

United States Patent

[11] 3,613,673

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2,920,619 1/1960 McMillan et al..... 128/33
3,092,100 6/1963 Oetinger..... 128/33
3,048,167 8/1962 Kamp..... 128/33

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[54] VIBRATING THERAPEUTIC CUSHION 7 Claims, 3 Drawing Figs.

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128/36
[51] Int. Cl..... A61h 1/00
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24.2, 33, 36

[56] References Cited

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3,027,892 4/1962 Searl 128/33

ABSTRACT: A vibrating therapeutic cushion having vibrating means therein connected within a frame of the cushion by resilient tension members. The vibrating unit supported by the tension member includes a resilient base pad to which is secured a vibrating motor. Soft resilient padding is disposed between the motor and the base pad. The vibrating unit is applied independently of the upholstery springs and by its structure produces a substantially uniform vibration throughout the entire cushion.

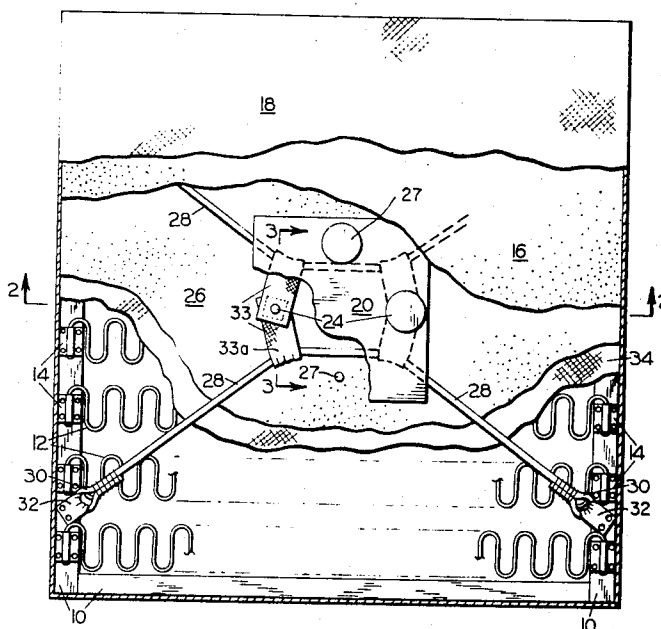


FIG. 1

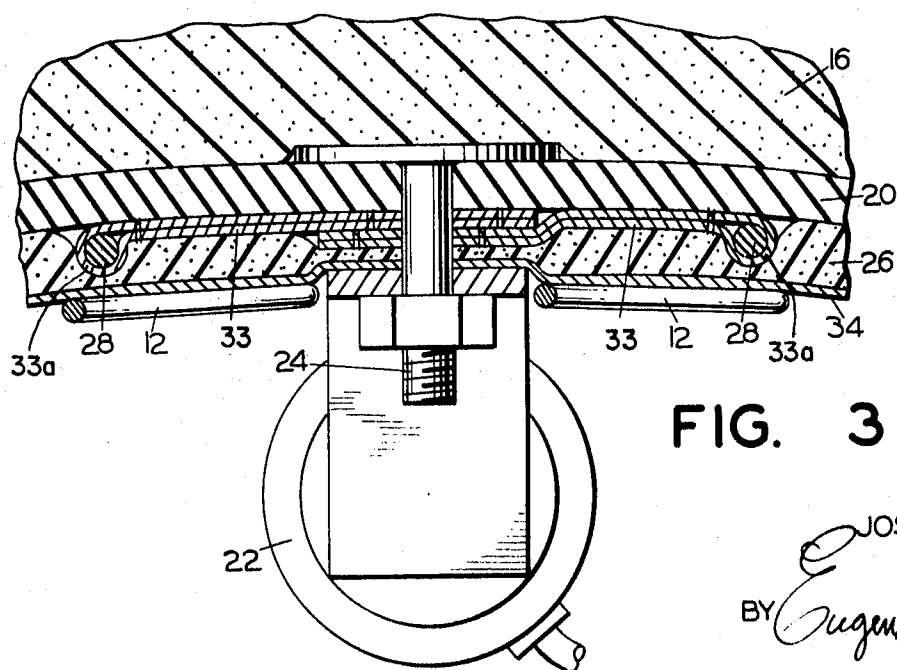
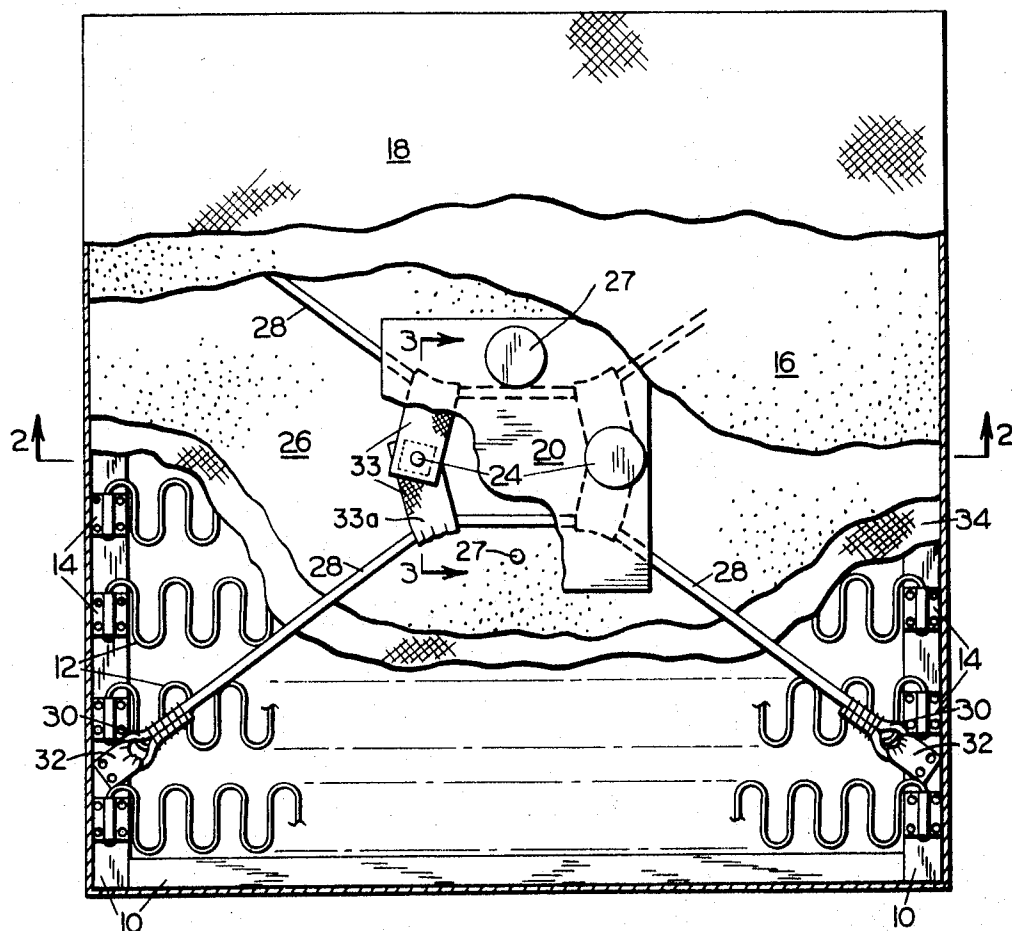
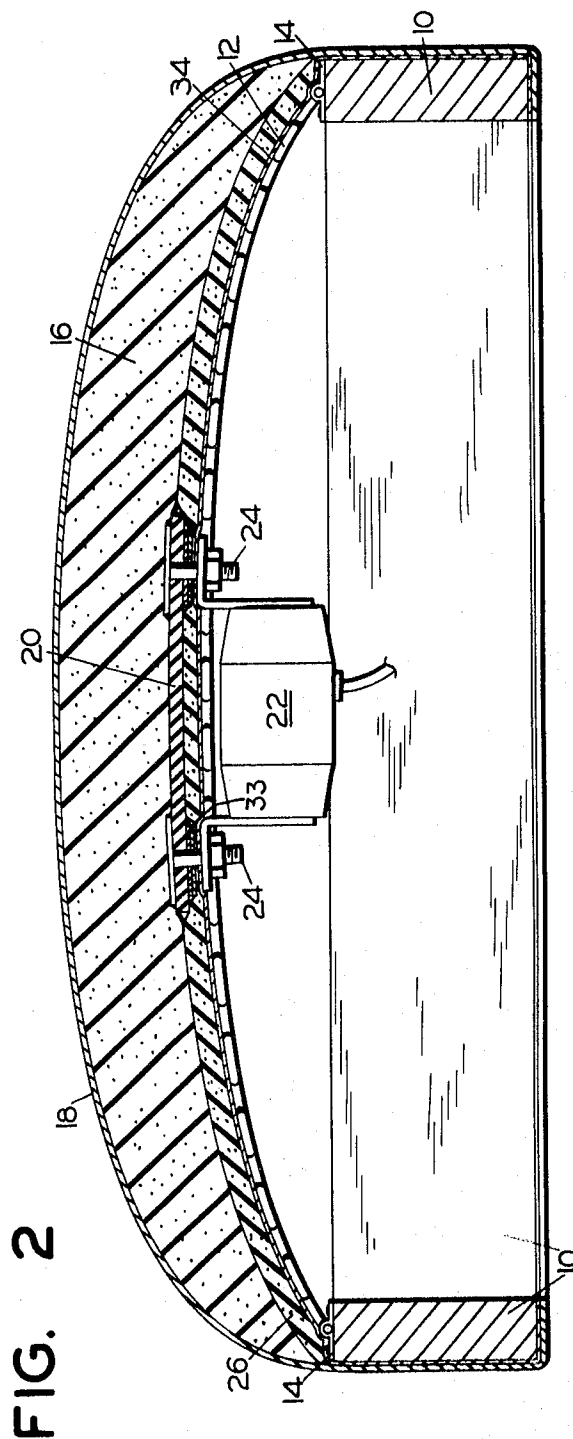


