April 13, 1954 O. A. BERMAN 2,674,752

LATEX FOAM OR THE LIKE SPONGE RUBBER PILLOW

Filed Sept. 10, 1951

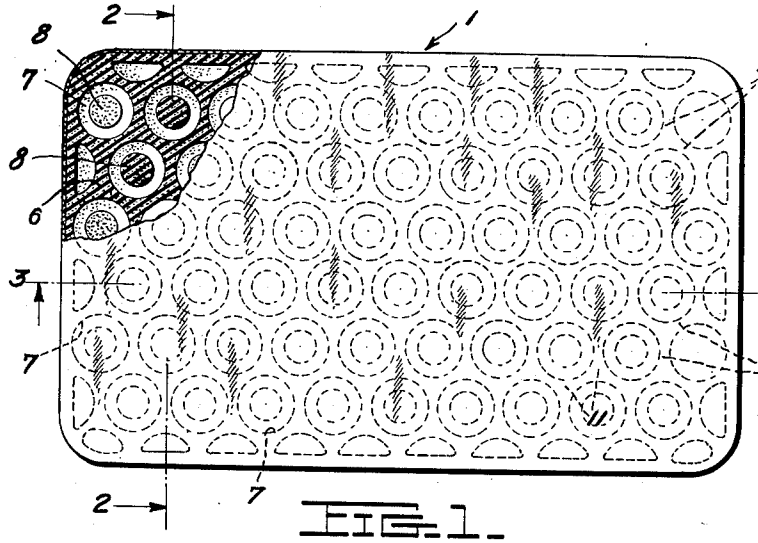


FIG. 1.

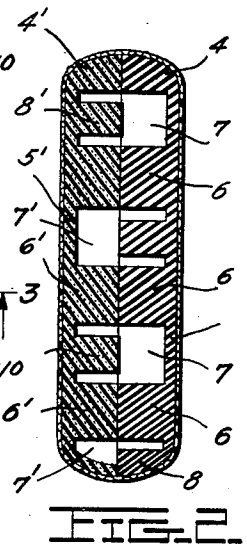


FIG. 2.

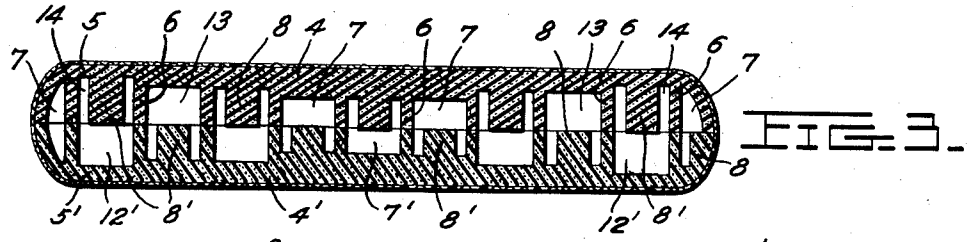


FIG. 3.

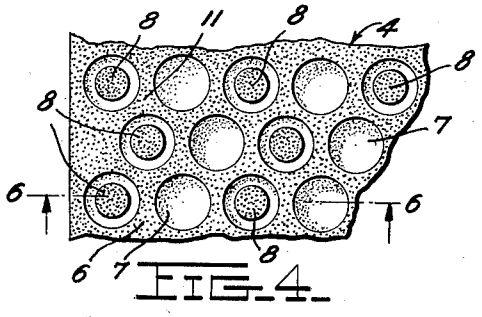


FIG. 4.

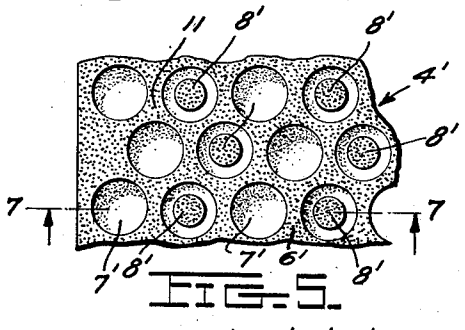


FIG. 5.

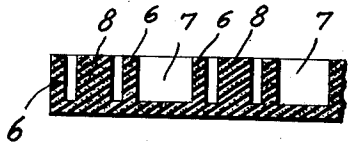


FIG. 6.

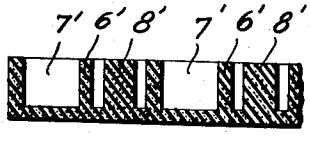


FIG. 7.

INVENTOR.

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LATEX FOAM OR THE LIKE SPONGE RUBBER PILLOW

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2 Claims. (Cl. 5—337)

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This invention relates to latex foam and the like sponge rubber pillows, especially designed to provide the maximum of relaxation, rest and refreshment, while reclining or sleeping.

It is now generally believed that in the present age of terrific physical and mental activity, one of the greatest needs of humanity is the capacity, ability and facility to completely relax in a normal and healthful manner.

