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Shih

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(54) **ELECTRIC MASSAGE BED**

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A61H 1/00 (2006.01)

(52) **U.S. Cl.**
USPC **5/109; 5/933; 601/59**

(58) **Field of Classification Search**
USPC **5/915, 933, 108, 109; 601/49, 58-60**
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

2,719,769	A *	10/1955	Murphy	5/618
6,006,379	A *	12/1999	Hensley	5/618
6,499,161	B1 *	12/2002	Godette	5/618
6,684,423	B2 *	2/2004	Godette	5/600
7,039,970	B1 *	5/2006	Long	5/600
7,465,280	B2 *	12/2008	Rawls-Meehan	601/56
8,146,188	B2 *	4/2012	Hibler	5/613

* cited by examiner

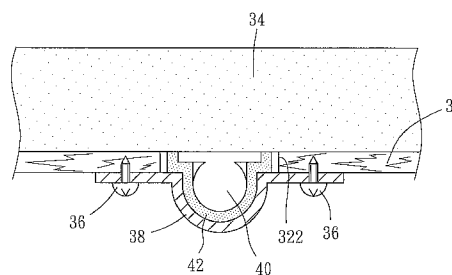
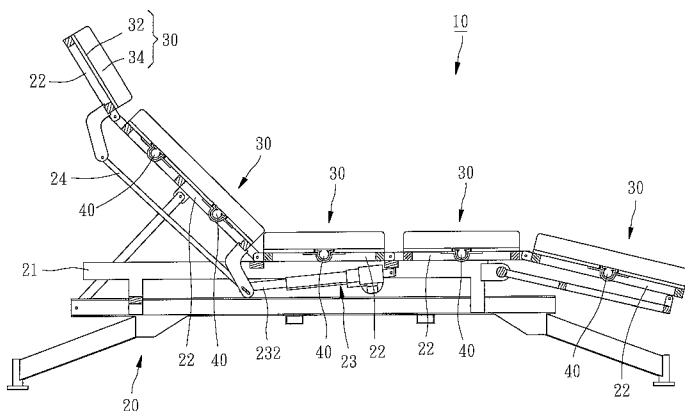
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(57) **ABSTRACT**

An electric massage bed includes a bed frame having a plurality of support brackets, a plurality of mattress sets each having a retaining plate mounted on one of the support brackets of the bed frame and a mattress supported by the retaining plate, and a vibrating motor mounted on a bottom side of the retaining plate of one of the mattress sets. When the vibration generated from the vibrating motor is transmitted to the associated mattress of the mattress set that is equipped with the vibrating motor, the unexpected vibration won't occur in the other mattress sets because the mattress sets are spaced from each other, thereby enhancing the comfort of a user lying down on the mattresses.

