

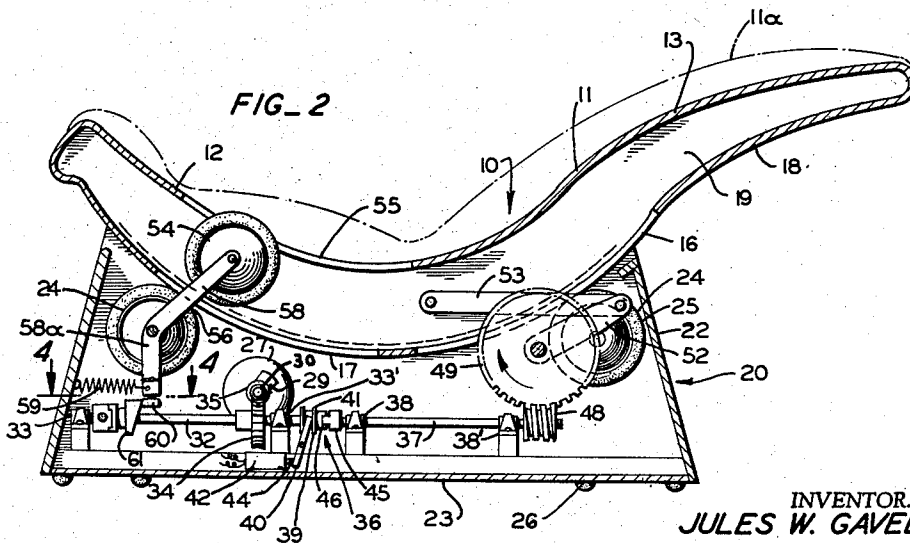
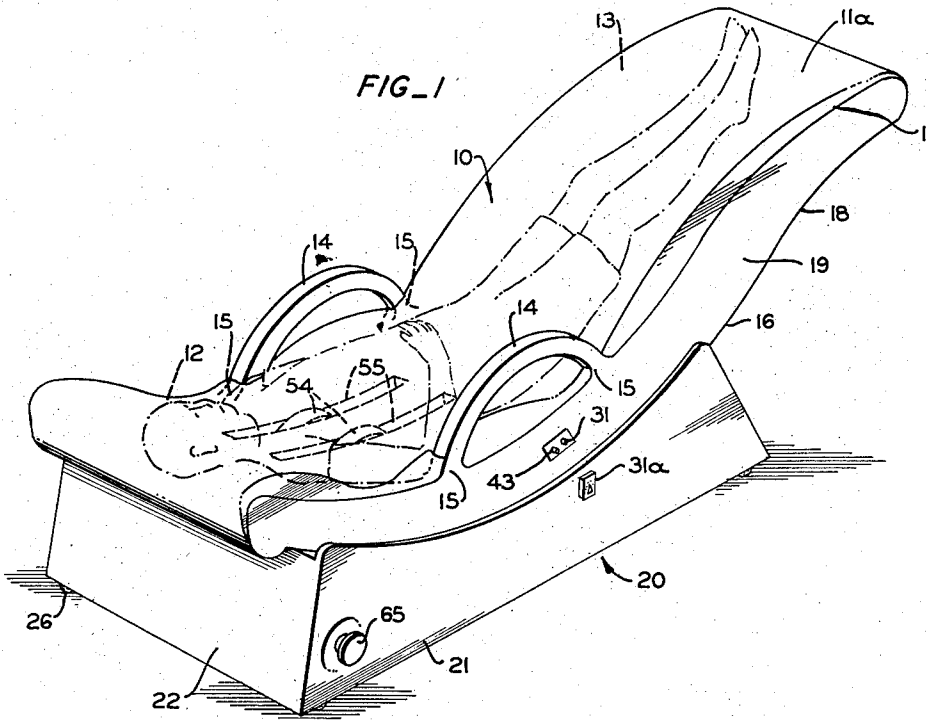
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J. W. GAVELEK
BODY EXERCISING DEVICE

