May 25, 1943. W. W. LINZ 2,319,873

RESILIENT BODY

Filed Oct. 13, 1941

Fig. 1.

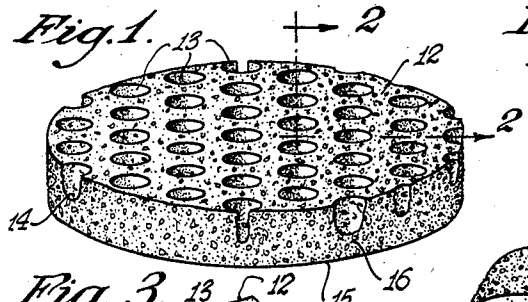


Fig. 2.

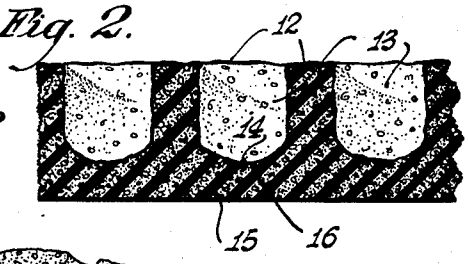


Fig. 3.

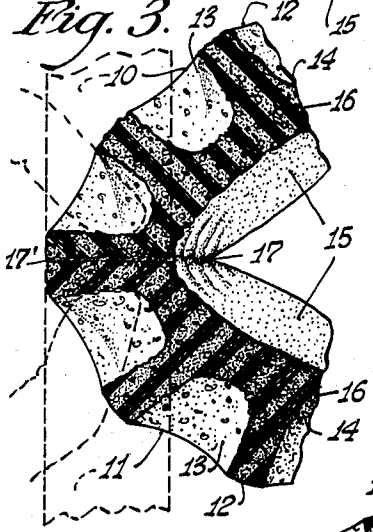


Fig. 4.

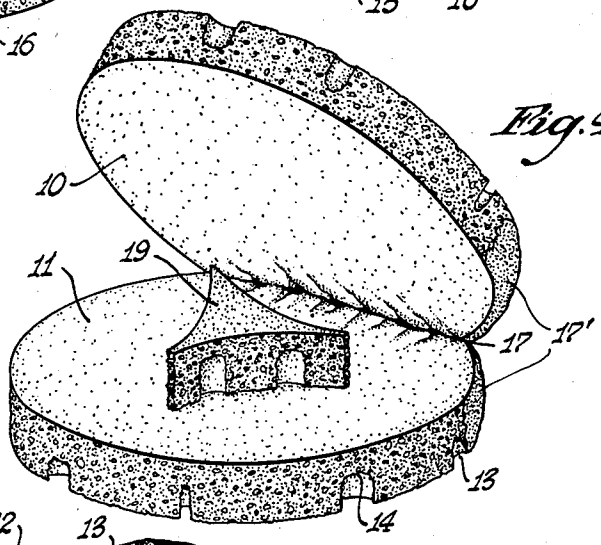


Fig. 5.

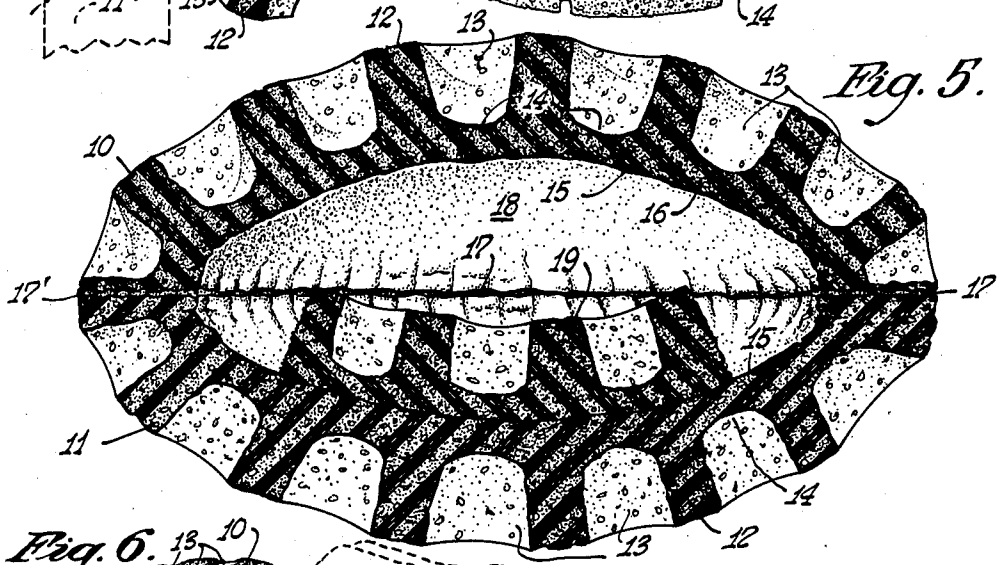
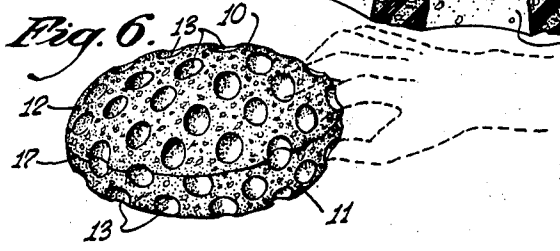