3 Claims, 2 Drawing Sheets



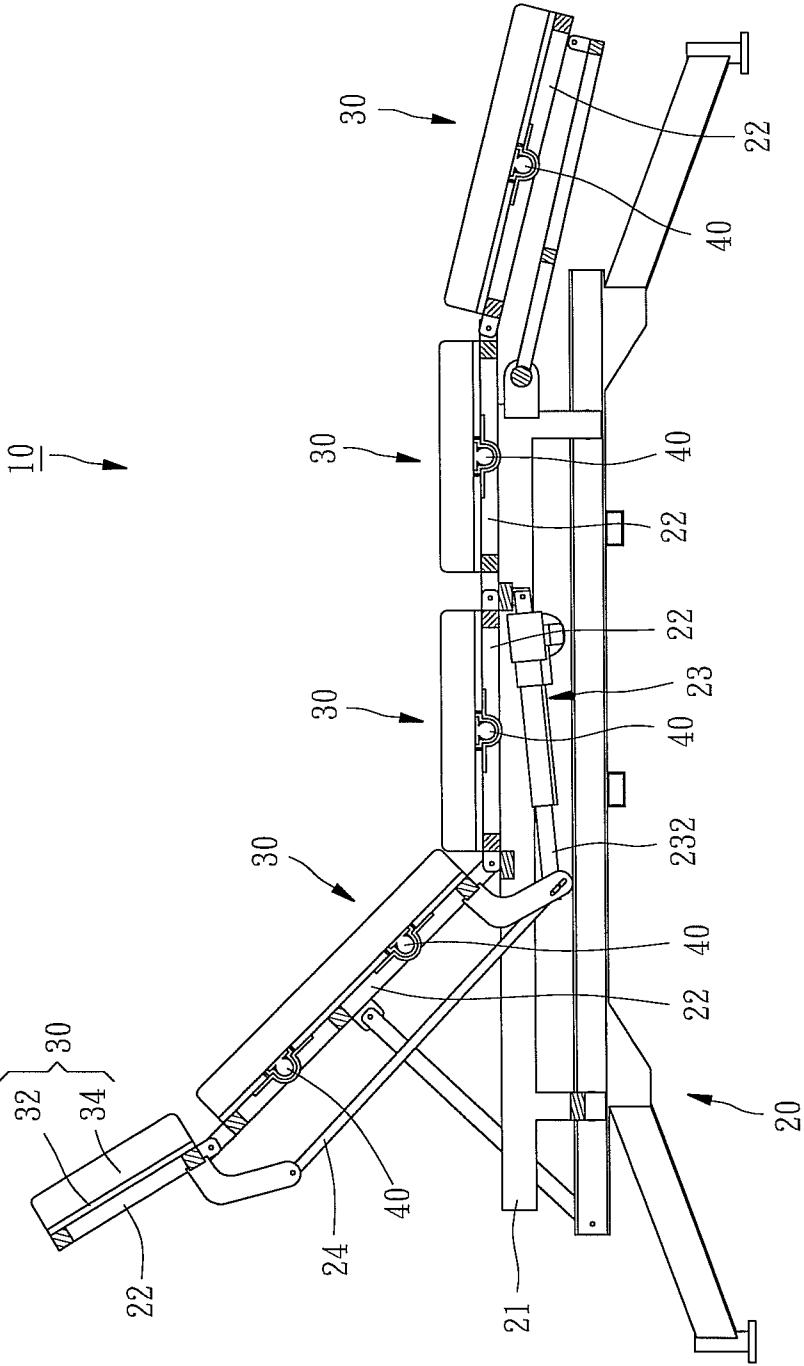


FIG. 1

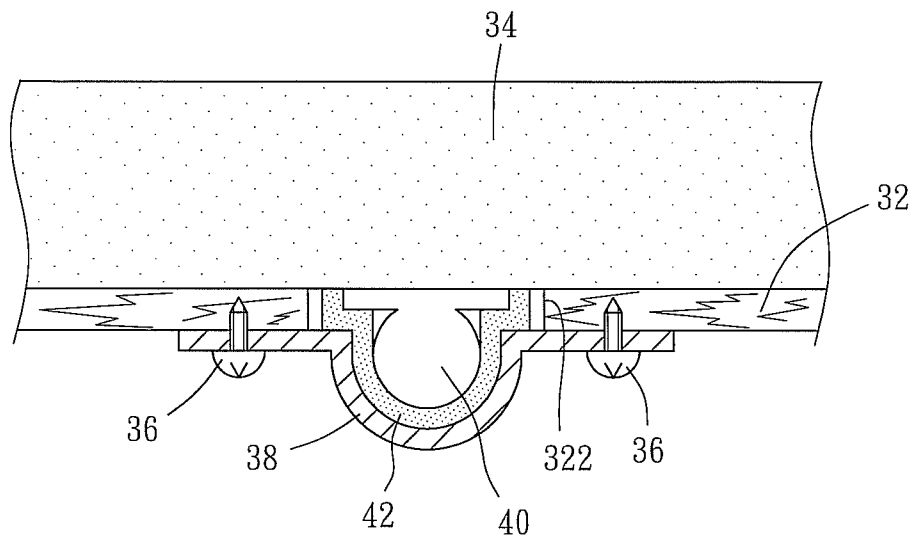


FIG. 2

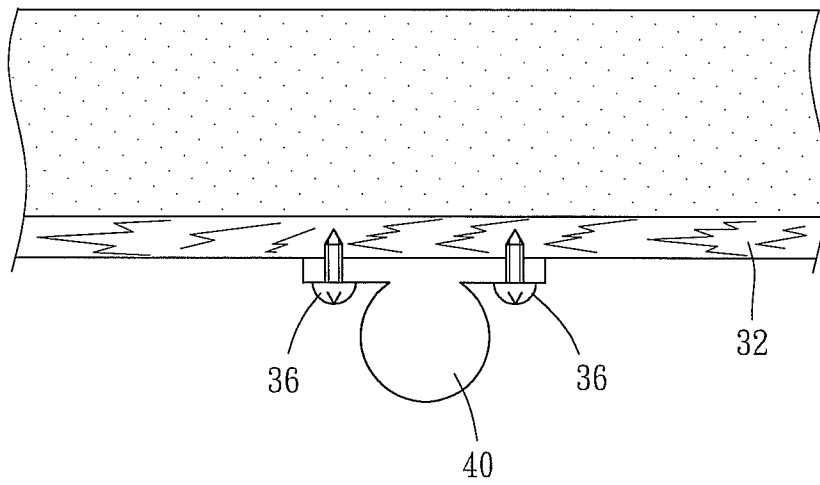


FIG. 3

ELECTRIC MASSAGE BED

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates generally to an electric massage bed, and more specifically to an electric massage bed that can enhance the comfort of every user.

2. Description of the Related Art

A conventional electric massage bed generally includes a bed frame and a plurality of retaining plates, which are mounted on the bed frame and pivotally connected with one another. A mattress of single piece is placed on the top sides of the retaining plates, and one or more vibrating motors are equipped on the bottom sides of the retaining plates. When the vibrations generated from the vibrating motors are transmitted to the mattress through the retaining plates, a massage effect can be applied to every user lying down on the mattress.

According to the aforesaid design, since the two adjacent retaining plates are connected with each other, the vibrations generated from the vibrating motors at local spots are easily transmitted to the whole area of the mattress, such that the user may feel unanticipated vibrations at various parts of the body. This may cause discomfort to the user, and meanwhile the unexpected vibrations may be transmitted to the retaining plates and the bed frame. Under the influence of the continuous vibrations, the vibrating motors may be dropped from the retaining plates that suffer the unexpected vibrations accidentally, and further a pivot pin provided between the two adjacent retaining plates or bolts provided in the bed frame may become loose to affect the structural stabilization of the electric massage bed. What is more serious is that because of the unexpected vibrations, the bed frame may get broken to threaten the safety of the user. Therefore, it is desirable to provide an electric massage bed to eliminate the aforementioned problems.