It is a primary object of this invention to provide a comparatively low cost pillow capable of supporting the head and shoulders of the person using it, buoyantly and comfortably in perfect good posture, in fact, in such utter comfort that he immediately experiences a feeling of complete relaxation.

Another object of my invention is to provide a novel and highly improved pillow of the character described, which shall be provided in the form of a single unit with graduated resilience between the center and the ends to provide the greatest possible comfort.

A definite object of my invention is to provide a pillow which shall represent a substantial improvement in the art, that is, a pillow construction which will be simple in structure, economical of manufacture, durable, easily and quickly assembled, and highly efficient for the purpose for which it is intended.

It is also an object of the invention to provide a pillow construction in which lumping and undesirable features resulting therefrom will be avoided.

Another object of the invention is the provision of a pillow assembly which will retain its shape indefinitely and be possessed of a comparatively long life.

Another object of the invention is the provision of a pillow construction which will be comfortably yieldable, and which will be so constructed and arranged as to provide a maximum amount of movement in its interior elements, while at the same time retaining their operative relation.

The invention consists in the novel features of construction, arrangement and combination of parts embodied, by way of example, in the device hereinafter described as illustrating a present preferred form of the invention, and the invention will be more particularly pointed out in the appended claims.

Further objects and advantages of the invention will more fully appear from the following description taken in connection with the accompanying drawings which show, by way of example, the present preferred embodiment of the invention.

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Referring to the accompanying drawings in which the same reference characters indicate the same parts in the various views:

Figure 1 is a plan view of a presently preferred form of the invention with certain parts broken away to show the interior details.

Figure 2 is a cross-sectional view taken along the line 2—2 of Figure 1.

Figure 3 is a longitudinal sectional view taken along the line 3—3 of Figure 1.

Figure 4 is a fragmentary view of the underside of the top half section.

Figure 5 is a fragmentary view of the top side of the bottom half section.

Figure 6 is a cross sectional view taken along the lines 6—6 of Figure 4.

Figure 7 is a cross sectional view taken along the lines 7—7 of Figure 5.

Referring to the drawings, the entire pillow is designated as 1 and the present embodiment comprises a body 2 and a fabric cover or casing 3, which snugly fits and somewhat restrains the pillow laterally. The body 2 is comprised entirely of molded latex foam and comprises an upper section 4 and a lower section 4', which are joined together on a plane designated in Figure 2 as A—B and in Figure 3 as C—D. This plane is preferably disposed midway between the upper and lower faces of the pillow.

The pillow is substantially rectangular in plan view with rounded corners. In plan view as well as in end elevation and side elevation, the pillow has a peripherally continuous shell, but for purposes of convenience this shell will be defined by reference to an upper wall and a lower wall, and the intervening shell portion around the pillow edge, where the upper and lower walls are interconnected, will be referred to as the peripheral wall. In side elevation the upper and lower walls are preferably flat throughout the major portion of their length (Figure 3), and are slightly rounded at their ends to gradually merge into a peripheral wall; while in end elevation the pillow gradually tapers in decreasing thickness from an intermediate zone and to a slight degree toward the opposite sides of the pillow where the upper and lower walls are somewhat rounded to gradually merge into the peripheral wall. The peripheral wall is preferably vertical intermediate the rounded portions in order to permit a relatively thin shell or wall to retain the pillow in the desired shape while providing desired flexibility or "softness."

The upper section 4 comprises a shell 5 which is continuous throughout the upper wall of the pillow and the peripheral wall portion of the section extends to the said intermediate plane. The shell 5 preferably has a thickness of the order of 3/8". Formed as a unit integral with the shell 5 is a reticulated web designated in general as 6. This web is arranged so as to have a multiplicity of alternating cavities 7 and posts 8, of smaller diameter, extending in the direction generally normal to the upper and lower surfaces of the pillow so as to provide a vertically extending web system. I term the web 6 a reticulated web because the web in plan view is arranged in a netlike or reticulated pattern, the cavities 7 and posts 8, corresponding to the interstices. The cavities and posts throughout the major area of the pillow, such as a cavity 7 and post 8, are preferably cylindrical in shape and are arranged in a plurality of series, the cavities of respective series being in alignment with the posts, and alternate series being offset in a longitudinal direction so that the cavities of one series are spaced opposite the posts intervening between the cavities of the adjacent series, as will be clearly seen in Figure 1, where the larger diameter dotted lines designate the cavities, and the smaller diameter dotted lines designate the posts. The web portions between any two respectively contiguous cavities are relatively thin, as at zones such as 10, and the web portions between contiguous cavities and posts are relatively thick, as at zones such as 11, thus forming the junctures of the web portion 10, herein for convenience called the reticulated junctures of the web. It is especially noted that in the preferred embodiment with the disclosed arrangement of curvilinear cavities the reticulated web system has no sharp corners but is defined by gradual curves, thereby avoiding localized stresses. This web pattern provides a web thickness gradually increasing from a minimum thickness at the centers of zones 10 to a maximum thickness at the centers of zones 11.