2,874,689

Filed Oct. 2, 1957

2 Sheets-Sheet 1



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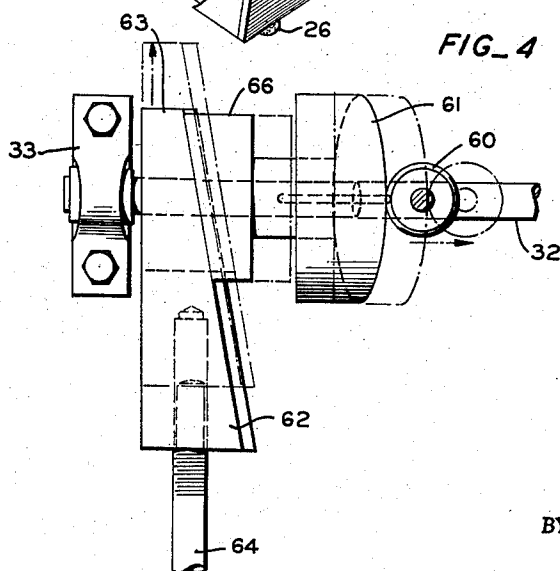
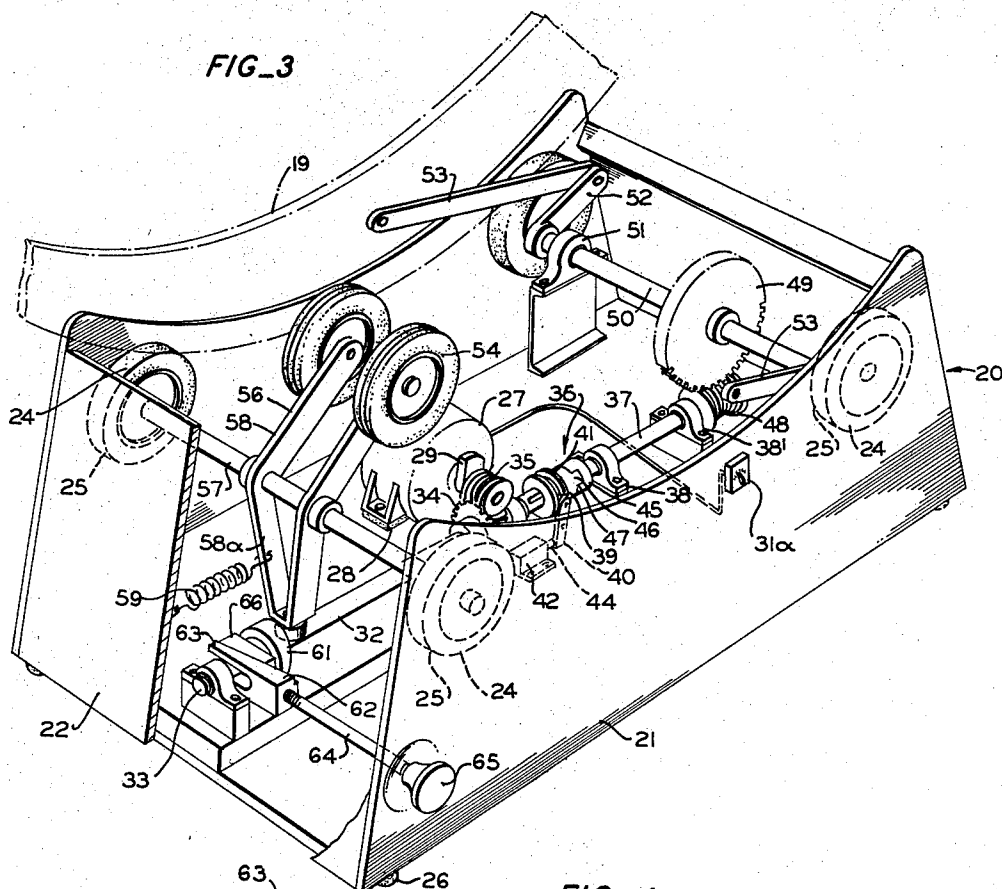
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BODY EXERCISING DEVICE

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9 Claims. (Cl. 128—33)

The present invention relates to a body exercising device, and in particular relates to a mechanically operated device constructed like a lounge chair that will impart exercising motions to a person resting thereon.

