An elliptical exerciser includes a frame with a wheel connected thereto and two swinging mechanisms are pivotally connected on two sides of the wheel. Each swinging mechanism includes a swing bar and a connection link. A first end of each connection link is pivotally connected to the wheel and a second end of each connection link is connected to an adjusting mechanism. The adjusting mechanism includes a main body which has a first end pivotably connected to the frame and the two second ends of the connection links are pivotally connected to a second end of the main body. Two pedals are connected to the connection links so that the user moves the swing bars and stands on the pedal to move the pedals along an oval track. The long and short axes of the oval track are adjustable by pivoting the adjusting mechanism.
TRACK ADJUSTING MECHANISM FOR ELLIPTICAL EXERCISER

FIELD OF THE INVENTION

[0001] The present invention relates to a track adjusting mechanism for elliptical exercisers and the track of the pedals can be adjusted by the users.

BACKGROUND OF THE INVENTION

[0002] A conventional elliptical exerciser is shown in FIG. 1 and generally includes a frame 92 on the floor and two rails 921 extend from a rear end of the frame 92. A post extends from the frame 92 and two swinging bars 93 are pivotally connected on two sides of the post. A transmission mechanism 91 includes a wheel 911 connected to the post and each swinging bar 93 is pivotally connected with a first end of a link and a second end of the link is pivotally connected with a movable member 912 which includes a roller 913 movable on the rail 921 corresponding thereto. The user stands on the pedals on the movable members 912 and swings the swinging bars 93 alternately so that the rollers 913 move on the rails 921 back and forth. The pedals move along an oval trace.

[0003] Another conventional elliptical exerciser is shown in FIG. 2 and generally includes a frame 92 on the floor and a post extends from the frame 92. Two swinging bars 93 are pivotally connected on two sides of the post. A transmission mechanism 91 includes a wheel 911 and two movable members 912, wherein the wheel 911 is located on the frame 92 and spins about an axle thereof and the two movable members 912 are pivotally connected between the wheel 911 and the two swinging bars 93. The user stands on the pedals on the movable members 912 and swings the swinging bars 93 alternately, the pedals move along an oval trace.

[0004] Nevertheless, both of the two conventional elliptical exercises can only provide a fixed track for the pedals and the fixed track makes the users feel boring after using a period of time.

[0005] The present invention intends to provide a track adjusting mechanism for elliptical exercisers and includes the adjusting mechanism can be pivoted to change the angle between two connection links on which two respective pedals are located. The long axis and the short axis of the oval track can be therefore adjusted.

SUMMARY OF THE INVENTION

[0006] The present invention relates to an elliptical exerciser that comprises a frame with a wheel connected thereto and two swinging mechanisms are pivotably connected on two sides of the wheel. Each swinging mechanism includes a swing bar and a connection link. A first end of each connection link is pivotally connected to the wheel and a second end of each connection link is connected to an adjusting mechanism which is includes a main body having a first end pivotally connected to the frame and the two second ends of the connection links are pivotally connected to a second end of the main body. A retractable device is connected between the adjusting mechanism and the frame.

[0007] The present invention will become more obvious from the following description when taken in connection with the accompanying drawings which show, for purposes of illustration only, a preferred embodiment in accordance with the present invention.

BRIEF DESCRIPTION OF THE DRAWINGS

[0008] FIG. 1 shows a conventional elliptical exerciser;
[0009] FIG. 2 shows another conventional elliptical exerciser;
[0010] FIG. 3 shows the elliptical exerciser of the present invention;
[0011] FIG. 4 is an exploded view to show the elliptical exerciser of the present invention;
[0012] FIG. 5 is a side view of the elliptical exerciser of the present invention, wherein the main body is perpendicular to the frame;
[0013] FIG. 6 is a side view of the elliptical exerciser of the present invention, wherein the main body is pivoted an angle relative to the frame;
[0014] FIGS. 7 and 8 show the change of angle between the two connection links when the main body is adjusted;
[0015] FIG. 9 shows another embodiment of the adjusting mechanism of the present invention;
[0016] FIG. 10 shows the main body is set at a first position for the adjusting mechanism in FIG. 9, and
[0017] FIG. 11 shows the main body is set at a second position for the adjusting mechanism in FIG. 9.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0018] Referring to FIGS. 3 to 5, the elliptical exerciser 1 of the present invention comprises a frame 10 with a wheel 20 connected thereto and two swinging mechanisms 40 are pivotally connected on two sides of the wheel 20. A post is connected to the frame 10 and a control panel 11 is connected to a top of the post. Two handles 12 are located in front of the control panel 11. Each swinging mechanism 40 includes a swing bar 41 which has a mediate portion 411 pivotally connected to two pivots 13 on two sides of the post. Two connection links 42 each have a first end 422 pivotally connected to the wheel 20 and a second end of each connection link 42 is connected to an adjusting mechanism 30 by two connection bars 32. Two pedals 43 are connected to the connection links 42 and two connection rods 421 are connected between the lower ends of the swing bars 41 and the support of the pedal 43.

