A tilting inversion exerciser includes a table pivotally supported on a lower supporting stand for supporting a user, a planar member readily attached to the table with one or more straps, and a vibration generating device for generating a vibration to vibrate the user, particularly the joints or the articular cartilages or the joint capsules of the user when the user and the table are tilted or inverted relative to the lower supporting stand and when the joints of the user are opened. An infrared ray generating device may further be attached to the planar member for generating an infrared ray to warm the user.
TILTING INVERSION EXERCISER HAVING VIBRATING DEVICE

BACKGROUND OF THE INVENTION

[0001] 1. Field of the Invention

[0002] The present invention relates to a tilting inversion exerciser, and more particularly to a tilting inversion exerciser including a vibrating device for vibrating the joints or the whole body of the users and for facilitating the blood circulation of the users.

[0003] 2. Description of the Prior Art

[0004] Typical tilting inversion exercisers comprise a pivoting frame or support plate pivoted to or supported on a foldable stand, and arranged for allowing the support plate to be pivoted or rotated relative to the stand, and for allowing the users to conduct the tilting or inversion exercises.

[0005] For example, U.S. Pat. No. 5,718,660 to Chen discloses one of the typical tilting inversion exercisers for straightening the spinal column of the user and also comprising a cushion for supporting the users, and a stand for pivotally supporting the cushion.

[0006] However, the typical tilting inversion exercisers may only be used for conducting or operating the tilting or inversion exercises only, but may not be used to vibrate the joints or the whole body of the users, and also may not be used to facilitate or promote the blood circulation of the users.

[0007] The present inventor and applicant had developed another typical tilting inversion exerciser including a massage device for massaging the users. For example, U.S. Pat. No. 7,052,448 to Teeter discloses a typical tilting inversion exerciser including one or more cranks rotatably attached to a carrier, and one or more wheels attached to the cranks for massaging the users.

[0008] However, the wheels are required to be canted or engaged with the users such that the wheels may only be used to be engaged with and to massage the muscles at the back portion of the users, but may be used to massage the other portions of the users, such as the joints of the users.

[0009] In addition, the wheels and the cranks of the typical tilting inversion exerciser are disposed or engaged in the support plate and may not be disengaged from the support plate and also may not be selectively attached onto the support plate of the other typical tilting inversion exerciser. Furthermore, the typical tilting inversion exerciser also may not be used to facilitate or promote the blood circulation of the users.

[0010] The present invention has arisen to mitigate and/or obviate the afore-described disadvantages of the conventional tilting inversion exercisers.

SUMMARY OF THE INVENTION

[0011] The primary objective of the present invention is to provide a tilting inversion exerciser including a vibrating device for vibrating the joints or the whole body of the users and for facilitating or promoting the blood circulation of the users.

[0012] The other objective of the present invention is to provide a tilting inversion exerciser including an infrared ray generating device for generating infrared ray to the joints or the whole body of the users for vitalizing the cells of the users and for further facilitating or promoting the blood circulation of the users.

[0013] In accordance with one aspect of the invention, there is provided a tilting inversion exerciser comprising a lower supporting stand, a table pivotally supported on the lower supporting stand for supporting a user, and a vibrating assembly including a planar member, an attaching device for attaching the planar member to the table, and a vibration generating device for generating a vibration to vibrate the user.

[0014] The attaching device includes at least one strap attached to the planar member for engaging with the table and for securing a planar member to the table. The strap of the planar member is selectively attached to a side portion of the table, or attached to an upper portion of the table, or attached to a lower portion of the table.

[0015] The vibration generating device includes at least one housing attached to the planar member, a motor received in the housing, and an eccentric member attached to the motor for generating the vibration. The housing includes two housing members coupled together.

[0016] An infrared ray generating device may further be provided for generating an infrared ray. The infrared ray generating device includes at least one casing attached to the planar member, and at least one light member received in the casing for generating the infrared ray.

[0017] The casing includes a lower casing member and an upper cover coupled together. The casing includes a circuit board disposed in the casing for supporting the light member.

[0018] Further objectives and advantages of the present invention will become apparent from a careful reading of the detailed description provided hereinbelow, with appropriate reference to the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0019] FIG. 1 is a perspective view of a tilting inversion exerciser in accordance with the present invention;

[0020] FIG. 2 is a perspective view of the tilting inversion exerciser, similar to FIG. 1, illustrating the tilting operation of the tilting inversion exerciser;

[0021] FIG. 3 is a perspective view illustrating a vibrating assembly of the tilting inversion exerciser;

[0022] FIG. 4 is a partial perspective view illustrating a vibrating device of the tilting inversion exerciser;

[0023] FIG. 5 is a partial exploded view of the vibrating device of the tilting inversion exerciser;

[0024] FIG. 6 is a partial perspective view illustrating an infrared ray generating device of the tilting inversion exerciser;