SUMMARY OF THE INVENTION

The present invention has been accomplished in view of the above-noted circumstances. It is therefore one objective of the present invention to provide an electric massage bed, which has a stable structure, and can enhance the comfort in use and prevent the spread of fire when one of the mattresses is on fire.

To achieve this objective of the present invention, the electric massage bed comprises a bed frame having a plurality of support brackets pivotally connected with one another, a plurality of mattress sets each including a mattress and a retaining plate having a bottom side mounted on one of the support brackets of the bed frame and a top side for supporting the mattress, and a vibrating motor mounted on the bottom side of the retaining plate of one of the mattress sets. By this way, when the vibration generated from the vibrating motor is transmitted to the associated mattress of the one of the mattress set, the unexpected vibration won't occur in the other mattress sets due to the separation between the two adjacent mattress sets, thereby enhancing the comfort of a user lying down on the mattresses and preventing the bed frame from getting damage so as to increase the structural stabilization of the electric massage bed. In addition, when one of the mat-

tress sets is on fire, the fire will not spread over the all mattress sets because those mattress sets are basically separated from each other without connection therebetween.

Further scope of applicability of the present invention will become apparent from the detailed description given hereinafter. However, it should be understood that the detailed description and specific examples, while indicating preferred embodiments of the invention, are given by way of illustration only, since various changes and modifications within the spirit and scope of the invention will become apparent to those skilled in the art from this detailed description.

