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(54) Articulated bed

(57) The present invention relates to an articulated bed which comprises a perimetric tubular frame (1), two mattress support portions (2a y 2b) articulated at the ends opposite to the respective ends of the frame, and articulated to one another at facing ends by means of a common rotating shaft (21); a geared motor (3) assembled in the frame which rotationally operates a transverse shaft (4) provided with at least one crank (41) coupled

by means of a connecting rod (42) with the common shaft (21) for the articulation of the two mattress support portions (2a, 2b), transmitting a vertical oscillation to the common shaft (21) and to the facing ends of the mattress support portions (2a, 2b). In one embodiment variant it comprises a second geared motor (5) which transmits an longitudinal alternating movement to the mattress support portions (2a, 2b) by means of a connecting rod-crank mechanism (51, 52).

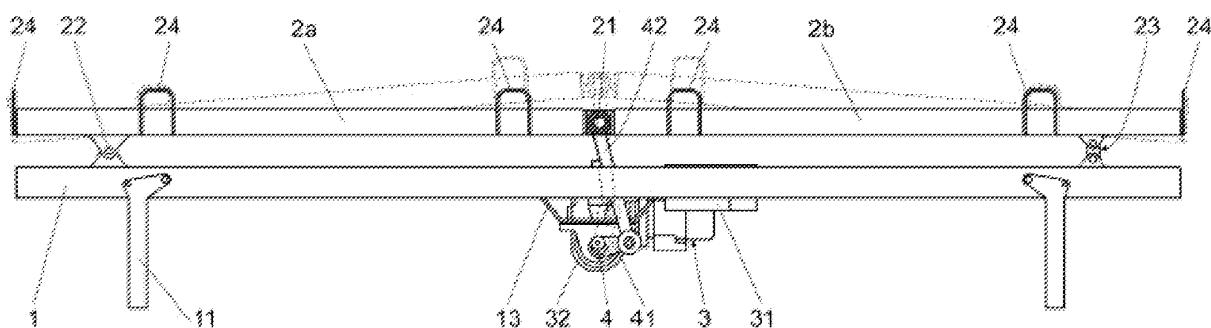


Fig. 1

Description**Object of the Invention**

[0001] The present invention relates to an articulated bed, more specifically to a bed intended to provide a vertical oscillating movement in its central part for various uses.

Background of the Invention

[0002] There are currently many articulated beds the purpose of which is to allow people who should remain lying down for long periods of time to be able to make themselves more anatomically comfortable, for example by means of raising the front or rear part of the bed.

[0003] This articulation of the mattress support of the bed can be achieved by means of drive motors, but in general the bed is not designed to move constantly and cyclically, but rather so that changes can periodically be made between static positions during a certain time.

[0004] Other beds intended for the relaxation of the user while lying down and other recreational uses comprise a vibration mechanism to allow moving the mattress support, and therefore the mattress on which the user or users are lying, in a longitudinal direction, causing a state of relaxation or oscillation.

Description of the Invention

[0005] The articulated bed object of this invention has technical particularities intended to offer an oscillating, upward and downward movement in its middle portion cyclically, said movement having various uses.

[0006] The articulated bed of the invention is of the aforementioned type and comprises a perimetric tubular frame preferably having a rectangular configuration on which articulated mattress support portions are arranged.

[0007] According to the invention, the articulated bed comprises: - two mattress support portions of a length approximately equal to half the length of the frame, articulated at facing ends by means of a common rotating shaft in the middle transverse area of the bed; a first mattress support portion being articulated at one end of the frame, and the second mattress support portion articulated at the opposite end of the frame, and - a geared motor assembled in the frame which rotationally operates a transverse shaft provided with at least one crank coupled by means of a connecting rod with the common shaft for the articulation of the two mattress support portions.

[0008] Thus, to start the geared motor, the mechanism formed by the crank and the connecting rod causes the vertical oscillation movement of the common shaft for attaching the two mattress support portions and consequently the alternating movement in a vertical direction in the intermediate area of the mattress. The vertical displacement achieved corresponds with the diameter of

the circumference described by the articulation point of the connecting rod with the crank.

[0009] This movement causes hip movement in the user which can be used for exercise purposes as a relaxation movement or while practicing sexual intercourse.