[0025] FIG. 7 is a partial exploded view of the infrared ray generating device of the tilting inversion exerciser.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0026] Referring to the drawings, and initially to FIGS. 1 and 2, a tilting inversion exerciser 1 in accordance with the present invention comprises a lower supporting stand 10 for pivotally or rotatably supporting a base or table 20 thereon and for supporting a user on the table 20, the lower supporting stand 10 includes such as two pairs of legs 11 having upper ends pivotally coupled together with an apex coupler 12, so as to form two inverted V-shaped frames 13. The table 20 may be pivotally or rotatably attached to and supported on the apex coupler 12 of the lower supporting stand 10 with a pivot axle 14.
The table 20 includes two opposite side edges 21, and includes one end or upper portion 22 located above the pivot axle 12, and the other end or lower portion 23 located below the pivot axle 12. The table 20 further includes an ankle holder 24 adjustably attached or secured or coupled to the lower portion 23 thereof by an adjustable extension 25, for detachably securing the ankle portions of the user to the table 20, and a foot pedal 26 attached to the ankle holder 24 or the adjustable extension 25, for supporting the user thereon. The above-described structure is typical and will not be described in further details.

The table 20 may be tilted or rotated relative to the lower supporting stand 10 manually by the users themselves, or automatically by a power rotating or driving device (not shown) which may be provided for rotating the table 20 relative to the lower supporting stand 10 and for allowing the table 20 to be rotated relative to the lower supporting stand 10 between a forward tilting position as shown in FIG. 1 and an upwardly working or inversion or vertical position as shown in FIG. 2, in which the table 20 may be perpendicular to the ground. Similarly, the tilting or rotating or operating of the table 20 relative to the lower supporting stand 10 is typical and will not be described in further details.

The present invention is to provide a vibrating means or assembly 30 for vibrating the joints or the whole body of the users and for facilitating or promoting the blood circulation of the users. For example, as shown in FIGS. 1 and 3, the vibrating assembly 30 includes a mattress or pad or cushioning or planar body member 31 for attaching or engaging onto the table 20, and includes an attaching means having such as one or more side straps 32 attached or secured or extended from the side portions of the planar member 31 for strapping or engaging around the middle portion of the table 20 (FIGS. 1 and 2) and for securing onto the table 20 with hooks or buckles or hook-and-loop devices or fasteners 33, and one or more upper straps 34 attached or secured or extended from the upper portion of the planar member 31 for strapping or engaging around or onto the upper portion 22 of the table 20 and for securing onto the table 20 with hooks or buckles or hook-and-loop devices or fasteners 35.

Planar member 31 may be made of rubber, foamy or plastic materials, or other resilient or synthetic materials. As also shown in FIGS. 1-3, the planar member 31 may further include one or more lower straps 36 attached or secured or extended from the lower portion of the planar member 31 for strapping or engaging around or onto the lower portion 23 of the table 20 and for securing onto the table 20 with hooks or buckles or hook-and-loop devices or fasteners 37. Accordingly, the planar member 31 of the vibrating assembly 30 may be easily and readily and freely attached onto the table 20 for supporting the users thereon.

As best shown in FIG. 3, the vibrating assembly 30 includes one or more vibrating means or devices 40 disposed or engaged in the planar member 31 and arranged or positioned in any suitable position in the planar member 31, and preferably arranged or positioned in the suitable or selected positions relative to the joints or the portions of the users that are required to be vibrated or shaken or vitalized. The vibrating devices 40 may be electrically coupled to a control or central processing unit or processing device 50 with electric wires 51, and the processing device 50 may be electrically coupled to a switch or control device 52 with other electric wires 53 (FIGS. 1 and 2) for allowing the vibrating devices 40 and the processing device 50 to be controlled or actuated or operated by the control device 52.

As shown in FIGS. 3-5, the vibrating devices 40 each include a housing 41 formed by two housing members 42 which may be pivotally coupled together or may be detachably coupled together with latches 43 and latch openings 44, and each include a chamber 45 formed therein for receiving a motor 46 therein which may be electrically coupled to the processing device 50 with the electric wires 51. The motor 46 includes a spindle 47, and a cam or eccentric member 48 attached to the spindle 47 for generating vibrations or shocks to vibrate the joints or the whole body or the suitable or selected positions of the users and for facilitating or promoting the blood circulation of the users.

It is to be noted that the joints of the users may be suitably or selectively opened for allowing the articular cartilages and/or the joint capsules to be relaxed when the users and the table 20 are tilted or inverted relative to the lower supporting stand 10. At this moment, it will be the best time that the joints and/or the articular cartilages and/or the joint capsules of the users be selectively relaxed by the vibrations generated by the cam or eccentric member 48 and the motor 46 of the vibrating devices 40. The typical tilting inversion exercisers failed to provide a vibrating means for vibrating the joints and/or the articular cartilages and/or the joint capsules or the whole body of the users.

