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3,462,779

CUSHION

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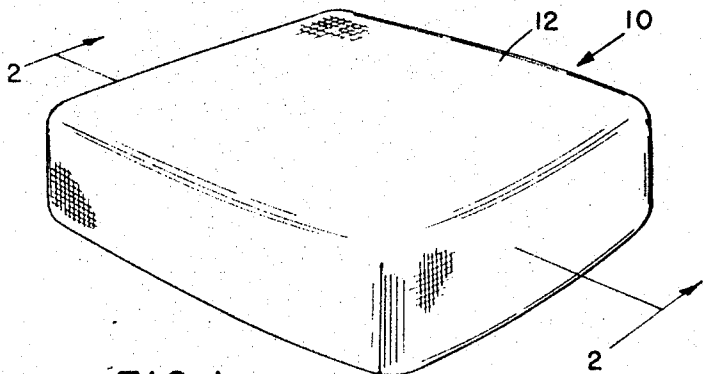


FIG. 1

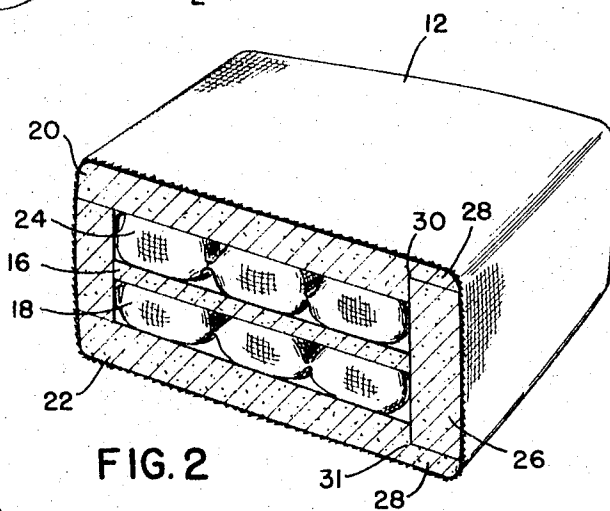


FIG. 2

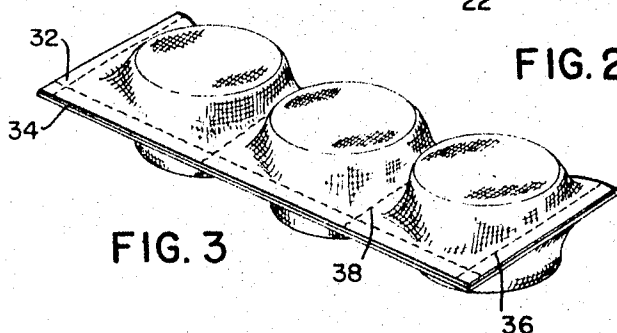


FIG. 3

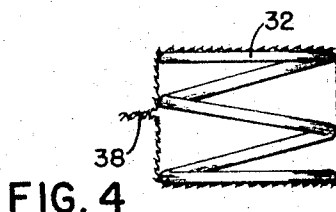


FIG. 4

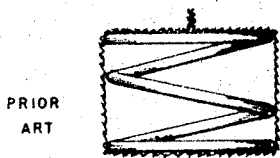


FIG. 6



FIG. 7

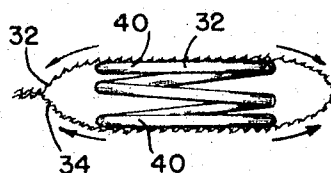


FIG. 5

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1

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CUSHION

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9 Claims

ABSTRACT OF THE DISCLOSURE

The present invention relates to cushion articles and more particularly to a cushion having a plurality of isolated spring layers, each layer containing a number of individual coils which are separately encapsulated to prevent wear and provide a dual cushioning effect.

BACKGROUND, BRIEF SUMMARY AND OBJECTIVES OF THE INVENTION

Cushion construction has, for the most part, been devoted to the manufacture of encapsulated coil springs within a padded body structure, the springs being linked together in strategic locations along individual coils to provide the requisite firmness and cushioning effect. The accepted practice is to form a square body by use of individual coils all linked together and then encapsulate the entire spring body with a resilient material. While the results obtained from such cushions have been generally accepted by the cushion and furniture industry, there is a decided need for a cushion construction that will eliminate the internal wear created by the continuous flexing of the contained springs and provide an even, consistent and responsive cushioning effect.