[0010] In an embodiment of the invention, the transverse shaft has at its ends respective connecting rod and crank mechanisms, the connecting rods being coupled with the common shaft for the articulation of the two mattress support portions. This configuration allows distributing the stress on the common shaft for the articulation in two symmetrical points with respect to the longitudinal shaft of the bed.

[0011] According to the invention, the geared motor is assembled in the frame by means of a support made up of two parallel crossbeams having side supports for the transverse shaft, which thus allows transmitting the weight and stress during oscillation to the middle part of the frame.

[0012] In an embodiment of the invention, the frame comprises support legs which allow arranging the geared motor and the shaft at a certain height with respect to the floor, preventing interference of the crank with the floor.

[0013] The mattress support portions comprise stops in their periphery protruding towards the upper area delimiting the support surface for the mattress and preventing side movements of the mattress during the oscillation of the mattress support.

[0014] The connecting rods used to articulate one of the mattress support portions with one of the ends of the frame have the purpose of absorbing the length differences defined by the assembly formed by the two mattress support sectors during the vertical oscillation thereof.

[0015] In an embodiment variant the frame additionally comprises a second geared motor the shaft of which is associated with one of the opposite ends of one of the mattress support portions by means of a connecting rod.

[0016] The incorporation of this second geared motor allows simultaneously or independently transmitting a vertical alternating movement to the mattress support portions in their area of attachment and an alternating movement in a longitudinal direction.

[0017] According to the invention, at least one of the mattress support portions is articulated to the frame by means of connecting rods to absorb the length differences of the assembly formed by the mattress support portions during the vertical alternating movement thereof and/or the longitudinal alternating movement thereof.

Description of the Drawings

[0018] To complement the description being made and for the purpose of aiding to better understand the features

of the invention, a set of drawings is attached to the present specification in which the following has been depicted with an illustrative and non-limiting character:

- Figure 1 shows a side view of the articulated bed according to the invention.
- Figure 2 shows frontal view of the articulated bed.
- Figure 3 shows a plan view of the articulated bed.
- Figure 4 shows a side view of an embodiment variant of the bed provided additionally with a second geared motor for transmitting a longitudinal alternating movement to the mattress support portions.

Preferred Embodiment of the Invention

[0019] The articulated bed shown in the embodiment of Figures 1 to 3 comprises a perimetric tubular frame (1) having a rectangular configuration, which has support legs (11) in a lower portion, two mattress support portions (2a and 2b) being arranged on said frame (1) articulated at the facing ends in a common shaft (21) oriented in a transverse direction.

[0020] The first mattress support portion (2a) is articulated to one of the ends of the frame by means of hinges (22), while the second mattress support portion (2b) is articulated to the opposite end of said frame (1) by means of connecting rods (23).

[0021] The frame (1) comprises in its intermediate area a support (12) in which a geared motor (3) is assembled which rotationally operates a transverse shaft (4) resting on side supports (13).

[0022] The transverse shaft (4) has at its ends respective cranks (41) connected by means of respective connecting rods (42) to the common shaft (21) for the articulation of the two mattress support portions (2a, 2b), such that the rotation of the geared motor (3) causes an oscillation of said common shaft (21) and of the facing ends of the mattress support portions coupled thereto in a vertical direction.

[0023] The mattress support portions (2a and 2b) have stops (24) in their periphery protruding towards the upper area, intended to laterally secure the mattress (not depicted) and to prevent its displacement during the vertical oscillation of the mattress support portions.

[0024] In the embodiment variant shown in Figure 4, the bed additionally has a second geared motor (5) the shaft of which is associated with one of the opposite ends of one of the mattress support portions (2b) by means of a connecting rod-crank mechanism (51, 52) responsible for transmitting an alternating movement in the longitudinal direction to the mattress support portions (2a, 2b).

[0025] In this embodiment the two mattress support portions (2a, 2b) are articulated to the frame (1) at opposite ends by means of respective connecting rods (23) which allow absorbing the length differences of the assembly formed by the mattress support portions during the vertical alternating movement thereof and/or the longitudinal alternating movement thereof.

[0026] Having sufficiently described the nature of the invention as well as a preferred embodiment, it is stated for all intents and purposes that the materials, shape, size and arrangement of the elements described may be modified, provided that this does not alter the essential features of the invention that are claimed below.