FIG. 3

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VIBRATING THERAPEUTIC CUSHION

BACKGROUND OF THE INVENTION

This invention relates to new and useful improvements in vibrating cushions of the type adapted to be embodied in furniture such as chairs, sofas, and the like.

Vibrating cushions forming a part of furniture heretofore employed have some disadvantages one of which is that they do not produce uniform vibrating action throughout the entire cushion and furthermore since such action is not uniform in the cushion it cannot effectively produce a mild or gentle treatment as sometimes is desired. A second disadvantage is that the vibrating unit when installed within the chair cushion takes away some of the comfort which ordinarily would be present in chairs without the vibrating unit. The disadvantages mentioned above are caused by the use of rigid mounting plates for the vibrating unit such as in U.S. Pat. Nos. 3,092,100 and 2,822,804. It has been found that it is difficult to provide a uniform and mild movement if necessary mounting means for the motor is of rigid material such as plate material or expanded metal. Other prior devices such as shown in U.S. Pat. No. 2,852,020 utilize end mounted vibrating units which make it almost impossible to apply a vibrating force uniformly through the entire length of the cushion.

SUMMARY OF THE INVENTION

According to the present invention and forming an important objective thereof there is provided a novel combination of structure wherein a vibrating unit includes a resilient mounting plate for a vibrating motor and spring connection of the unit by elongated resilient tension members connected between the unit and the frame of the cushion, and further to provide in combination therewith a layer of soft resilient material between the motor and the resilient base pad, with the layer of soft resilient material extending over the entire area of the cushion. Such structure transfers vibrating forces uniformly to all portions of the cushion.

Another object is to provide a vibrating cushion of the type described wherein the vibrating unit is mounted within the frame of the cushion without connection to any of the upholstery springs wherein vibratory motion from the unit does not act solely on any one spring but rather is arranged to operate on the entire unit for uniform vibration.

Still another object is to provide a vibrating cushion of the type described wherein the vibrating motor is readily accessible for maintenance or replacement.

Yet another object is to provide a vibrating cushion of the type described wherein the vibrating unit therefore is simple in construction, economical to manufacture, and is readily installed.

The invention will be better understood and additional objects and advantages will become apparent from the following description which illustrates a preferred form of the device.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a front view of the present cushion with parts thereof broken away;

FIG. 2 is an enlarged cross-sectional view of the cushion taken on the line 2—2 of FIG. 1; and

FIG. 3 is an enlarged fragmentary sectional view taken on the line 3—3 of FIG. 1.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring in particular to the drawings, the numeral 10 designates a frame which for the purpose of illustrating the invention may form a part of an article of furniture. Such frame may comprise a back rest, a seat, a leg rest, or other part in which vibration is to be imparted.

The upholstery portion of a cushion conventionally comprises backing springs 12 which may be sinusoidal in construction as shown. These springs are disposed in parallel relation with each other and are secured to opposite sides of the frame by fasteners 14. They are generally bowed forwardly as shown in FIG. 2. The cushion then has an outer or front layer 16 of soft resilient material such as foam rubber, and such layer of foam rubber is covered by upholstery material 18.

According to the present invention, a base pad 20 of smaller perimeter than the frame has a vibrating motor 22 secured thereto by a pair of studs 24. Also, a layer 26 of soft resilient material such as foam rubber is disposed between the base pad 20 and the motor and extends the full area of the frame, such layer being abutted against the outer layer of foam rubber 16. Base pad 20 is flexible for conforming to different shapes and for this purpose it may be constructed of rubber or a resilient plastic but importantly is sufficiently resilient so that it will assume any curvature that the outer cushion 16 will assume in order that a person using the cushion will not feel said pad through the thickened layer 16.

Base pad 20 is provided with a second set of studs 27 which similar to studs 24 comprise motor mounting studs. The studs 27 are arranged 90° from the studs 24 so that if desired the motor can be mounted at right angles to the position in which it is shown when mounted on the studs 24, such being for a purpose to be described hereinafter.