Certain motions as applied to the human body may be found to have beneficial effects. These have been used as a relaxation aid or for their therapeutic effects. One of these motions is that of vibration which is utilized to relieve muscular tension. Another is the rocking motion that will alternately raise and lower the upper and lower parts of the body. This rhythmic rocking motion can aid blood circulation and have soothing effects for the subjected persons. Still another motion is the controlled massage as applied to the back of a patient. Furthermore, they have been self applied by persons who have experienced beneficial results therefrom. These motions have long been in wide use and are today being accomplished with various mechanical devices to facilitate their application and increase their effectiveness.

It is an object of this invention to provide a body exercising device with means to simultaneously vibrate, rock, and massage a person reclining thereon.

It is also an object of this invention to provide a body exercising device with power actuated means to vibrate a person reclining thereon, said means to simultaneously provide a rocking motion, a massaging action, or both if desired.

Another object of this invention is to provide a device that would apply certain body exercising motions that could be utilized in therapeutic procedures for a patient.

A further object of this invention is to provide an article of furniture similar to a lounge chair that could readily impart certain relaxing motions to a person in his home.

The novel features which are believed to be characteristic of the invention, both as to its organization and method of operation will be better understood from the following description considered in connection with the accompanying drawings in which an embodiment of the invention is illustrated by way of example. It is to be expressly understood, however, that the drawings are for the purpose of illustration and description only, and are not intended as a definition of the limits of the invention.

Figure 1 is a perspective view of a device embodying the invention showing a person reclining thereon.

Figure 2 is a vertical elevational section of the device shown in Figure 1.

Figure 3 is a perspective view of the device shown in Figure 1 with portions removed and parts partly broken away to expose the driving means enclosed within the base of the device.

Figure 4 is a view taken substantially on line 4—4 of Figure 2.

With reference to the drawings, there is shown a body rest member 10 having an upper surface 11 for supporting substantially the entire posterior of a person in a reclined position. Upper surface 11 has a concave sec-

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tion 12 extending into a convex section 13 to form a contoured surface similar to that of a lounge chair. A pair of curved members 14 (as seen in Figure 1 and omitted in Figure 2) are connected at their ends 15 to form arm rests or supports. A lower surface 16, shaped similarly to that of the upper surface, has a convex section 17 and a concave section 18 opposite concave section 12 and convex section 13 of said upper surface respectively. Sides 19 connect all of the sections of body rest member 10 to form a lounge chair like body support for a person resting thereon. Upper surface 11 is upholstered with suitable padding 11a.

Base 20 is formed by sides 21, walls 22, and bottom 23 interconnected in a box like fashion. The upper edges of sides 21 are shown to generally conform to the convex shape of section 17 of body rest member 10. Axially connected near the ends of sides 21 are four freely rotatable wheels or rollers 24 symmetrically arranged near the upper corners of base 20, said rollers 24 have rims 25 made of resilient material such as rubber or the like. Between sides 21 the body rest member 10 is supported on rims 25 of the four rollers 24. Thus it will be realized that body rest member 10 may roll on rollers 24 to define an arc in accordance with the shape of convex section 17 of body rest member 10. The portions of convex section 17 of body rest member 10 that bear on rims 25 of rollers 24 during this rocking motion are called here-in the convex bearing surfaces. On the underside of bottom 23 are attached several hemispherical rubber rest pads 26 to cushion the movements of the body exercising apparatus.

A driver comprising several components for producing various motions imparted to a person resting on body rest member 10 are located within base 20. An electric motor 27 rests on rubber pads or the like 26 and is bolted to bottom 23 of base 20, said rubber pads forming shock mountings. An eccentric weight element 29 rotates with motor shaft 30 to vibrate the base. The effect of the shock mountings can be adjusted by changing the tension of the bolts connecting electric motor 27 to bottom 23 thereby changing the amount of vibration transmitted to base 20. Electric switch 31 located on side as seen in Figure 1 turns on the electric motor. Rheostat 31a in series with the voltage supply line controls the speed of electric motor 27.

