Dec. 14, 1926. 1,610,898

C. R. STEINER

PNEUMATIC MATTRESS

Filed Oct. 5, 1923

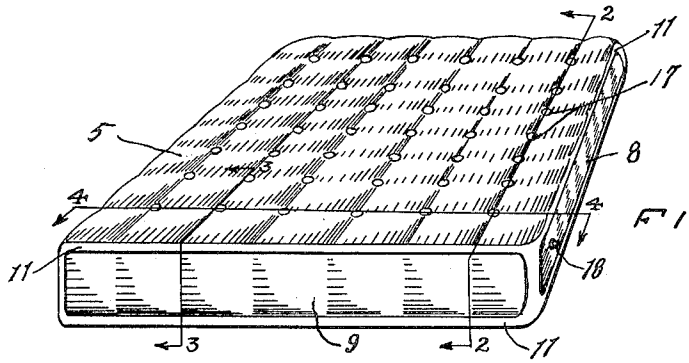


FIG 1

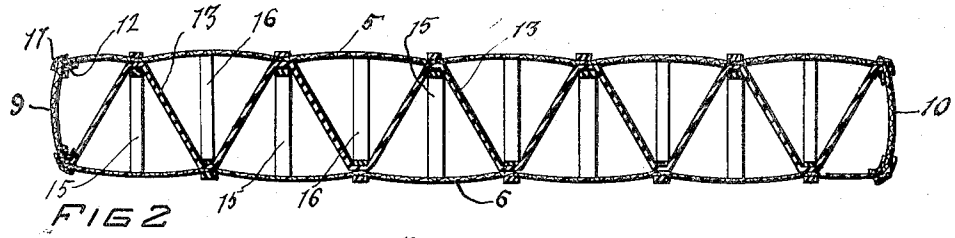


FIG 2

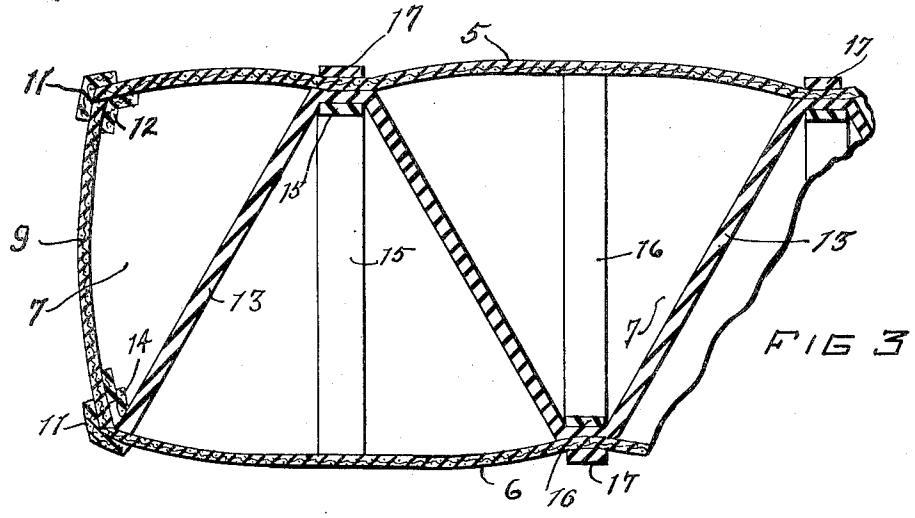


FIG 3

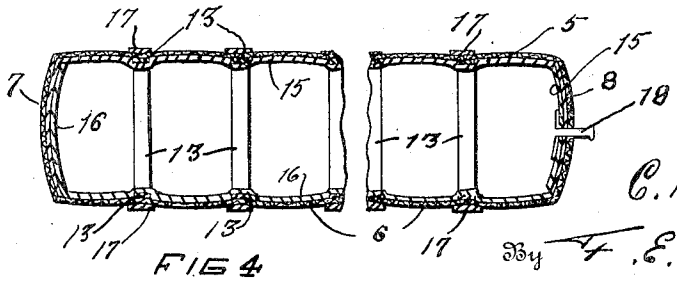


FIG 4

Inventor

C. R. Steiner

By F. E. Shannon

Attorney

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UNITED STATES PATENT OFFICE.

CLEVELAND R. STEINER, OF SPRINGFIELD TOWNSHIP, SUMMIT COUNTY, OHIO.

PNEUMATIC MATTRESS.

Application filed October 5, 1923. Serial No. 666,748.

This invention relates to pneumatic mattresses and aims to provide a new and novel mattress of simple, inexpensive construction which will be strong and durable and which when collapsed will occupy a small amount of space whereby it may be conveniently carried by tourists or campers or folded in a compact package for shipping or storage.

The invention particularly aims to provide a pneumatic mattress provided with new and novel means for reinforcing the walls thereof and having new and improved means for preventing undue distortion under inflation whereby the same when inflated will provide an efficient, durable mattress of attractive appearance.

A further object is to provide a mattress provided with efficient means for holding the upper and lower walls thereof in spaced, substantially parallel relation, which means will also prevent a longitudinal movement of one of said walls relative to the other and to thereby provide a mattress which will retain its shape during a long period of use.