The present invention is directed to a cushion construction which will afford a double flexing action by virtue of the provision of more than one planar layer of coil springs, the layers being separated by a layer of resilient material so that an isolated flexing effect is achieved within each layer. Additionally, the individual coil springs maintained in a planar relationship within each layer are encapsulated by an additional fabric in a manner which will eliminate wear and tear of that fabric normally caused when the material is pinched between the individual coils of the springs upon the flexing of the spring member. It has been found advantageous to sandwich a first and second planar spring layer which is separated by a resilient layer of deformable material between other resilient members such as foam rubber segments and then surround the entire cushion body with a decorative covering of flexible material in a conventional manner. There is achieved by this unique construction a dual flexing action by virtue of the incorporation of more than one layer of coil springs thus providing high resiliency, longer life, consistent action and greater comfort.

Coil springs are normally surrounded individually by a segment of fabric and which is then seamed across either the upper or lower portion of the spring so that upon flexing, the fabric folds or creases between the individual coils and thus is pinched and becomes worn where the individual coils of a single coil spring contact adjacent coils. According to the present invention, the individual coils are surrounded and seamed at the side of the coils in a plane which is perpendicular to the longitudinal axis of the coils so that when the coils are flexed, the material has a tendency to extend away from the individual coils and is not held therebetween in the manner previously described so that no noticeable wear is created.

With the foregoing in mind, it is, therefore, an object of the present invention to provide a cushion having a plurality of planar spring layers which provides a dual flexing effect for the assembled cushion.

2

Another object of the present invention is to provide a cushion of the type described which has a resilient separator positioned between the planar spring layers, and the separated layers are then encapsulated by additional resilient members to form a cushion body.

Yet another object of the present invention is to provide a cushion of the type described wherein the individual springs of each planar spring layer are wrapped and separated in a manner so that the wrapping material is not destroyed by continuous flexing of the individual coils of each spring.

These and other objects of the present invention will become more apparent when taken in light of the following detailed description and accompanying drawings wherein like characters of reference designate like parts.

FIGURE DESCRIPTION

FIG. 1 is a perspective view of a completely assembled cushion embodying the present invention.

FIG. 2 is a fragmentary, perspective view of the cushion shown in FIG. 1 taken along the line 2—2 illustrating the first and second spring layers which are separated by a resilient member, the layers being encapsulated by additional resilient members which are then, in turn, surrounded by the outer material covering.

FIG. 3 is a perspective view of a number of individually wrapped coil springs contained within one of the two planar spring layers showing the isolation of each spring from adjacent springs by strategic seaming of the material.

FIG. 4 is a side elevational sectional view of an encapsulated single coil spring isolated from an adjacent spring such as illustrated in FIG. 3, the coil spring being in an unflexed position.

FIG. 5 is a side elevational sectional view of the spring shown in FIG. 4 which has been flexed, the drawing particularly illustrating the behavior of the surrounding fabric upon flexing of the spring as it extends outwardly and away from the individual coils of that spring.

FIG. 6 is a side elevational, sectional view of an encapsulated single coil spring surrounded in a conventional manner, the spring being in an unflexed condition.

FIG. 7 is a side elevational sectional view of the spring shown in FIG. 6, the spring being in a flexed condition and the surrounding fabric being drawn inwardly between the individual coils of that spring.

DETAILED DESCRIPTION

Referring now to the drawings and particularly to FIG. 1, there is shown a cushion generally designated 10 in completed form, the body of which is covered by a decorative flexible material 12 suitable for use on couches, chairs and other like articles of furniture. The internal construction of cushion 10 is best shown in FIG. 2 wherein a first planar spring layer 14 is separated by a resilient layer of deformable material 16 representative of which might be foam rubber, polyurethane, styrofoam and the like. A second planar spring layer 18 is positioned beneath material layer 16 and is thus isolated from the first layer 14 to form two separate internal spring constructions for the cushion 10. While the preferred embodiment contains only two spring layers, it will be readily apparent that other layers could be provided in a like manner to give additional resiliency to a desired cushion.

The separated spring layers are surrounded by additional resilient materials, specifically a top resilient member 20, a bottom resilient member 22, and front and rear resilient members 24 and 26 which connect members 20 and 22 in a manner to encapsulate the separated spring layers completely. Since the front portion of the cushion is usually provided with a beveled edge 28, it has been found desirable to include the front resilient member between the top and bottom portions in the manner illus-

trated in FIG. 2 where the top and bottom portions are notched 30 and 31 to receive front member 26 in a manner to prevent easy displacement of that member upon deformation of the cushion.

The body portion of the cushion is then bound within the flexible material 12 which is usually decorative in nature so that the cushion might be used with a conventional article of furniture. The flexible layer of material 12 is tightly fitted about the body portion of the cushion to hold all components in a generally fixed relationship each with the other subject to the temporary deformation of the cushion when used.

