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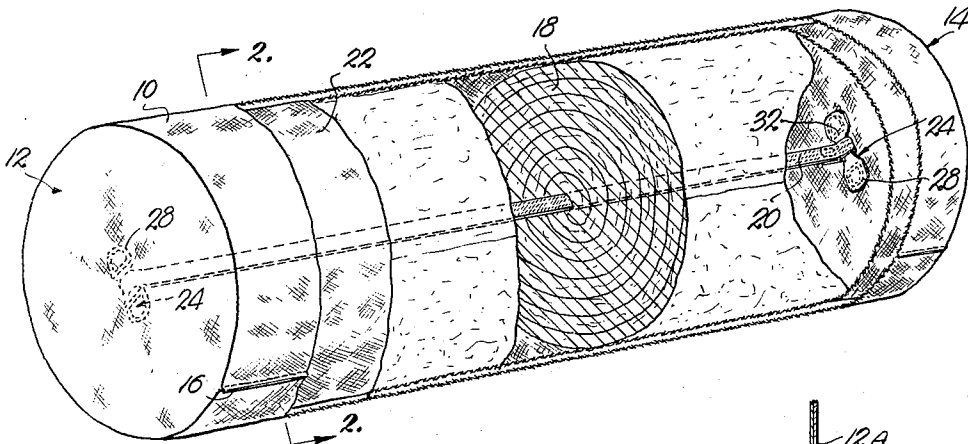


Fig. 1.

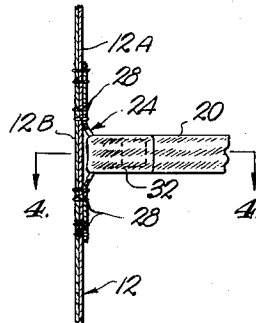


Fig. 3.

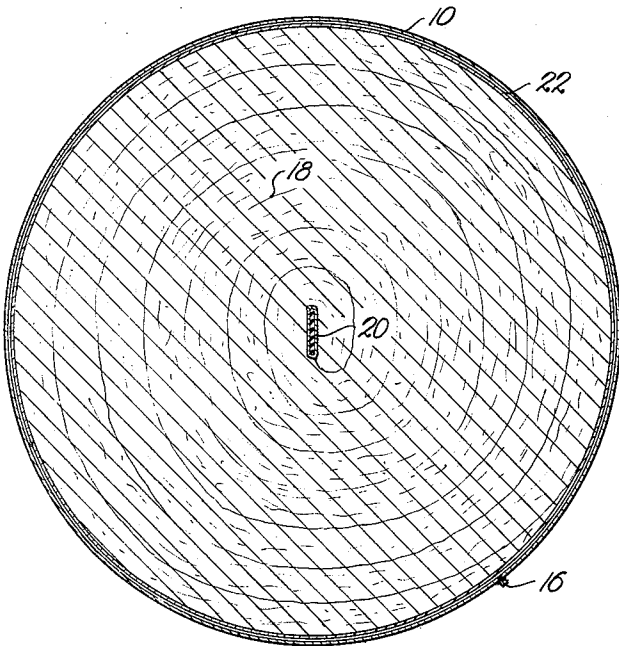


Fig. 2.

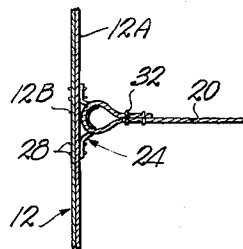


Fig. 4.

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This invention relates to improvements in pillows and, more specifically, to a pillow for use in supporting the nape of the neck between the atlas and the seventh cervical vertebra.

It is the primary object of this invention to provide a pillow that properly supports the muscles of the neck so that they are neither extended nor flexed when a person is reposed.

It is another object of this invention to provide a pillow for engaging the nape of the neck while reposed to hold the spine in the same position relative to the head and shoulders as when standing erect with proper posture.

It is a further object of this invention to provide a pillow for placement between the atlas and the seventh cervical vertebra that will prevent the muscular ailments contracted during sleep by persons subject to spinal or other back ailments.

Other objects will become apparent as the detailed description proceeds.

In the drawing:

FIGURE 1 is a perspective view of the present invention with parts broken away to show the interior construction thereof;

FIG. 2 is a transverse, cross-sectional view taken along line 2—2 of FIG. 1;

FIG. 3 is a detailed view showing the attachment of one end of the elastic strip to an end piece; and

FIG. 4 is a view taken along line 4—4 of FIG. 3.

Referring to FIG. 1, it may be seen that the exterior of the pillow comprises an outer cylindrical casing 10 and a pair of end pieces 12 and 14 forming the pillow into a closed cylindrical configuration. End pieces 12 and 14 are of double layer construction. FIG. 3 shows end piece 12 comprising an inner layer 12A and an outer layer 12B. The inner layers of the end pieces may consist of sailcloth or canvas fabric. The outer casing 10 and the outer layers of the end pieces may consist of broadcloth, percale, or muslin, the end pieces being made separate from the outer casing and stitched thereto along their outer peripheries. The outer casing may be formed by rolling a flat piece of cloth into a cylindrical shape and stitching the longitudinal edges together as shown at 16.