Fig. 6.



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RESILIENT BODY

William W. Linz, Chicago, Ill.

Application October 13, 1941, Serial No. 414,822

3 Claims. (Cl. 15—244)

This invention relates to a resilient body and the method of making the same and has for its principal object the provision of an improved construction of this character which will be highly efficient in use and economical in manufacture.

The term "resilient body," as the title of this invention, has been employed for the reason that the subject matter constituting this application is capable of many applications, such for example, a sponge for cleaning and polishing purposes or washing operations, a cushion for upholstered chairs and other seats, as well as a cushion cap for the coil springs of a bed or the like; and while the present specification discloses and describes the invention in the embodiment of a sponge, it is to be understood that this applicant is not to be limited in the use of his invention to that one particular embodiment, but that he is to avail himself of the application of his invention to any of the many uses to which he is entitled, including those herein specifically named.

In carrying the invention into effect it is the applicant's object to provide a sponge which is self-expanding by virtue of the manner in which it is constructed, thereby providing an interior chamber which, because of the high porosity of the material and the fine and minute individual interconnecting openings, results in an article of manufacture having the highest degree of spongy or cushioning effect.

Another object of the invention is the provision of a plurality of spaced cavities in the exterior surfaces of the body of the sponge, thereby greatly facilitating the quick and uninterrupted passage of water into the internal chamber when the sponge is used for mopping or soaking-up purposes, and which cavities result in a squeegee effect when the sponge is moved over a wet surface. These cavities are also advantageous from the standpoint that they furnish fingerholds thereby affording firm and positive gripping of the sponge body.

A still further object of the present invention is to provide within the interior chamber a stabilizer in the form of a bridge plate secured to one wall of the sponge body and when thus secured resulting in a collapsing-resistant action of the body when gripped in the hands and moved or placed over a surface with weight or pressure thereon.

Other objects will appear hereinafter.

The invention consists in the novel combination and arrangement of parts to be hereinafter described and claimed.

The invention will be best understood by reference to the accompanying drawing showing the preferred form of construction, and in which:

Fig. 1 is a perspective view of one of the layers employed in the manufacture of my resilient body;

Fig. 2 is an enlarged fragmentary sectional detail view of the same taken substantially on line 2—2 of Fig. 1;

Fig. 3 is a fragmentary sectional detail view showing the method of adhesively securing the abutting edges of the layers together and then folding the layers upon one another to provide the expanded inner chamber;

Fig. 4 is a perspective view of the two layers comprising the resilient body, showing the edges partially adhesively secured together;

Fig. 5 is a cross sectional detail view of the resilient body in its formed state; and

Fig. 6 is a perspective view of the body shown in use as a sponge.

In accomplishing the many objects of this invention, it is desirable and most preferable that the resilient body be made up of latex, being a rubber product, of rubber substantially devoid of filler, and whipped into a foamy condition and formed into finished shape while in a liquid state. It is desirable that the porosity of the material be high and that the individual minute openings of the material interconnect freely.

Forming the resilient body of material of these characteristics, I provide two layers 10 and 11, each of which is cut the desired shape and possesses the required thickness. In each of these layers, on corresponding sides 12 which constitute the exterior walls of the resilient body, I preferably form a plurality of spaced cavities 13. The bottom walls 14 of these cavities terminate a substantial distance from the opposite surface 15 of each layer, thereby providing a substantially thin wall 16 which permits free and ready passage of moisture or liquid through the layers into the inner chamber hereinafter set forth.

