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(54) **A bed base with/ without a mattress**

(57) The present invention relates to a bed base with/ without a mounted mattress, having a pocket spring mechanism controlled with a motor.

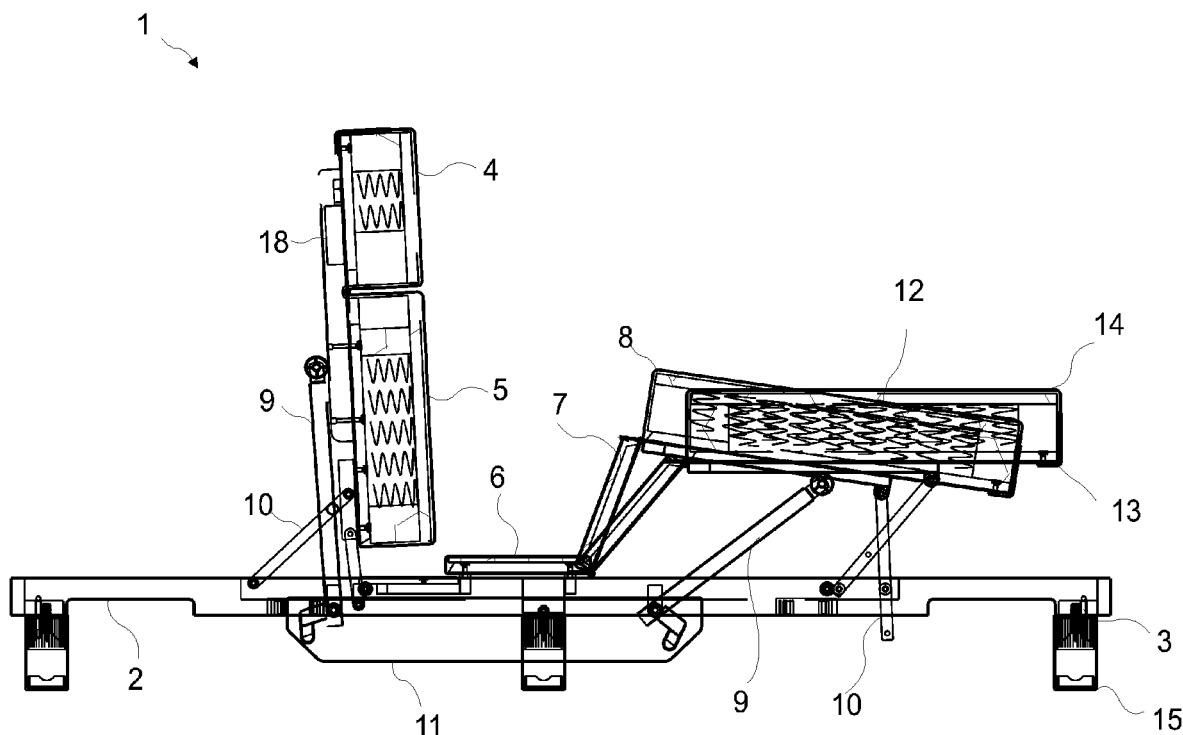


Figure 1

## Description

### Technical Field

[0001] The present invention relates to a bed base with/without a mounted mattress, having a movement mechanism.

### Background Art

[0002] Sleeping is of great importance in our life. Having a balanced diet, a peaceful environment and getting a sound sleep are most significant elements of sanity and health. Getting good and enough sleep has positive effects on life, namely, on energy, perception, thinking, performance, creativity, health, human relations and so on.

[0003] Today most adults are proven to have sleep disorders and those who change their bed suffer from backache. The reasons for the backache can be given as follows: lack of exercise, incorrect sitting and posture and obesity as well as lack of a comfortable bed.

[0004] Bed models with various characteristics in addition to being comfortable and fit for a person have been manufactured so far. Bed bases are known in the art for their comfort and capacity for storing goods.