A main shaft 32 is journaled at supports 33 and 33' with its longitudinal axis at right angle to that of motor shaft 30. A gear 34 rotates main shaft 32 when driven by worm gear 35 on motor shaft 30. A clutch 36 connects main shaft 32 to auxiliary main shaft 37 which is journaled at supports 38 and 38'. Clutch 36 has a movable plate 39 which can be moved to slide on main shaft 32 by lever 40 fitting within collars 41 of movable plate 39. Solenoid 42 may be energized by electric switch 43 to extend plunger 44 for pivoting lever 40. Then movable clutch plate 39 will be moved away from fixed clutch plate 45 on the auxiliary main shaft. Fixed clutch plate 45 has a protrusion 46 to fit within a recess 47 in movable clutch plate 39.

Rocking motion is imparted to body rest member 10 by rocking converter means connected to be rotatively driven by mainshaft 32, said means includes a worm gear 48 on auxiliary main shaft 37 to drive gear 49 which is axled to a transverse shaft 50 journaled in supports 51. Fixed to the ends of transverse shaft 50 are a pair of crank members 52 to rotate one of the ends of links 53. The other ends of links 53 are pinned to body rest member 10. With electric motor 27 turned on and clutch 36 engaged, main shaft 32 will rotate auxiliary main shaft 37 to move links 53 causing body rest mem-

ber 10 to roll back and forth on rollers 24 thus forming a rocking motion.

In order to massage the back of a person reclining on body rest member 10, a pair of massage elements or wheels 54 is shown to have their rims extending through slots 55 in the body rest member. Slots 55 are parallel to each other and extend longitudinally along the back portion of a person reclining on the body rest member. In order to reciprocate the massage wheels to move back and forth along the slots, a pair of arms 56 are provided which are pivoted on pivot shaft 57. Arms 56 have first sections 58 extending at an angle from pivot shaft 57 to position rotatable massage wheels 54 within slots 55, and second sections 58a extending downwardly from pivot shaft 57 to connect to a cam follower 60. As seen in Figure 3, pivot shaft 57 also provides support for the rear two rollers 24. Spring 59 pulls one of second sections 58a to cause cam follower 60 to bear against the inclined surface of cam 61. Cam 61 is keyed to slide on and rotate with main shaft 32. A wedge block 62 has a cutout forming two prongs 63 between which the wedge block may slide on main shaft 32. A rod 64 threaded to wedge block 62 extends through an opening in one of sides 21 of base 20 to a knob 65 for positioning the wedge block between support 33 and cam spacer 66. As wedge block 62 is moved by positioning knob 65 in the direction shown by the arrow in Figure 4, its inclined surface will bear against the matching inclined surface of cam spacer 66 to slide cam spacer 66 and cam 61 to the positions shown, for example, by dotted lines. As main shaft 32 is rotated, cam 61 will follow the inclined surface of cam follower 61 thereby pivoting arms 56 on pivot shaft 57. Thus, the massage wheels having their rims extending through slots 55 are reciprocated to move back and forth along the slots in body rest member 10. Massage control means are provided by use of wedge block 62 to position cam 61 so that the amount of extension of massage wheels or elements 54 may be adjusted. Padding 11a is shaped to cause massage wheels 54 to bear equal pressure on the back of person reclining thereon as the massage wheels are reciprocated along slots 55. In addition padding 11a is shaped to provide a more comfortable surface for a person reclining thereon than the concave section 12 of upper surface 11.

In operation, adjustments would first be made for the desired amount of vibration and massaging action. As previously described, the amount of vibration can be controlled by adjusting the tightening of the bolts connecting motor 27 to bottom 23 of base 20 thereby changing the connective coupling of shock mountings 28. As electric motor 27 vibrates because of eccentric weight element 29, so will the base 20 which will transmit this vibration to body rest member 10. Knob 65 may be moved to position cam 61 to pivot arms 56 so that massage wheels 54 will extend through slots 55 for a desired massage pressure as massage wheels 54 are reciprocated along the slots. Solenoid 42 may be controlled by switch 43 to engage clutch 36 so that the rotating main shaft 32 will drive auxiliary shaft 37 to rock body rest member 10 by having its convex bearing surfaces move back and forth on rollers 24. At a desired position of body rest member 10, if clutch 36 is disengaged, only the above described vibrating and massaging motions will be transmitted to the body rest member at the selected position.