Claims

1. An articulated bed of the type comprising a perimetric tubular frame (1) on which articulated mattress support portions are arranged, **characterised in that** it comprises:

- two mattress support portions (2a and 2b) of a length approximately equal to half the length of the frame, articulated at the ends opposite to the respective ends of the frame, and articulated to one another at facing ends by means of a common rotating shaft (21) arranged in the middle transverse area of the bed,
- a geared motor (3) assembled in the frame which rotationally operates a transverse shaft (4) provided with at least one crank (41) coupled by means of a connecting rod (42) with the common shaft (21) for the articulation of the two mattress support portions (2a, 2b), transmitting a vertical oscillation to the common shaft (21) and to the facing ends of the mattress support portions (2a, 2b) articulated in said common shaft (21).

2. The bed according to claim 1, **characterised in that** the transverse shaft (4) has at its ends respective cranks (41) connected by means of respective connecting rods (42) with the common shaft (21) for the articulation of the two mattress support portions (2a and 2b).

3. The bed according to any of the previous claims, **characterised in that** the geared motor is assembled in the frame (1) by means of a support (12) made up of two parallel crossbeams of the frame (1) and has side supports (13) for the support of the transverse shaft (4).

4. The bed according to any of the previous claims, **characterised in that** the frame (1) comprises support legs (11).

5. The bed according to any of the previous claims, **characterised in that** the mattress support portions (2a and 2b) comprise stops (24) in their periphery protruding towards the upper area delimiting the support surface for the mattress.

6. The bed according to any of the previous claims,

characterised in that the frame comprises a second geared motor (5) the shaft of which is associated with one of the opposite ends of one of the mattress support portions (2b) by means of a connecting rod-crank mechanism (51, 52) responsible for transmitting an alternating movement in the longitudinal direction to the mattress support portions (2a, 2b). 5

7. The bed according to any of the previous claims, **characterised in that** at least one of the mattress support portions (2a, 2b) is articulated to the frame by means of connecting rods (23) to absorb the length differences of the assembly formed by the mattress support portions during the vertical alternating movement thereof and/or the longitudinal alternating movement thereof. 10
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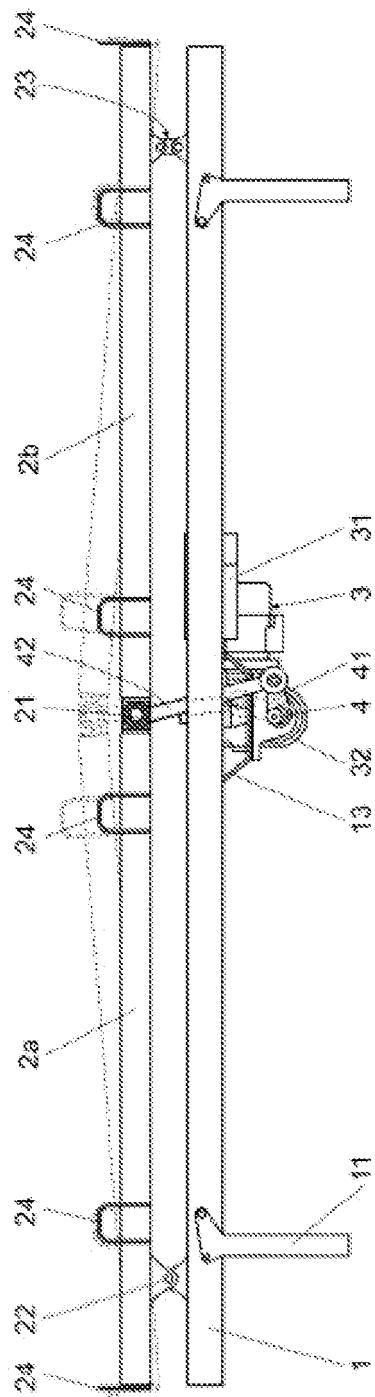
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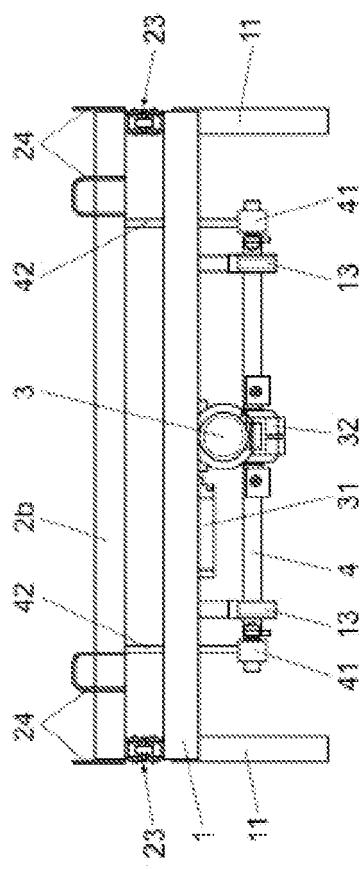