[0005] In the state of the art the body of a bed base is designed to have a single lid in the upper part and a horizontal storage box in the lower part with sides and bottom closed. Said lid is fastened to lower main body with two hinges on the head section according to person's sleeping position. And the bed base is opened by lifting the lid upwards with physical power from the foot section. The lid is supported with hydraulic arms for preventing accidents due to a sudden drop of the lid and can be fixed at a desired angle. This kind of beds has a high capacity of storing goods. Packing/unpacking the goods can be easily performed since the lid is fully opened.

[0006] However the weight of the lid increases because of the mattress on the lid. During lifting and lowering of the lid the user may feel a pressure on the back.

[0007] In GB2286334 a multipurpose sickbed is disclosed, which enables the patient to lie either on his/her left or right side, and lie comfortably in positions other than sleeping position by inclining head and foot sections of the bed. However, since the system is mechanic the patient cannot perform the desired action by herself/himself.

[0008] In US4095296 a system is described in which the bed gains different ergonomic shapes from a horizontal position due to a motor located in the bed mechanism. The head section and the foot section lift from the knee section with the power of the motor. The aim of said apparatus is not considered within the application and it also lacks mechanisms to comfort middle and top parts of a body.

[0009] GB2224929 describes a bed, of which foot section is used as a chest due to a portion opened therein.

[0010] GB2334435 discloses a bed base adaptable to

the different mattress forms placed thereon. Although the mattress in said system is arranged to move at the junction points of the bed base it can be used separately from the bed.

### Disclosure of Invention

[0011] The object of the present invention is to provide an ergonomic, movable, motor-driven bed base with/without a mattress having a storage box on the lower part.

### Brief Description of Figures in the Drawings

[0012] A bed base according to the invention is illustrated in the accompanying drawings in which:

[0013] Figure 1 is an unfolded side cross-section view of the bed base according to the invention.

[0014] Figure 2 is an unfolded side cross-section view of the bed base according to the invention without pocket springs.

[0015] Figure 3 is a folded side cross-section view of the bed base according to the invention with pocket spring.

[0016] Figure 4 is an unfolded top view of the bed base according to the invention with pocket spring.

[0017] Detailed Description of the Invention

[0018] The parts in the figures are each given numerals as follows:

1. Bed base
2. Framework
3. Adjustment mechanism
4. Head section
5. Back section
6. Fixed part
7. Connecting part
8. Foot section
9. Drive lever
10. Supporting arm
11. Motor
12. Pocket spring
13. Plate
14. Upholstery
15. Foot
16. Hinge
17. Shoulder space
18. Head mechanism

[0019] The bed base (1) mainly comprises a framework (2) constituting the frame of the bed base, at least four feet (15) located on the corners of the framework (2), said feet having adjustment mechanisms (3) and adjusting the height of the bed base, head and back sections (4 and 5) for the user to respectively place his/her head and back, a drive lever (9) located opposite on both sides of the bed base (1) in order to support the head section (4) and the back section (5), the other end of which is connected to the motor (11) and a supporting arm (10)

of which one end is located opposite on both sides of the back section (5) and the other end is connected to the framework (2), a fixed part (6) on the framework (2), a connecting part (7) between the fixed part (6) and the foot section (8), a foot section (8) where the user place his/her legs and feet, a drive lever (9) located opposite on both sides of the bed base (1) in order to move the foot section (8), of which one end is connected to the motor and a supporting arm (10) of which one end is located on both sides of the foot section (8) and the other end is connected to the framework, and at least one electric motor (11) for enabling drive to which drive levers (9) are connected from the lower end.

**[0020]** The bed base (1) according to the invention is setup on a framework (2) and six feet (15) under the framework (2). The framework is beveled to right/left and up/down while in horizontal position with respect to the framework (2) by means of the height adjustment mechanism (3) in the four corner feet (15).