The interior of the pillow comprises a filler 18 coiled about an elastic strip 20. The elastic strip is disposed along the axis of the cylinder and attached to the end pieces 12 and 14. An inner casing 22 of gauze or cheesecloth may be used to contain the filler 18 while the filler is being inserted into the outer casing prior to stitching the casing together at 16.

FIG. 3 illustrates a suitable manner of attaching the ends of the elastic strip 20 to the corresponding end pieces. A loop 24 consisting of a small strip of cloth may be stitched to the end piece as shown at 28. It may be noted that outer layer 12B serves to reinforce the end piece at stitches 28. FIG. 4 shows the end of the elastic strip 20 looped through the loop 24 and stitched as at 32 to secure the strip to the loop.

The filler 18 is constructed from an initially flat mat of polyester fibers composed of a copolymer of methyl terephthalate and ethylene glycol, an example being "Dacron" in fiberfill form, manufactured by E. I. du Pont de Nemours & Co., Inc., of Wilmington, Delaware. This material is composed of very fine, long, hair-like fibers

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disposed at random and loosely interspersed to form an aeriferous mat. A mat of this material weighing eight ounces per lineal yard for a width of 30 inches may be utilized. Beginning with a mat 30 inches in length and 20 inches in width, the length of the mat is then formed into a roll around the elastic strip 20. A coil of material is thus obtained that is 20 inches in length and approximately 6 inches in diameter.

For a coil having a length of 20 inches it is necessary that the distance between end pieces 12 and 14 be 17½ inches for optimum results. This produces a 2½ inch longitudinal compression of the filler 18 when it is inserted into the outer casing. The elastic strip 20 then serves to further maintain the filler in longitudinal compression to prevent the ends 12 and 14 from bulging through usage and to maintain the filler at the desired density. The elastic strip, therefore, should be attached to the loops 24 under slight attenuation.

Depending on the composition of the filler, the diameter of the pillow is critical if optimum results are to be obtained. When the filler material as above specified is used it has been found that a diameter of approximately 6 inches insures that when the pillow is compressed under the weight of the neck, the compressed thickness thereof will be sufficient to support the neck while allowing the shoulders and the back of the head to lie against the mattress of the bed. This maintains the spine in the same position relative to the head and shoulders as when a person is standing erect with proper posture. The filler conforms to the nape of the neck and supports the muscles thereof so that they are neither extended nor flexed. A properly positioned pillow of the present invention supports the neck between the atlas and the seventh cervical vertebra.

Although an uncompressed diameter of 6 inches has been found to be an average figure suitable for most individuals, in general a range of suitable pillow diameters is from 5 to 7 inches. It is interesting to note that these dimensions apply equally to children as well as to adults. It should be understood that if fillers other than the polyester fibers above described are to be utilized, the diameter of the pillow may have to be altered accordingly. The importance of this diameter relates to its compressed thickness rather than its uncompressed thickness as the compressed thickness must be such that the neck will be properly supported.

The foregoing is valid within certain limits. The uncompressed diameter of the pillow must be sufficient in length to cover the nape of the neck and thus extend from approximately the atlas to the seventh cervical vertebra. Furthermore, the texture of the filler material must be such that it will conform to the configuration of the nape. It is for this reason that many conventional pillow stuffing materials are wholly unsuitable for the present invention.

With regard to the proper length of the pillow, it is only necessary that the length be sufficient to afford adequate comfort. The 17½ inch length set forth above has been found adequate for this purpose. The ends of the pillow on each side of the neck must extend laterally outwardly therefrom a distance sufficient to allow the compressed center portion of the pillow to assume the configuration of the nape and allow the sleeping individual sufficient lateral freedom of movement to assure a comfortable rest.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

1. A pillow for supporting the cervical vertebrae comprising:
 - a generally cylindrical, elongated filler in said case comprising an initially flat, fibrous mat of poly-

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ester material coiled about the longitudinal axis of the filler, the fibers of said material being disposed at random within said mat and being loosely interspersed rendering the filler aeriferous, said case being configured to complementally receive said filler and being provided with a pair of opposed end pieces and means coupled with said end pieces and maintaining the latter spaced apart a lesser distance than the initial length of said filler prior to insertion into the case, whereby to place said filler in longitudinal compression, the difference between said distance and said initial length being sufficient to substantially increase the transverse resilience of the filler and prevent lateral displacement of said material from beneath the neck when reposing.

2. The invention of claim 1, wherein said distance is equal to approximately $\frac{7}{8}$ of said initial length.
3. The invention of claim 1, wherein the weight of

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said material forming said filler is between 70 and 115 grams per foot of said initial length of the filler.

4. The invention of claim 1, wherein the weight of said material forming said filler equals approximately 90 grams per foot of said initial length of the filler.

5. The invention of claim 4, wherein said distance is equal to approximately $\frac{7}{8}$ of said initial length.

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