The cavities are approximately 2" in diameter, and the posts are approximately 1" in diameter, and spaced apart at their diameters to provide a web thickness at zones 10 of the order of 3/8". Disposed in general around the central area defined by the cavities 7 is a series of deeper cavities such as 12, 13 and 14, to thereby provide desired resiliency while retaining sufficient structure to maintain the shape of the pillow. With the arrangement above described it will be noted that the cavities and posts are spaced apart proportionately in each longitudinally extending series and in intersecting diagonal directions. The cavities and posts of respectively contiguous longitudinal series are tangent to a common plane in the present embodiment, as will best be seen in Figure 2.

The lower section 4' is identical with the upper section 4, and comprises a shell 5', and a reticulated web designated generally as 6', defining or providing a multiplicity of cavities and posts such as 7' and 8', so as to cause the two systems of reticulated webs to be disposed symmetrically. The abutting inner faces of the shells 5 and 5' of the respective sections are united, as by latex adhesive, so as to provide a continuous shell casing, and the reticulated webs are adhesively secured together at the intermediate plane.

The superior functioning of the pillow is attributed to the fact that the posts 8, under compression, fill in the cavities 7, avoiding any line of demarcation as usually exists between a web and channel, and hence this results in a flexible structure utilizing a relatively small amount of material and providing a maximum shape-retaining structure. A pillow made in accordance with this invention is substantially as soft as a down pillow, while possessing the added advantages of immediately returning to its normal shape when pressure is removed. Likewise, a pillow in accordance with this invention is relatively light, is well ventilated and is readily cleaned by washing like a sponge in soapy water.

As will be obvious from the foregoing, the two shells 5 and 5' provide upper and lower walls respectively having peripheral margins which extend toward each other and meet at the intermediate plane to jointly close the space between the upper and lower walls at the peripheral edge of the pillow.

A pillow embodying the invention is preferably made of foamed or frothed rubber latex, which is commonly prepared either by whipping a compounded latex containing a foaming agent into a foam or stirring the compounded latex into a separately prepared foam, the mixture or compound then being molded and vulcanized in the desired shape. The pillow will have an infinite number of tiny intercommunicating cells which permit air circulation throughout the mass for ventilation, also to contribute to the "hysteresis" properties of the pillow. The two half sections are preferably cemented together along the abutted walls, and in the embodiment shown, the plane of cementation is the vertical medial longitudinal plane of the pillow. Each half section is alined or registered with the corresponding half section when the flat faces of the two half sections are cemented together, so that each post is adapted to be compressed in a cavity, thus providing the assembled pillow with a multiplicity of cylindrical cavities and posts, and affording an internal cushion structure of interconnected weblike walls of foam latex. It will also be clear that as the foam rubber of the pillow body is of intercommunicating open cell texture, compression and expansion of the pillow causes movements of ventilating currents not only through the cavities, but also through the webs and other walls of the foam rubber itself.

A pillow constructed in accordance with this invention may be used in various locations. It may be advantageously used with conventional items of seating equipment, such as automobile seats, easy chairs, overstuffed furniture, and the like, and when so used, gives the occupant additional support.

In accordance with the provisions of the patent statutes, I have herein described the principle and operation of my invention, together with drawings which I now consider to represent the best embodiments thereof, but I desire to have it understood that the apparatus shown is only illustrative and that the invention can be carried out by other means. Also, while it is designed to use the various features and elements in the combination and relations described, some of these may be altered and others omitted without interfering with the more general results outlined, and the invention extends to such use.

In view of the foregoing description taken in conjunction with the accompanying drawings, it is believed that a clear understanding of the construction, operation and advantages of the invention will be quite apparent to those skilled in

this art. A more detailed description is accordingly deemed unnecessary.

It is to be understood, however, that even though there is herein shown and described a preferred embodiment of the invention, the same is susceptible to certain changes fully comprehended by the spirit of the invention, as herein described, and the scope of the appended claim.

Having thus described my invention with particularity with reference to its presently preferred form, it will be obvious to those skilled in the art, after understanding my invention, that other changes and modifications may be made therein without departing from the spirit and scope of my invention, and I aim in the appended claims to cover such changes and modifications as are within the scope of the invention.

What I claim is:

1. A latex foam or the like sponge rubber pillow, comprising two superimposed sections of rubber cushion, each section having cavities, with posts in certain of the cavities in one section being staggered with relation to the posts in certain of the cavities in the other section.

2. A latex foam or the like sponge rubber pillow, comprising two superimposed sections of rubber cushion secured together, each of said sections having rows of alternate cavities and posts, the cavities and posts in one row being staggered with respect to the cavities and posts in the adjacent row, said sections being arranged so that the posts of one of said sections are disposed opposite the cavities of the other section.

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