FIG. 2.

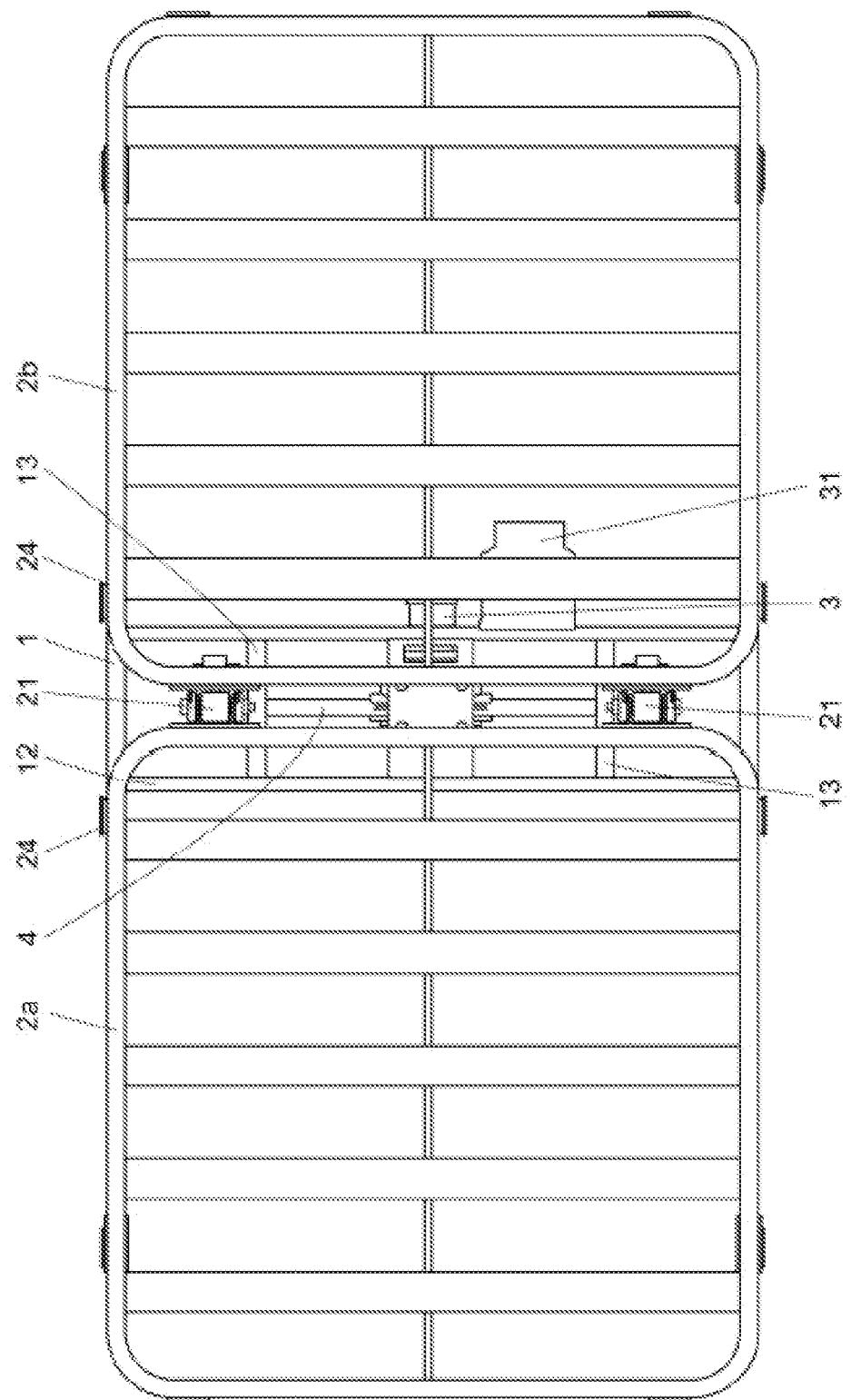


Fig. 3

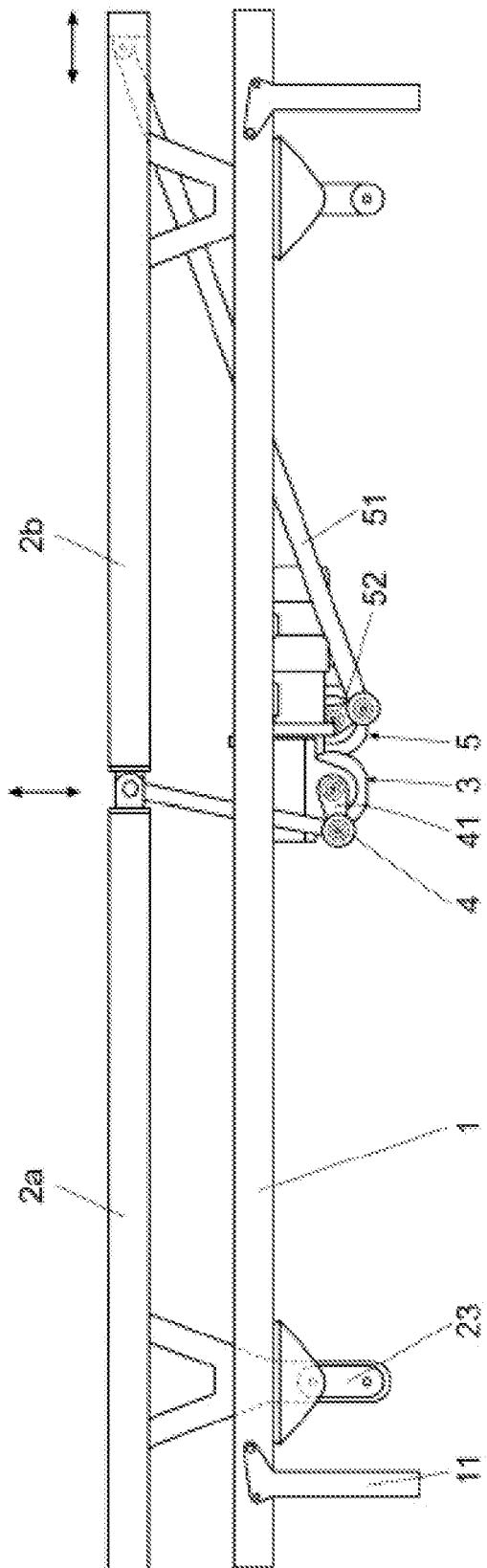


Fig. 4



EUROPEAN SEARCH REPORT

Application Number

EP 11 38 2058

DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (IPC)
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	
A	WO 2009/110742 A2 (RYOU YOUNG SUN [KR]; HWANG IN CHAL [KR]) 11 September 2009 (2009-09-11) * abstract; figures 2-14 * -----	1-7	INV. A47C21/00
A	WO 02/091883 A1 (PYUN SUNG HYUN [KR]) 21 November 2002 (2002-11-21) * page 3, line 15 - page 4, line 21; figures 1-5 *	1-7	
A	US 3 529 311 A (CRAWFORD N B) 22 September 1970 (1970-09-22) * column 2, line 57 - column 4, line 12; figures 1-3 *	1-7	
A	KR 200 436 046 Y1 (RYOUYOU NGSUN) 30 April 2007 (2007-04-30) * the whole document *	1-7	
A	JP H06 82962 U (FRANCE BED CO. LTD) 29 November 1994 (1994-11-29) * figures 1-5 *	1-7	TECHNICAL FIELDS SEARCHED (IPC)
			A47C A47D A61G
The present search report has been drawn up for all claims			
1	Place of search	Date of completion of the search	Examiner
	Munich	11 July 2011	Dartis, Daniel
CATEGORY OF CITED DOCUMENTS			
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			
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 & : member of the same patent family, corresponding document			

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

EP 11 38 2058

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. The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

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