**[0021]** When the bed base (1) is desired to switch to an angled position from a horizontal position, the drive power required is supplied by means of double electric motors (11) attached to the lower part. The drive power applied by the electric motors (11) moves the head section (4), the back section (5), the connecting part (7) and the foot section (8) with the drive levers (9) from their horizontal position. This movement is carried out by directing of the metal supporting arms (10) of which one end is connected to the framework (2).

**[0022]** The supporting arm (10) and the drive lever (9) allow packing of the mattress by sliding towards the head section and remove the pressure on the waist area of the lying person, the supporting arm and the drive lever being situated under the back section (5) and on both sides. Also the head section (4) can be adjusted at various heights by means of the head mechanism (18) located only for head section (4).

**[0023]** The head section (4), back section (5), connecting part (7) and foot section (8) move with respect to the fixed part (6) in the middle which does not move. And the head section (4) and back section (5) move towards the foot section of the bed base (1) with respect to the fixed part (6) and the foot section (8) moves towards head section of the bed base (1) with respect to fixed part (6). The connecting part (7) between the fixed part (6) and the foot section (8) increases the ergonomics. The foot section (7) having a lid to be opened makes it possible to store goods therein.

**[0024]** Rotation and synchronization between the head section (4) and the back section (5) and among the fixed part (6), the connecting part (7) and the foot section (8) are performed by means of hinges (16) mounted on the lower plates (12).

**[0025]** Pocket spring (12) system used in the mattress allows using only top mattress on the product. The durability is improved with the plates (13) made of wood, metal or the like materials placed under the pocket spring system (12). The shoulder space (17) improves the com-

fort during lying down. Furthermore technology integrates with visual quality by means of upholstery (14) of various colors and materials which are fixed to the plates (13) and covered onto the pocket spring system (12).

**[0026]** Within this main concept it is possible to develop various embodiments for the inventive bed base (1), and the invention cannot be limited to the examples described herein and is actually as in the following claims.

**[0027]** The main principles of the invention are described herein. Within the framework of said main principles it is possible to develop various embodiments. And the invention is actually as in the claims.

## 15 Claims

1. A bed base (1), mainly comprising a framework (2) constituting the frame of the same; at least four feet (15) located on the corners of the framework (2) and having adjustment mechanisms (3); head and back sections (4 and 5) for the user to respectively place his/her head and back; a drive lever (9) and a supporting arm (10) being located opposite on both sides of the bed base (1) in order to support the head section (4) and the back section (5), the drive lever having lower end connected to the motor (11) and the supporting arm having lower end connected to the framework (2); a fixed part (6) on the framework (2); a connecting part (7) between the fixed part (6) and the foot section (8); a foot section (8) where the user place his/her legs and feet; a drive lever (9) located opposite on both sides of the bed base (1) in order to move the foot section (8), of which one end is connected to the motor and a supporting arm (10) of which one end is located on both sides of the foot section (8) and the other end is connected to the framework; **characterized by** and at least one electric motor (11) for enabling drive to which drive levers (9) are connected from the lower end.
2. A bed base (1) according to claim 1, in which the head section (4) is adjusted to various levels by means of a head section adjustment mechanism (18).
3. A bed base (1) according to claim 1, in which the foot section (8) with a lid can be opened and used as a storage box.
4. A bed base (1) according to claim 1, in which said bed base can be used only with a top mattress with the help of a pocket spring (12) mattress.
5. A bed base (1) according to claim 1, in which the back section (5) moves back during movement and thus packs the mattress and removes the pressure on the user body.