Each of the spring layers is formed according to the section shown in FIG. 3 whereby individual coil springs 32 are positioned in a side-by-side relationship to form a generally square or rectangularly shaped member. Segments 32 and 34 of a durable spring covering material are then placed above and below the coil springs in the manner shown and subsequently seamed along the edges 36 of the material and between 38 the individual coil springs so that each spring is effectively isolated or separated from its adjacent spring. Encapsulating the individual springs in the manner described provides an effective means for extending the life of the internal portion of the cushion as will be readily apparent from an explanation of FIGS. 4 and 5 of the drawings. The spring, in an unflexed condition, which has been encapsulated in the manner described and shown in FIG. 3, is isolated from its adjacent springs, by the seam 38 which will lie along the side of that spring. When spring 32 is flexed or compressed, fabric segments 32 and 34 have a tendency to flatten outwardly away from the individual coils 40 of spring 32 and are not pinched therebetween as is the case in conventionally wrapped springs of the prior art which are illustrated in FIGS. 6 and 7. This pinching effect has a tendency to wear the material encapsulating the individual springs and eventually causes the adjacent springs to contact one another along their metal surfaces which will result in squeaks and deterioration of the internal portion of the cushion. When such encapsulating material becomes destroyed, the cushion must be rebuilt by tearing it apart and rewrapping the individual coil springs.

Thus it can be seen that the isolation of the individual coil spring members 32 each from the other by means of seams 36 and 38 along their sides, these seams all lying in a plane essentially perpendicular to the longitudinal axis of each of the springs, will avoid noticeable wear of the fabric segments 32 and 34 because the fabric has a tendency to extend outwardly and away from the springs when they are flexed or compressed. The particular manner of spring wrapping provides extremely long life for the cushion since there is no necessary for rebuilding the cushion after a short period of time as has been the case in conventionally formed cushion articles.

The provision of a plurality of planar spring layers 14 and 18 offers a decided advantage in that a dual cushioning effect is achieved since these layers are separated by an additional resilient member 16 in the manner shown. The dual cushioning effect has a decided advantage over a single layer of springs of a height essentially equal to the height of both layers shown in FIG. 2, since the shorter springs have a longer life than a single spring of the length equal to the length of both springs forming the effective height of the spring layers. The longer spring used in conventional construction has a tendency to become weak because of its length after continued compression or flexing, and thus the effective life of the cushion is extended when the longer spring is replaced by two coils, one in each spring layer.

While there has been described a particular embodiment of a cushion having a plurality of planar spring layers, it will be obvious that many modifications and variations may be made in the construction of this article and in particular to the spring design, the planar

spring layers, and the resilient covering material as well as other phases of the present inventive concept without departing from the real spirit and purpose of this invention, and such modifications are contemplated.

I claim:

1. A unitary cushion comprising: a first planar spring layer having a plurality of springs substantially contiguous to each other; a second planar spring layer having a plurality of springs substantially contiguous to each other parallel to said first layer; resilient means including a continuous planar surface separating said spring layers; resilient means surrounding said layers and said resilient planar separating means; and a covering of flexible material surrounding said spring layers and said resilient surrounding means.

2. A cushion as claimed in claim 1, said first and second planar spring layers each including a plurality of coil springs positioned in a side-by-side relationship.

3. A cushion as claimed in claim 1, said separating means comprising a resilient layer of deformable material adapted to induce an individual cushioning effect in each of said spring layers.

4. A cushion as claimed in claim 1, said resilient means including a top and bottom resilient member, a rear and a front resilient member connecting said top and bottom members, said members surrounding said layers and said separating means to form an interior for the cushion.

5. A cushion as claimed in claim 1, said first and second planar spring layers each including a plurality of coil springs positioned in a side-by-side relationship, said separating means comprising a resilient layer of deformable material adapted to induce an individual cushioning effect in each of said spring layers, said resilient means including a top and bottom resilient member, a rear and a front resilient member connecting said top and bottom members, said members surrounding said layers and said separating means to form an interior for the cushion.

6. A cushion as claimed in claim 2, said plurality of coil springs in each of said layers bound within a covering means in a manner so that each of said springs is isolated from all other springs.

7. A cushion as claimed in claim 5, said plurality of coil springs in each of said layers bound within a covering means in a manner so that each of said springs is isolated from all other springs.

8. A cushion as claimed in claim 7, said covering means having an upper segment and a lower segment secured together along a plane perpendicular to the longitudinal axis of each of said springs, said material adapted to extend outwardly from said springs upon the flexing of said springs to avoid contact with the individual coils of said springs.

9. A cushion as claimed in claim 8, said plurality of coil springs in each of said layers bound within a covering means in a manner so that each of said springs is isolated from all other springs, said covering means having an upper segment and lower segment seamed together along a plane perpendicular to the longitudinal axis of each of said springs, said material adapted to extend outwardly from said springs upon the flexing of said springs to avoid contact with the individual coils of said springs.

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