When switch 31 is actuated to turn off the voltage supply to electric motor 27, body rest member 10 will stop rocking and remain in its position at the time of switching. Accordingly, it will be realized that another use of the device of this invention would be to raise or lower the upper and lower parts of the body of a person resting thereon to a desired position.

It is to be noted that only one motor is necessary for the body exercising device of this invention to provide rocking, vibration, and massaging action to a person. As the driving means are located within the base, the

outward appearance of the device resembles a lounge chair and therefor can be additionally used as a decorative and useful article of furniture. Furthermore, it will be realized that the connecting parts used in the driver means and its controls are parts which are easily and inexpensively obtained.

Having herein described the invention, what is claimed as new is:

1. A body exercising device comprising: a base; freely rotating rollers connected to the base; a body rest member having convex bearing surfaces resting on the rollers, said body rest member having a plurality of slots therethrough; a massage element in each of the slots; and a driver including means for vibrating said body rest member, said driver being mounted within the base to rock the body rest member by having its convex bearing surfaces move back and forth on the rollers, and to vibrate the body rest element by vibrating the base, and to move the massage elements along the slots.

2. The device in accordance with claim 1 which includes adjustable shock mountings for controlling the amount of vibration.

3. The device in accordance with claim 1 which includes a clutch to disengage the driver from rocking the body rest member, and massage control means to adjust the amount of extension of the massage elements through the slots.

4. A body exercising device comprising: a base; freely rotating rollers connected to the base; a body rest member having convex bearing surfaces resting on the rollers, said body rest member having a plurality of slots therethrough; a massage element in each of the slots; and a driver mounted within the base, said driver including a main shaft journaled to the base, rocking converter means connected to be rotatively driven by the main shaft to rock the body rest member by having its convex bearing surfaces move back and forth on the rollers, reciprocating means connected to be driven by the rotating main shaft to move the massage elements along the slots, an electric motor with a shaft connected to rotate the main shaft, and an eccentric weight element connected to the motor shaft to vibrate the motor, said electric motor being connectively coupled to vibrate the base.

5. The device in accordance with claim 4 wherein said electric motor is connectively coupled to the base by adjustable shock mountings.

6. The device in accordance with claim 4 which additionally includes a clutch to disengage the rocking converter means from the main shaft, and massage control means to adjust the amount of extension of the massage elements through the slots when driven by the reciprocating means.

7. A body exercising device comprising: a base; two pairs of rollers connected to the base; a body rest member with a convex bearing surface on each side thereof resting on one of the pairs of rollers, said body rest member having a plurality of slots therethrough; a massage element in each of the slots; a driver mounted within the base, said driver including a main shaft journaled to the base, rocking converter means connected to be rotatively driven by the main shaft to rock the body rest member by having its convex bearing surfaces move back and forth on the rollers, reciprocating means connected to be driven by the rotating main shaft to move the massage elements along the slots, an electric motor with a shaft connected to rotate the main shaft, and an eccentric weight element connected to the motor shaft to vibrate the motor, said electric motor being connectively coupled by adjustable shock mountings to vibrate the base; a clutch to disengage the rocking converter means from the main shaft; and massage control means to adjust the amount of extension of the massage elements through the slots.

8. A body exercising device comprising: a base; freely rotating rollers connected to the base; a body rest member

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having convex bearing surfaces resting on the rollers, said body rest member having a plurality of slots there-through; a massage element in each of the slots; and a driver mounted within the base, said driver including means for vibrating the body rest element and means for reciprocating the massage elements along the slots, said driver including rocker converter means connected to rock the body rest member by having its convex bearing surfaces move back and forth on the rollers, and a clutch to disengage the rocking converter means and to selectively position the body rest member.

9. The device in accordance with claim 8 which includes means to simultaneously adjust the rate of vibration

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and the rate of rocking of the body rest member and to adjust the rate of reciprocation of the massage elements.

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