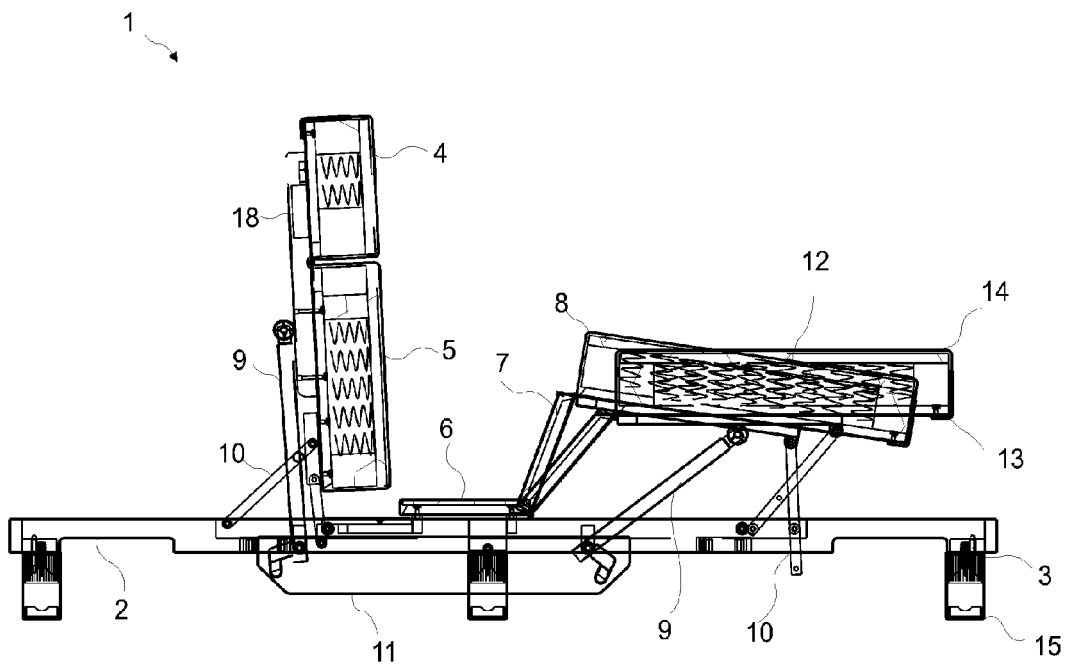


Figure 1

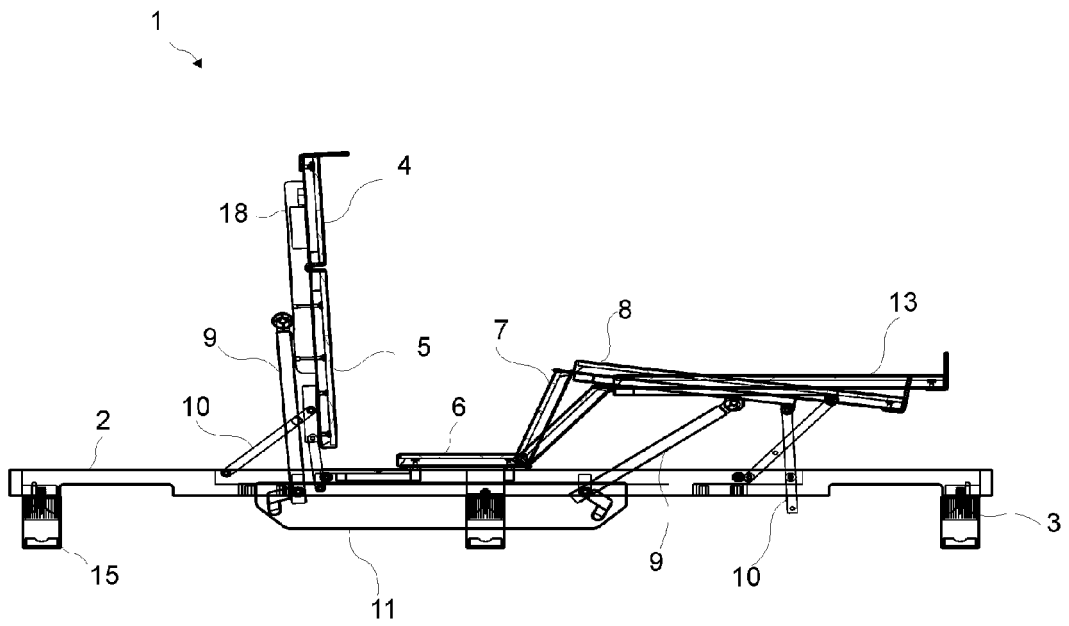


Figure 2

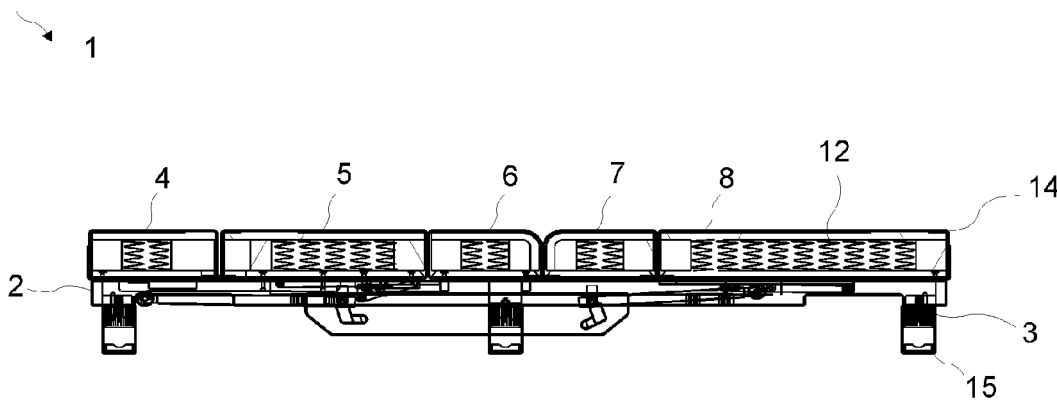


Figure 3

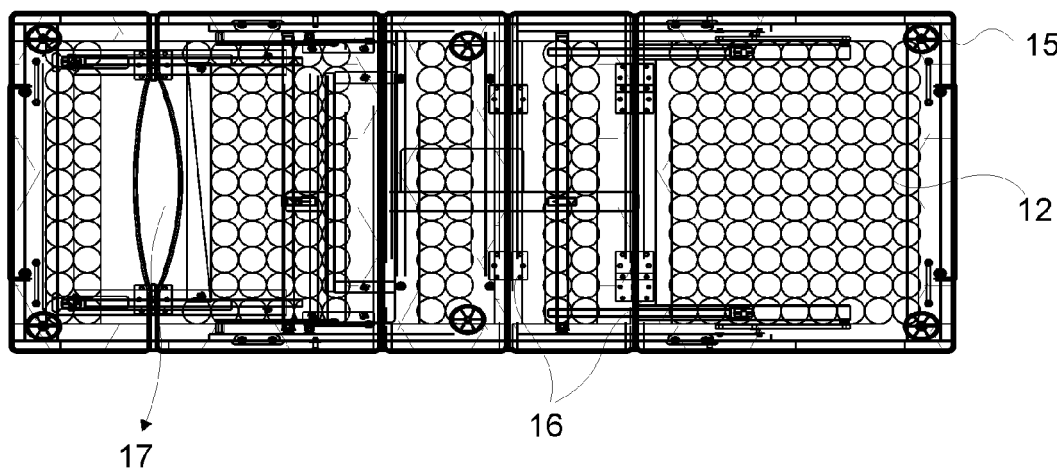


Figure 4



European Patent  
Office

# EUROPEAN SEARCH REPORT

Application Number  
EP 07 11 3419

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The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 26 May 2008	Examiner MacCormick, Duncan
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons &amp; : member of the same patent family, corresponding document</p>			

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EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT  
ON EUROPEAN PATENT APPLICATION NO.**

EP 07 11 3419

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.  
The members are as contained in the European Patent Office EDP file on  
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26-05-2008

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