extending longitudinally and secured to the opposite ends thereof in any desired manner. The number of these stays may be varied and when placed within each compartment are arranged parallel with the sides thereof, after which they are made taut by gathering together at their centers by means of a band, as illustrated, or in any preferred manner. It may be found necessary in some instances to provide stays 6, extending from the bottom to the top of each of the compartments to insure the retention of their proper shape.

For inflating my improved mattress I provide an inflating-valve 7 of the common or ordinary form, located at any desired point upon one of the compartments, by means of which the several compartments may be filled with air or water, as desired. To make the mattress even more soft and pleasant to rest upon, a cotton or hair top 8 may be placed upon the upper surface of the mattress, in which case the whole should be inclosed within a second suitable tick or casing.

By my improved construction and arrangement of parts I have provided a mattress of exceeding simplicity and lightness and one which can be folded within a small space for transportation. Should one of the compartments become punctured or damaged and unfit for use, the same may be removed and a new one can be readily placed in position without damage to the other compartments, and several compartments may be interchanged if they become unevenly stretched or bulged, which I believe to be a new feature in the art.

Without departing from the spirit or scope of my invention or sacrificing any of its advantages the same is capable of various modifications, and I therefore do not wish to be understood as limiting myself to the precise construction and arrangement of parts as illustrated and described.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

A mattress of the class described, consisting of a containing tick or casing, a series of removable compartments, each compartment being entirely separate from the others, and constructed of pliable paper, having their contiguous walls perforated to register one with the other, and each compartment braced by a series of stays, said stays being brought together and fastened at their middle points to form a series of braces drawing from a common center, substantially as shown and described.

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