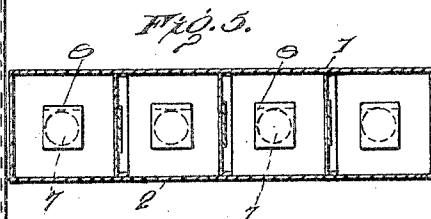
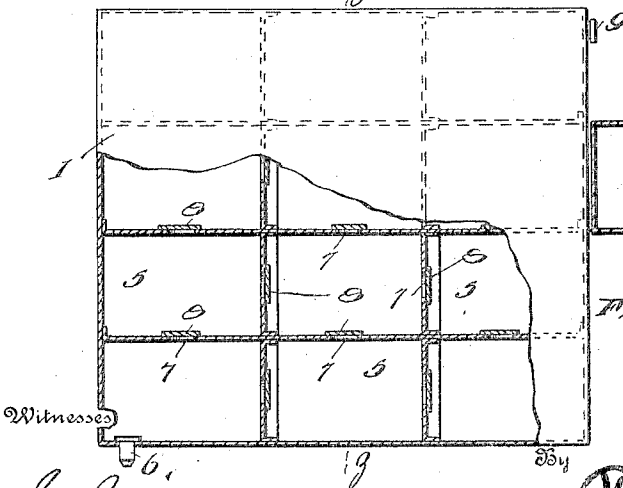
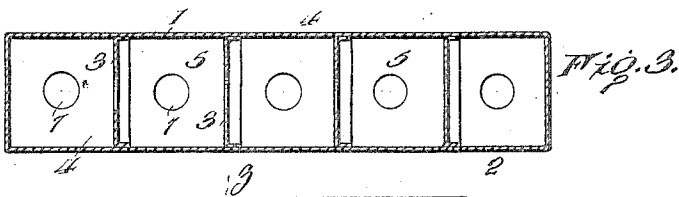
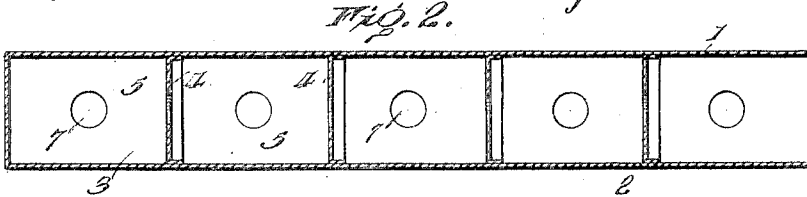
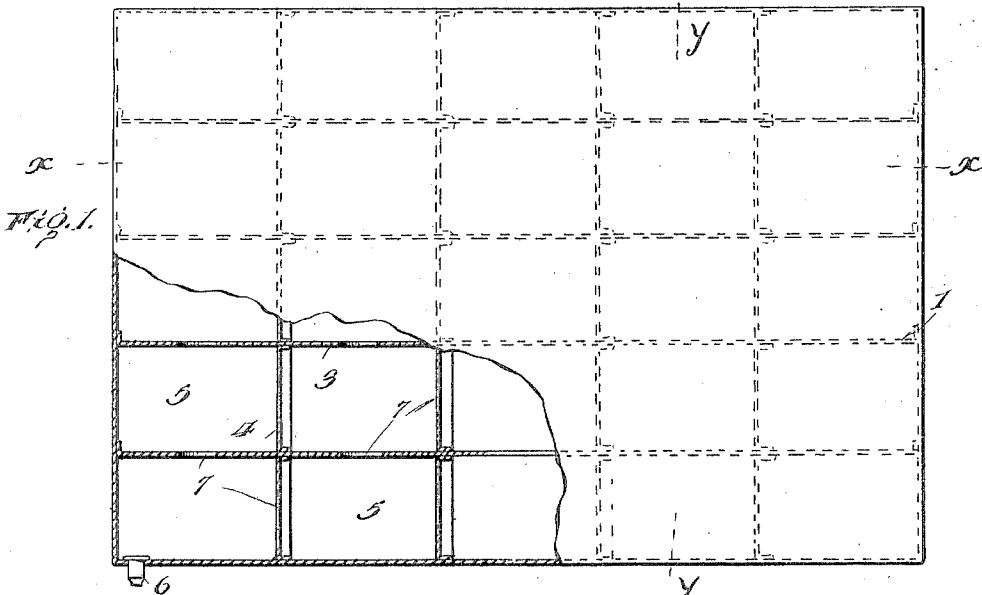


W. M. RUSSELL, JR.
PNEUMATIC MATTRESS AND CUSHION.
APPLICATION FILED JAN. 28, 1905.



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UNITED STATES PATENT OFFICE.

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PNEUMATIC MATTRESS AND CUSHION.

No. 802,526.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, WILLIAM M. RUSSELL, JR., a citizen of the United States, residing at Pink, in the county of Coffee and State of Alabama, have invented certain new and useful Improvements in Pneumatic Mattresses and Cushions, of which the following is a specification.

This invention appertains to upholstery articles such as mattresses and cushions, and aims to provide a structure of this kind which will obviate ordinary filling and enable air to be advantageously used.

The invention contemplates a cellular or compartment structure, the individual chambers having their inclosing walls forming ligatures for connecting the top and bottom of the mattress, cushion, or the like, thereby limiting their expansion or separation when inflated.

