April 14, 1953 J. T. YOUNG 2,634,799

PNEUMATIC CUSHION

Filed April 25, 1951

Fig. 1.

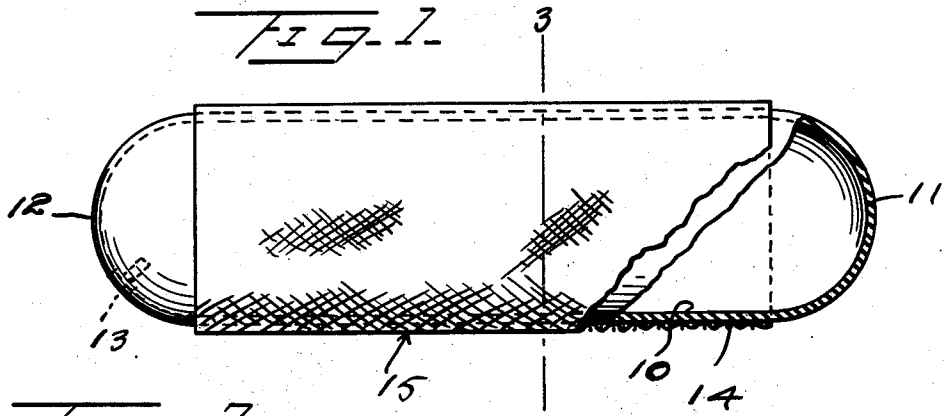


Fig. 2.

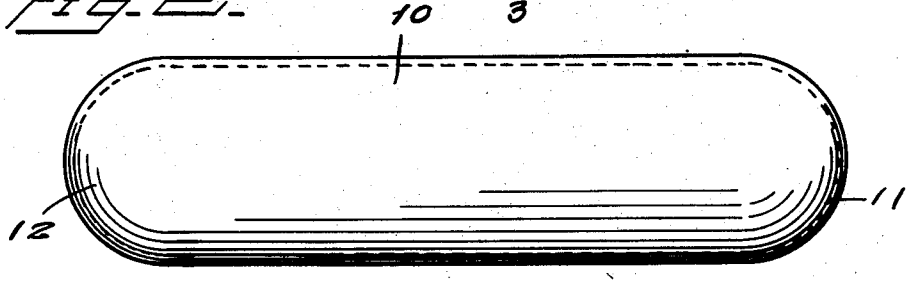
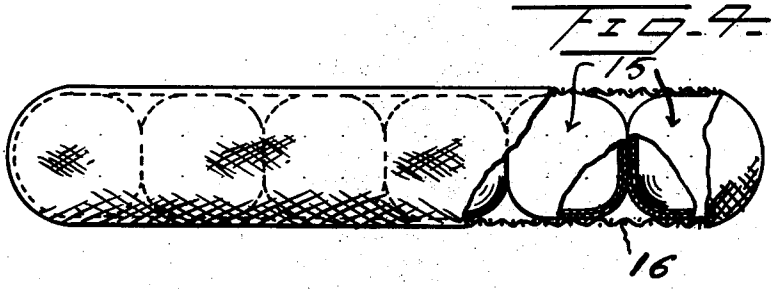


Fig. 4.



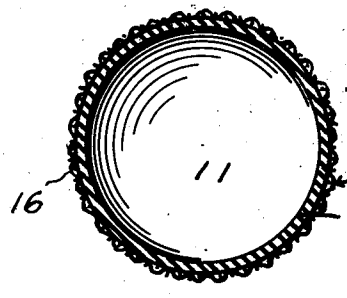


Fig. 3.

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PNEUMATIC CUSHION

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2 Claims. (Cl. 155—179)

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This invention relates to a pneumatic cushion.

An object of this invention is to provide a pneumatic unit which can be used in series or a group for producing a pneumatic cushion which will retain its normal shape and may be distorted by application of a weight thereon.

Another object of this invention is to provide a cylindrical or tubular member which is formed out of rubber and provided with closed ends of globular shape. The tubular member is encased in a fabric sleeve which terminates inwardly from the globular ends. The fabric sleeve prevents bulging of the tubular member under air pressure but permits compressing of the tubular member while the uncovered ends of the tubular member permit endwise expansion of the tubular member under pressure between the ends of the member.

In one use of this invention, as shown in the drawing, a group of these units are disposed in side-by-side relation in a covering to form a seat cushion.

With the above and other objects in view, my invention consists in the arrangement, combination and details of construction disclosed in the drawings and specification, and then more particularly pointed out in the appended claims.

In the drawings:

Figure 1 is a detailed side elevation partly broken away and in section of a pneumatic cushion unit constructed according to an embodiment of this invention.

Figure 2 is a detailed side elevation of the inner expansible member incorporated in the unit.

Figure 3 is a transverse sectional view taken on the line 3—3 of Figure 1.

Figure 4 is a front elevation partly broken away and in section of a seat cushion having a group of pneumatic units encased therein constructed according to this invention.

Referring to the drawing the numeral 10 designates a cylindrical or tubular member which is preferably formed out of rubber. The cylindrical member 10 is provided at one end thereof with a globular end wall 11 and is provided at the opposite end thereof with a similar globular end wall 12. An air valve 13 is carried by the end wall 12 and provides a means whereby the rubber member comprising the cylindrical body 10 and the end walls 11 and 12 may be inflated to the desired degree.

A cylindrical sleeve 14 is disposed about the cylindrical member 10 and is preferably formed of non-expansible fabric so that the encased tubular member 10 when fully inflated will be maintained in cylindrical form. The fabric 14 provides a means whereby the cylindrical member 10 will not become distorted under inflation, and the uncovered end walls 11 and 12 will permit the endwise distortion of the closed rubber unit embodying the walls 10, 11, and 12.

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In the event the encased unit is partly compressed within the area of the fabric 14 the end walls 11 and 12 may be distorted or bulged outwardly so that there may be a substantial contraction of the cylindrical member 10 and the fabric casing 14.

The pneumatic unit shown in Figures 1 and 2 and designated generally at 15 may form the basis for a seat cushion as shown in Figure 4. A series or group of pneumatic units 15 are adapted to be disposed in side by side relation, and these units are then encased or covered in a fabric or flexible covering 16. Preferably when the units 15 are disposed in an encased group as shown in Figure 4 the fabric sleeve 14 and the rubber cylinder 10 will be partially distorted so as to assume the configuration of a square with rounded corners.

Where the pneumatic units 15 are disposed in side by side relation in a group to form a cushion the ends of each unit are substantially loosely positioned or encased within the covering 16 so that the uncovered ends of each unit may readily expand or distort outwardly or endwise when a weight is applied to the top of the seat cushion.

It will, of course, be understood that the pneumatic unit hereinbefore described may be used in various organizations, and the showing of a group of these units encased in a covering to form a seat cushion is only one example of a use to which this pneumatic unit may be put.

What is claimed is:

1. A pneumatic cushion unit comprising a cylindrical rubber body, hemispherical rubber end walls formed integral with said body, a non-expansible tubular flexible fabric sleeve about said body, said sleeve terminating inwardly of the juncture of said end walls with said body to restrict expansion of said body, and an air valve carried by one of said end walls.

2. A pneumatic cushion unit comprising a cylindrical rubber body, globular end walls formed integral with said body, an air valve carried by one of said end walls, and a fabric sleeve fixed about said body and terminating inwardly of said end walls.

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