[0019] The adjusting mechanism 30 including a main body 31 which is an H-shaped member and includes two lower ends 311 at a first end of the main body 31 pivotally connected to two first lugs 14 on the frame 10 by two bolts 51. Two upper ends 312 of a second end of the main body 31 are bent toward the wheel 20 and are pivotally connected to two respective first holes 321 in two respective first ends of the two connection bars 32 by two bolts 52. Two respective second holes 322 are defined in two respective second ends of the two connection bars 32 and the two respective second ends of the connection links 42 are pivotally connected with the second holes 322 by extending two pins 53 through the second holes 322, the second ends of the connection links 42 and two respective pivotable members 322. The main body 31 includes two transverse bars and one of the transverse bars has a second lug 313. A retractable device 33 is connected between the adjusting mechanism 30 and the frame 10.
The retractable device 33 includes a motor 331, a threaded rod 332 and a sleeve 333. The motor 331 is fixed on the frame 10 and includes an output portion 3311 and the threaded rod 332 is retractably connected to an output portion 3311 of the motor 331. The sleeve 333 is connected to the threaded rod 332 and pivotably connected to the second lug 313 on the main body 31. The sleeve 333 moves when the threaded rod 332 is rotated.

As shown in FIG. 6, the user can activate the motor 331 by operation on the control panel 11 so as to retract the threaded rod 332 so that the main body 31 tilts 14 degrees from the position in FIG. 5 where the main body 31 is perpendicular to the frame 10. Referring to FIGS. 7 and 8, when the two respective first ends 422 of the connection links 42 are moved to two opposite ends of the wheel 20, an angle of 10 degrees is defined between the two connection links 42 when the main body 31 is perpendicular to the frame 10, and an angle of 1 degree is defined between the two connection links 42 when the main body 31 is pivoted 14 degrees from the position in FIG. 7. An angle between the two connection bars 32 is 55 degrees when the main body 31 is pivoted 14 degrees. In the position of FIG. 8, the distance between the two pedals 43 is reduced and the long and short axes of the oval track of the pedals are also changed.

FIGS. 9 and 10 show another embodiment of the adjusting mechanism 30 wherein the retractable device 33 is a substantially T-shaped device and one end of a rod 34 of the retractable device 30 is connected to the second lug 313. The other end of the rod 34 includes a transverse shaft 342 and two rollers 54 are connected to two ends of the shaft 342. The two rollers 54 are movable on two rails 15 on the frame 10. A pivoting member 343 is connected to a mediate portion of the rod 34 and pivotably connected to the sleeve 333 of the retractable device 33. The sleeve 333 is connected to the threaded rod 332 and pivotably connected to a third lug 341 of the rod 34. The sleeve 333 moves when the threaded rod 332 is rotated.

As shown in FIG. 11, when the motor 331 is activated, the threaded rod 332 is rotated so that the sleeve 333 is moved to pull the main body 31 toward the wheel 20, and the rollers 54 move along the rails 15. When the main body 31 is positioned as shown in FIG. 10, the long axis of the oval track of the pedals 43 is an inclined oval. When the main body 31 is pivoted angle as disclosed in FIG. 11, the long axis of the oval track of the pedals 43 is adjusted to be close to a horizontal line.

While we have shown and described the embodiment in accordance with the present invention, it should be clear to those skilled in the art that further embodiments may be made without departing from the scope of the present invention.

What is claimed is:

1. An elliptical exerciser comprising:
   a frame with a wheel connected thereto and two swinging mechanisms pivotably connected on two sides of the wheel, each swinging mechanism including a swing bar and a connection link, a first end of each connection link pivotably connected to the wheel and a second end of each connection link connected to an adjusting mechanism, the adjusting mechanism including a main body which has a first end pivotably connected to the frame and the two second ends of the connection links pivotably connected to a second end of the main body, a retractable device connected between the adjusting mechanism and the frame.

2. The elliptical exerciser as claimed in claim 1, wherein two first lugs are connected to the frame and the main body is substantially an H-shaped member which includes two lower ends pivotably connected to the two first lugs by two bolts and two upper ends of the main body are bent toward the wheel and are pivotably connected to two respective first holes in two respective first ends of two connection bars by two bolts, two respective second holes are defined in two respective second ends of the two connection bars and the two respective second ends of the connection links are pivotably connected with the second holes by two pins.

3. The elliptical exerciser as claimed in claim 1, wherein two first lugs are connected to the frame and the main body is substantially an H-shaped member which includes a transverse bar on which a second lug is connected thereto, two lower ends of the main body are pivotably connected to the two first lugs by two bolts and two upper ends of the main body are bent toward the wheel and are pivotably connected to two respective first holes in two respective first ends of two connection bars by two bolts, two respective second holes are defined in two respective second ends of the two connection bars and the two respective second ends of the connection links are pivotably connected with the second holes by two pins, the retractable device is a substantially T-shaped device and one end of a rod of the retractable device is connected to the second lug, two rollers are connected to the other end of the rod and movable on two rails on the frame, a pivoting member is connected to a mediate portion of the rod and pivotably connected to a sleeve of the retractable device.

4. The elliptical exerciser as claimed in claim 1, wherein the retractable device includes a motor, a threaded rod and a sleeve, the motor is fixed on the frame and the threaded rod is connected to an output portion of the motor, the sleeve is connected to the threaded rod and pivotably connected to a second lug on the main body, the sleeve moves when the threaded rod is rotated.

5. The elliptical exerciser as claimed in claim 3, wherein the retractable device includes a motor, a threaded rod and a sleeve, the motor is fixed on the frame and the threaded rod is connected to an output portion of the motor, the sleeve is connected to the threaded rod and pivotably connected to a second lug of the rod, the sleeve moves when the threaded rod is rotated.

6. The elliptical exerciser as claimed in claim 1, wherein a control panel is connected on a top of a post on the frame and electrically to the motor.

* * * * *