BRIEF DESCRIPTION OF THE DRAWINGS

The present invention will become more fully understood from the detailed description given herein below and the accompanying drawings which are given by way of illustration only, and thus are not limitative of the present invention, and wherein:

FIG. 1 is a schematic drawing of the electric massage bed according to an embodiment of the present invention;

FIG. 2 is a partially sectional view of the electric massage bed according to the embodiment of the present invention, showing the way of installation of the vibrating motor; and

FIG. 3 is similar to FIG. 2, but showing an alternate way of installation of the vibrating motor.

DETAILED DESCRIPTION OF THE INVENTION

As shown in FIG. 1, an electric massage bed **10** in accordance with a preferred embodiment of the present invention comprises a bed frame **20**, five mattress sets **30**, and five vibrating motors **40**.

The bed frame **20** includes a base **21**, five support brackets **22** mounted on the base **21** and pivotally connected with one another, and a driver **23** having one end thereof pivotally connected with the base **21** and provided with an extendable rod **232** at the other end. A link rod **24** can be driven by the extendable rod **232** of the driver **23** to actuate two of the adjacent support brackets **22** to pivot relative to each other. Preferably, the number of the support brackets **22** is adjusted according to actual needs.

The mattress sets **30** each include a retaining plate **32** having a bottom side mounted on one of the support brackets **22** of the bed frame **20**, and a mattress **34** supported on a top side of the associated retaining plate **32**. In this embodiment, the retaining plates **32** each have an accommodation space **322** covered by a protecting cover **38** fastened to one of the retaining plates **32** through a plurality of screws **36**, as shown in FIG. 2.

The vibrating motors **40** are respectively received in the accommodation spaces **322** of the retaining plates **32** of the mattress sets **30** so as to be covered by the protecting covers **38** respectively. Each vibrating motor **40** is abutted against a bottom side of one of the mattress **34**. Further, a cushion **42**, which is made of foam member, rubber member or the like, is disposed between the vibrating motor **40** and the protecting cover **38** for absorbing the vibration generated from the vibrating motor **40**, as show in FIG. 2.

By means of the aforesaid design, when the vibration generated from one of the vibrating motors **40** is transmitted to

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the associated mattress **34**, the aforesaid vibration won't be transmitted to the other mattress set **30** since two adjacent mattress sets **30** are separated from each other. Therefore, a user will feel the vibration in a specific body part without getting unexpected vibrations in other body parts when lying down on the mattresses **34**, thereby enhancing the comfort of the user. Further, the vibration created by the vibrating motor **40** can be absorbed by the cushion **42** for preventing bolts or the screws **36** from coming loose from the bed frame **20** or other vibrating motors **40**, thereby increasing the structural stabilization of the electric massage bed **10** of the present invention. Furthermore, if one of the mattress sets **30** catches fire accidentally, the fire will not spread to the rest of the mattress sets **30** because the mattress sets **30** are separated from each other without connection therebetween.

To deserve to be mentioned, the way of installing the vibrating motor **40** to the retaining plate **32** can be changeable. As shown in FIG. **3**, the vibrating motor **40** is directly fastened to the bottom side of the retaining plate **32** through the screws **36** for creating a similar vibration effect. Besides, the electric massage bed **10** of the present invention can be provided with one or more vibrating motors **40** according to the actual needs.

The invention being thus described, it will be obvious that the same may be varied in many ways. Such variations are not

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to be regarded as a departure from the spirit and scope of the invention, and all such modifications as would be obvious to one skilled in the art are intended to be included within the scope of the following claims.

5 What is claimed is:

1. An electric massage bed comprising:

a bed frame having a plurality of support brackets, two adjacent said support brackets being pivotally connected with each other;

10 a plurality of mattress sets each including a mattress and a retaining plate, the retaining plate having a bottom side mounted on one of the support brackets of the bed frame and a top side for supporting the mattress, the retaining plate further having an accommodation space; and

15 a vibrating motor received in the accommodation space of the retaining plate and abutted against a bottom side of the mattress of one of the mattress sets.

2. The electric massage bed as claimed in claim **1**, wherein a protecting cover is covered on the vibrating motor and a cushion is disposed between the vibrating motor and the protecting cover.

20 3. The electric massage bed as claimed in claim **1**, wherein a link rod is driven by a driver mounted with the bed frame for actuating two adjacent said support brackets to pivot relative to each other.

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