In manufacture the two layers are arranged upon a common surface with adjacent edge portions arranged in abutting relation with respect to each other. These abutting edge portions are adhesively secured together as at 17 by a rubber cement 17' having the characteristics of quickly cementing together the abutting portions. The two layers 10 and 11 are then turned back upon each other with the cavities on the exterior

surfaces and the edge portions stretched or otherwise expanded so as to be brought into complete abutting relation with each other around the entire peripheries of the two layers 10 and 11 and cemented securely in such abutting relation. The exterior face 12 of the layers becomes tensioned while the interior face 15 will be compressed so that there is a constant tendency for the two joined layers to assume their normal straight condition. By this structure the two layers 10 and 11 assume a substantially elliptical shape in cross section and thereby define a self-expanded interior chamber 18.

Prior to forming the two layers to provide the self-expanding interior chamber 18, I provide a stabilizer in the form of a bridge plate 19 secured by rubber cement or other adhesive to one of the layers as shown in Fig. 4. This bridge plate functions to prevent complete collapsing of the inner chamber and resists rolling action of the layers when rubbed or moved over a surface, thereby always providing a substantial body for the purpose. The bridge plate 19 also functions to cooperate with the two layers of material when they are pressed into a collapsed condition to urge them apart and to spread them into an elliptical condition. Since it is obvious that the bridge plate may perform as well if it be attached to both inner surfaces 15, it is contemplated that such structure is equally within the scope of my invention.

As before stated, I have shown my invention in the form of a sponge. As such the cavities provide substantial finger gripping surfaces as shown in Fig. 6 and when gripped in the manner shown in Fig. 6, it will be readily appreciated that the sponge may be substantially moved over and in contact with the surface, and by virtue of the presence of the cavities in the walls of the sponge there will result a squeegee action, thus assuring proper action and soaking up of the water or other moisture.

Water may be absorbed by the sponge by merely placing the same in the water and compressing the sponge. As the sponge expands the minute interconnecting openings will cause it to soak up the water, lodging the same in the inner chamber where upon again pressing the sponge, the water will be expulsed therefrom.

In using the invention as a seat cushion, no other modification other than form need be employed. This is also true when using the invention as a mattress or as a cushion cap for the springs of a mattress or bedspring.

While I have illustrated and described the preferred form of construction for carrying my invention into effect, this is capable of variation and modification without departing from the spirit of the invention. I, therefore, do not wish to be limited to the precise details of construction set forth, but desire to avail myself of such variations and modifications as come within the scope of the appended claims.

Having thus described my invention, what I claim as new and desire to protect by Letters Patent is:

1. As an article of manufacture, two opposed layers of elastic material each comprising a thickness of latex rubber devoid of filler and sufficiently porous to afford facile passage of liquid and having a plurality of spaced cavities formed on its outer surface leaving a thin wall of such latex rubber at its inner surface, said layers of elastic material having their edges adhesively secured together and folded upon each other with their inner surfaces compressed and their outer surfaces tensioned to provide a self-expanding inner chamber, and a stabilizer means within the inner chamber and adhesively secured to the inner wall of one of said layers for preventing total collapse of the inner chamber.

2. As an article of manufacture, two opposed layers of elastic material having their edges adhesively secured together and folded upon each other to provide a self-expanding inner chamber, the said layers having their exterior surfaces provided with spaced cavities to weaken the outside fibres thereof and having their interior surfaces compressed and tending to maintain said inner chamber elliptical in cross section, and a stabilizer means within the inner chamber, said stabilizer means comprising a bridge plate adhesively secured to an interior wall of one of said layers to limit the movement of the opposed layers of elastic material toward each other when an outside force is applied to said layers.

3. As an article of manufacture, two opposed layers of elastic material each comprising sponge rubber of high porosity having a plurality of spaced cavities formed on its outer surface leaving a relatively thin wall on its inner surface, said layers of elastic material having their edges adhesively secured and being folded upon each other with their outer surfaces tensioned and their inner surfaces being compressed and tending to assume a normal straight condition to provide a chamber having an elliptical cross section, and a stabilizer means within the inner chamber and adhesively secured to the inner wall of one of said layers and permitting said chamber to assume an elliptical cross section but preventing a total collapse of said chamber.

WILLIAM W. LINZ.