As also shown in FIG. 3, the vibrating assembly 30 may further include one or more infrared ray generating means or devices 60 disposed or engaged in the planar member 31 and arranged or positioned in any suitable position in the planar member 31, and preferably arranged or positioned in the suitable or selected positions relative to the joints or the portions of the users that are required to be warmed up or heated. The infrared ray generating devices 60 may also be electrically coupled to the processing device 50 with electric wires 51, the infrared ray generating devices 60 each include a casing 61 formed by a lower casing member 62 and an upper cover 63 which may be pivotally coupled together or may be detachably coupled together with catches 64 and latch openings 65, or with fasteners 66.

The infrared ray generating devices 60 each further include a circuit board 67 disposed or engaged in the casing 61 and secured or fixed in the casing 61 with such as the fasteners 66, and one or more infrared ray generating light members 68 disposed or secured or attached to the circuit board 67 and electrically coupled to the processing device 50 with electric wires 51 for allowing the light members 68 of the infrared ray generating devices 60 to be selectively controlled or actuated or operated by the control device 52 and the processing device 50 to generate infrared rays and to shine or to warm or heat the joints or the whole body of the users or suitable or selected positions of the users and for facilitating or promoting the blood circulation of the users.

It is also to be noted that the joints of the users may also be suitably or selectively opened for allowing the articular cartilages and/or the joint capsules to be relaxed when the users and the table 20 are tilted or inverted relative to the lower supporting stand 10. At this moment, it will be the best time that the joints and/or the articular cartilages and/or the joint capsules of the users be selectively relaxed by the infrared rays generated by the light members 68 of the infrared ray generating devices 60. The typical tilting inversion exercisers failed to provide an infrared ray generating means for warming or heating the joints and/or the articular cartilages and/or the joint capsules or the whole body of the users.
In operation, as shown in FIGS. 1 and 2, the planar member 31 of the vibrating assembly 30 may be easily and readily and freely attached onto the table 20 of all kinds of the typical tilting inversion exercisers with the straps 32, 34, 36 and the hooks or buckles or fasteners 33, 35, 37, and the vibrating devices 40 and/or the infrared ray generating devices 60 may be arranged or positioned in the suitable or selected positions relative to the joints or the portions of the users that are required to be vibrated or shaken or vitalized. The vibrating devices 40 and/or the infrared ray generating devices 60 may then be controlled or actuated or operated with the control device 52 to selectively vibrate and/or warm and/or relax the joints and/or the articular cartilages and/or the joint capsules of the users by the users themselves.

It is further to be noted that the vibrating devices 40 and/or the infrared ray generating devices 60 may be arranged or positioned in the suitable or selected positions relative to the joints or the portions of the users that are required to be vibrated or shaken or vitalized, such as the low back portion of the users who may usually feel pain in the back. In addition, the planar body member 31 may also be formed into the right curvature as a neck pillow for fitting or positioning in the user’s neck portion to suitably vibrate or warm or massage the neck portion of the user.

Accordingly, the tilting inversion exerciser in accordance with the present invention includes a vibrating device for vibrating the joints or the whole body of the users and for facilitating or promoting the blood circulation of the users, and includes an infrared ray generating device for generating infrared ray to the users, particularly to the joints or the whole body of the users for vitalizing the cells of the users and for further facilitating or promoting the blood circulation of the users.

Although this invention has been described with a certain degree of particularity, it is to be understood that the present disclosure has been made by way of example only and that numerous changes in the detailed construction and the combination and arrangement of parts may be resorted to without departing from the spirit and scope of the invention as hereinafter claimed.

1. A tilting inversion exerciser comprising:
   a lower supporting stand,
   a table pivotally supported on said lower supporting stand for supporting a user, and
   a vibrating assembly including a planar member, means for generating a vibration to vibrate the user, and at least one strap attached to said planar member for engaging with said table and for securing said planar member to said table.

2. (canceled)

3. The tilting inversion exerciser as claimed in claim 1, wherein said at least one strap of said planar member is attached to a side portion of said table.

4. The tilting inversion exerciser as claimed in claim 1, wherein said at least one strap of said planar member is attached to an upper portion of said table.

5. The tilting inversion exerciser as claimed in claim 1, wherein said at least one strap of said planar member is attached to a lower portion of said table.

6. The tilting inversion exerciser as claimed in claim 1, wherein said vibration generating means includes at least one housing attached to said planar member, a motor received in said at least one housing, and an eccentric member attached to said motor for generating the vibration.

7. The tilting inversion exerciser as claimed in claim 6, wherein said at least one housing includes two housing members coupled together.

8. The tilting inversion exerciser as claimed in claim 6, wherein said motor is coupled to a processing device, and said processing device is coupled to a control device for allowing said motor and said processing device to be operated by said control device.

9. The tilting inversion exerciser as claimed in claim 1 further comprising means for generating an infrared ray.

10. The tilting inversion exerciser as claimed in claim 9, wherein said infrared ray generating means includes at least one casing attached to said planar member, and at least one light member received in said at least one casing for generating the infrared ray.

11. The tilting inversion exerciser as claimed in claim 10, wherein said at least one casing includes a lower casing member and an upper cover coupled together.

12. The tilting inversion exerciser as claimed in claim 10, wherein said at least one casing includes a circuit board disposed in said casing for supporting said at least one light member.

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