The base pad 20 and attached motor is connected to the frame 10 by resilient tension members 28 which may be in the form of rubber cord, tension springs, or the like. Rubber cord has been found to operate very satisfactorily, and for purposes of supporting the pad 20 and motor 22 a pair of the cords are used with each cord having its ends attached to opposite sides of the frame 10 adjacent to the corners. For attachment of the cord to the frame and to the vibrating unit, such cord has end loops 30 engageable in loop ties 32 secured to the frame. For attachment of the cord to the base pad 20, flexible ties 33 are secured to the studs 24 and have loop portions 33a for receiving the tension members 28. Preferably, the ties 33 are connected on the studs 24 between the base pad 20 and the layer 26 of resilient material or in other words on the back side of the base pad 20.

By the construction just described the vibrating unit is supported primarily from the tension members 28. These tension members have sufficient strength to support the motor and its mounting plate rather firmly but of course at the same time allow it to vibrate upon operation thereof. Although the layer 16 of foam rubber is secured to the vibrating unit, such layer is relieved of any support for the vibrating unit by suitable tensioned connection of the vibrating unit by the cords 28, and no damage will thus be done to such layer of foam rubber.

In the general arrangement of the parts, it will be apparent that the base pad 20 is in front of the upholstery springs 12 and will be embedded somewhat in the front layer of foam rubber 16. The back layer of foam rubber 26 lies against the thick layer of foam rubber and the overall curvature will be maintained by the springs 12. A layer 34 of burlap is preferably provided on the back side of foam rubber layer 26 between such layer and the springs 12. As best apparent in FIG. 3 the motor 22 is disposed between a pair of such rows in parallel relation thereto, and no direct connection between the motor and the springs is present. The motor and base pad 20, due to their connection to the resilient tension members 28 and also due to a disconnected relation with the springs and to the particular arrangement of resilient base pad and layer 26 of foam rubber, produce a uniform vibration throughout the entire area of the cushion. Furthermore, since the vibrating unit is embedded in foam rubber and since no mechanical connection is made with springs 12, a gentle vibration occurs throughout the entire cushion.

In the type of motor described, the eccentric force of the motor is at right angles to its longitudinal direction, whereby as viewed in FIG. 2 such eccentric force is also at right angles to the longitudinal direction of springs 12. It may be desired

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that the eccentric force be applied in the longitudinal direction of the springs 12, and for this purpose the motor is mounted on the pair of studs 27. In such position of the motor it will be necessary that it span one of the rows of springs. Similar to its other mounting, however, it is not secured to the springs. A gentle vibration is still assured although the location of the vibration may be more centralized since the eccentric force is resisted more when operated longitudinally of the springs.

It is to be understood that the form of my invention herein shown and described is to be taken as a preferred example of the same and that various changes in the shape, size and arrangement of parts may be resorted to without departing from the spirit of my invention or the scope of the subjoined claims.

Having thus described my invention, I claim:

1. A massage cushion comprising

a. a hollow frame,

b. resilient support means secured across said frame to provide cushioned support for a person engaged with the cushion,

c. flexible base means supported by said resilient support means but being disconnected therefrom,

d. resilient tension members secured to said base means and to said frame to hold the said base means in the frame in said supported relation by said resilient support means,

e. and a vibrating motor secured to said flexible base means arranged to transmit vibrations to said resilient support means by said supported but disconnected relation therewith.

2. The massage cushion of claim 1 wherein

a. said resilient means comprises springs having elongated spring elements secured to said frame in parallel spaced relation,

b. said motor being disposed between a pair of adjacent

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spring elements out of engagement therewith.

3. The massage cushion of claim 1 including

a. second resilient means between said base means and said motor,

b. and fastening means securing said base means, said second resilient means, and said motor together.

4. The massage cushion on of claim 1 wherein said resilient tension members are secured at one end to said frame and to their other end to said fastening means.

5. The massage cushion of claim 1 including auxiliary mounting means on said base means for said motor arranged for changing the mounted position of said motor on said base means.

6. The massage cushion of claim 1 wherein

a. said flexible base means is smaller than said hollow frame,

b. said massage including second resilient means comprising a cushion layer extending the full area of the frame and disposed between said base means and said motor.

7. The massage cushion of claim 1 wherein

a. said resilient support means includes springs,

b. said massage cushion including second resilient means between said flexible base means and said resilient support means,

c. third resilient means disposed adjacent to said flexible base means on the side opposite from said second resilient means,

d. fastening means securing said base means, said second resilient means, and said motor together,

e. said springs comprising elongated spring elements secured to said frame in parallel spaced relation,

f. said motor being disposed between a pair of adjacent spring elements out of engagement therewith.

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