In the preferable construction the cells or compartments are provided with valved inlets, which while admitting of the free ingress of air during the inflating operation prevent total deflation in the event of the mattress or cushion being punctured. A relief-valve co-operating with the cushion or like device provides a ready outlet for the air when it is required to reduce the article to a compact package or bundle for storage or other purposes.

For a full description of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result reference is to be had to the following description and accompanying drawings.

While the invention may be adapted to different forms and conditions by changes in the structure and minor details without departing from the spirit or essential features thereof, still some of the preferred embodiments are shown in the accompanying drawings, in which—

Figure 1 is a top plan view of a mattress embodying the invention, a portion of the top being broken away to show more clearly the relative arrangement and construction of the inclosed longitudinal and transverse strips forming the cells or compartments and serving to connect the top and bottom. Fig. 2 is a longitudinal section of the mattress on the line *xx* of Fig. 1. Fig. 3 is a transverse section on the line *yy* of Fig. 1. Fig. 4 is a view, similar to Fig. 1, of a modification. Fig. 5 is a section on the line *zz* of Fig. 4.

Corresponding and like parts are referred

to in the following description and indicated in all the views of the drawings by the same reference characters.

A mattress, cushion, or like article embodying the invention comprises, essentially, a top 1, bottom 2, and longitudinal and transverse strips 3 and 4, respectively, subdividing the structure into a plurality of cells or compartments 5. The strips 3 and 4 may be continuous or composed of a number of sections, so long as the resultant arrangement provides the individual cells or compartments 5. It is preferred to have the longitudinal strips continuous and the transverse strips formed of a number of sections or parts, as thereby a minimum number of joints is provided and the cost of construction diminished. The subdividing-strips 3 and 4 also serve to connect the top and bottom 2 and limit their separation when the mattress or cushion is inflated. The strips are connected at their extremities to the edges of the mattress or cushion and likewise serve as longitudinal and transverse ties to limit the corresponding longitudinal and transverse expansion of the mattress or cushion when subjected to pneumatic distension. Any means may be resorted to for attaching the strips to one another and to the respective parts of the mattress or cushion. The most practicable way is to bend edge portions of the strips and either stitch, cement, or otherwise fasten them to the adjacent parts. The covering of the mattress or cushion—that is, the top, bottom, and edge portions—is rendered air-tight by coating the same, preferably upon the inner side, with a water-coping composition or like material, which will fill and seal the meshes or interstices of the fabric. The edge portions of the sections comprising the transverse strips upon opposite sides of a longitudinal strip are bent in the same direction, thereby enabling a single line of stitching securing each to said longitudinal strip. This arrangement results in economy of material and labor and is a material factor in practicalizing the invention.

An air-valve 6 is fitted to the mattress or cushion at the most convenient points and may be of any type such as commonly employed in pneumatic goods. In the preferable arrangement the valve 6 is located at one corner of the article, and when charging the device with air the latter passes throughout the cells or compartments in every direction. An opening 7 is formed in each wall of the

cells or compartments to admit of the air readily passing from one cell to another during the inflating operation.

In the modification the subdividing strips or
5 walls of the cells or air-compartments have valves 8 applied to the side facing away from the air-valve 6, and as a result of this construction the air may pass freely in one direction—that is, away from the air-valve 6—through
10 the series of cells or compartments, but is prevented from passing backward or in opposite direction. This precludes the total inflating of the cushion or like article in the event of it becoming punctured at a short distance from
15 the air-valve. In order to admit of deflating the cushion or like article for any purpose, as when the same is not required for immediate use, a release-valve 9 of any structure is arranged at the corner diagonally opposite to
20 the inlet-valve 6. Upon opening the valve 9 the air will have a ready outlet, thereby admitting of the cushion being rolled or otherwise formed into a compact package, so as to occupy a small space. The valves 8 are preferably
25 pieces of textile, stitched or otherwise affixed at one edge to the subdividing-strips at one side of the openings 7.

The subdividing-strips are preferably of textile—such as duck, canvas, or the like—so
30 as to withstand the strain to which they are subjected when the mattress or cushion is inflated and in service.

The advantages of a pneumatic mattress or cushion are well understood from a point of
35 comfort and lightness, the latter feature admitting of mattresses being easily handled by

the housewife and provided for escape of heat in warm weather.

Having thus described the invention, what is claimed as new is—

1. A mattress, cushion or the like subdivided by longitudinal and transverse strips into a plurality of cells or compartments, said strips being attached at their upper and lower edges to the top and bottom of the mattress
45 or cushion and at their extremities to the edges thereof to limit expansion when the mattress is inflated.

2. A mattress or cushion, subdivided by transverse and longitudinal strips into a series of cells or compartments and attached at their ends and longitudinal edges to the edges and top and bottom of the mattress, the strips forming the inclosing sides of the cells having
50 openings, and means for inflating the mattress. 55

3. A mattress or cushion provided with an air-valve and subdividing-strips forming a plurality of air cells or compartments, certain of the strips being continuous and the crossing strips being composed of sections having
60 their edge portions attached to the first-mentioned strips, and the several strips having openings to admit of uninterrupted passage of the air and equalization of the same throughout the mattress or cushion. 65

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM M. RUSSELL, JR. [L. S.]

Witnesses:

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