The above and other objects are accomplished by the novel construction, combination and arrangement of parts hereinafter described and shown in the accompanying drawing, in which I have illustrated a preferred embodiment of the invention, it being understood that the invention is capable of various adaptations and that changes and modifications may be made or substitutions resorted to which come within the scope of the claims hereunto appended.

In the drawings like characters of reference are employed to designate like parts as the same appear in any of the several views and in which:—

Figure 1 is a perspective view of a mattress constructed in accordance with this invention,

Figure 2 is a longitudinal, vertical, sectional view of same taken as indicated by the line 2—2 of Figure 1,

Figure 3 is an enlarged fragmentary, sectional view taken as indicated by the lines 3—3 of Figure 1.

Figure 4 is a transverse, vertical, sectional view with parts broken away, taken as indicated by the lines 4—4 of Figure 1.

Proceeding now to a detailed description of the invention with reference to the particular adaptation thereof shown in the drawings, the numeral 5 is used to denote the upper wall, the numeral 6 the lower wall, the numerals 9 and 10 the end walls and the numerals 7 and 8 the side walls of my improved mattress. The side and end walls of my mattress are arranged with the respective edges thereof in abutting relation to the upper and lower walls, and are secured in assembled relation by means of a flat strip 11 of rubber, rubber fabric or other suitable material which is cemented or vulcanized in place to form an impermeable juncture between the several pieces of which the mattress is composed. If desired, a similar strip 12 may be cemented or vulcanized on the inner face of the mattress so as to cover the joints between the several parts.

The mattress is provided with a plurality of stays 13 which are formed of strips of elastic rubber which are disposed within the mattress in parallel spaced relation, longitudinally thereof. Each of the strips 13 are cemented or vulcanized or otherwise suitably secured to the inner face of the mattress at a point over or adjacent the line of juncture between the walls 6 and 9. Each strip 13 is alternately cemented or vulcanized at equally spaced points to the upper and lower walls 6 so as to extend in a vertical plane in zig zag relation longitudinally of the mattress.

The numeral 14 denotes a strip of rubber, rubberized cloth or other suitable material which is cemented across the ends of the strips 13 to assist in securely holding them to the inner wall of the mattress. The numeral 15 denotes strips of rubber, rubberized fabric or other suitable material which extends in parallel spaced relation laterally of the mattress and are cemented or vulcanized to the interior face of the upper wall 5 and are positioned over the strips 13 at the points where said strips 13 are secured to the upper wall 5. The strips 15 are also secured to the side walls 7 and 8 and extend downwardly to the point of juncture between said side walls and the lower wall 6.

The numeral 16 denotes a strip of rubber, rubberized cloth or other suitable material which is similar to the strip 15 and is similarly secured to the lower wall 6 and to the strips 13 and are secured to the side walls 7 and 8 extending upwardly to the upper wall 5 in parallel relation to the strips 15. The numeral 17 denotes a disk which is preferably composed of rubber, rubberized fabric or other suitable material. The disks

17 are cemented, vulcanized or otherwise secured to the exterior face of the upper and lower walls at points immediately opposite the points where the strips 13 are secured thereto. The disks 17 are thus arranged at equally spaced points on the outer surface of the mattress thereby reinforcing its walls and providing an article of attractive appearance.

The numeral 18 denotes an air valve which is secured in one of the side walls of the mattress whereby the same may be conveniently inflated or deflated as desired. While I have shown a mattress composed of a number of separate pieces, I prefer to vulcanize the parts in assembled relation thereby forming a one piece bag which will hold air under pressure.

It will thus be seen that my improved mattress when in an inflated condition will be provided with a plurality of stays 13 which hold the upper and lower walls in spaced, substantially parallel relation and that one of said walls cannot be moved longitudinally, inasmuch as it is held by the truss-like strips 13. The strips 15 and 16 reinforce the side walls 7 and 8 and prevent undue distortion under inflation.

In use, a pump is operatively connected to the valve stem 18 and air under pressure is introduced until the mattress is inflated to the pressure required.

It will thus be seen that I have provided a pneumatic mattress of simple, inexpensive construction which when deflated may be packed in a small space for shipment or storage.

While I have shown and described my invention as applied to a mattress, it is to be understood that it may be applied to advantage to pillows, cushions, life preservers and other inflatable articles.

Having thus illustrated my invention and described the same in detail, what I claim as new and desire to secure by Letters Patent is:—

1. A pneumatic mattress including walls composed of a plurality of pieces of rubber of impermeable material, ties securing the upper and lower walls thereof against undue distortion, said ties comprising straps of elastic rubber, each of said straps being alternately vulcanized to each wall at laterally alined points, and a plurality of parallelly arranged laterally extending strips vulcanized to the interior face of said walls and covering said straps at said points.

2. A pneumatic mattress including walls composed of a plurality of pieces of rubberized material, ties securing the upper and lower walls thereof against undue distortion, said ties comprising straps of elastic rubber, each of said straps being alternately vulcanized to each wall at laterally alined points, and a plurality of parallelly arranged laterally extending straps vulcanized to the interior face of said walls and covering said straps at said points; each of said laterally directed straps extending vertically along the adjacent side walls, substantially as and for the purposes herein set forth.

In testimony whereof I have hereunto set my hand.

CLEVELAND R. STEINER.